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(54) Title: METHODS AND COMPOSITIONS FOR DIAGNOSIS AND PROGNOSIS OF RENAL INJURY AND RENAL FAILURE

(57) Abstract: The present invention relates to methods and compositions for monitoring, diagnosis, prognosis, and determination of treatment regimens in subjects suffering from or suspected of having a renal injury. In particular, the invention relates to using assays that detect one or more markers selected from the group consisting of soluble CD44 antigen, Angiopoietin-1, soluble Angiopoietin-1 receptor, C-X-C chemokine motif 5, soluble Endoglin, soluble Tumor-associated calcium signal transducer 1, Erythropoietin, soluble Fractalkine, Heme oxygenase 1, soluble Interleukin-1 receptor type II, soluble Interleukin-6 receptor subunit-alpha, Lymphotoxin, Lymphotoxin-alpha, Stromelysin-1, C-C motif chemokine 22, C-C motif chemokine 5, and Thrombospondin-1 as diagnostic and prognostic biomarkers in renal injuries.



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METHODS AND COMPOSITIONS FOR DIAGNOSIS AND PROGNOSIS OF RENAL INJURY AND RENAL FAILURE

[0001] The present invention claims priority from U.S. Provisional Patent Application 61/107,287 filed October 21, 2008; U.S. Provisional Patent Application 61/117,138 filed November 22, 2008; U.S. Provisional Patent Application 61/113,034 filed November 10, 2008; U.S. Provisional Patent Application 61/115,050 filed November 15, 2008; U.S. Provisional Patent Application 61/113,078 filed November 10, 2008; U.S. Provisional Patent Application 61/113,039 filed November 10, 2008; U.S. Provisional Patent Application 61/117,143 filed November 22, 2008; U.S. Provisional Patent Application 61/107,307 filed October 21, 2008; U.S. Provisional Patent Application 61/113,069 filed November 10, 2008; U.S. Provisional Patent Application 61/107,293 filed October 21, 2008; U.S. Provisional Patent Application 61/113,059 filed November 10, 2008; U.S. Provisional Patent Application 61/115,028 filed November 14, 2008; U.S. Provisional Patent Application 61/115,026 filed November 14, 2008; U.S. Provisional Patent Application 61/113,093 filed November 10, 2008; U.S. Provisional Patent Application 61/115,046 filed November 15, 2008; U.S. Provisional Patent Application 61/115,043 filed November 15, 2008; and U.S. Provisional Patent Application 61/117,136 filed November 22, 2008, each of which is hereby incorporated in its entirety including all tables, figures, and claims.

BACKGROUND OF THE INVENTION

[0002] The following discussion of the background of the invention is merely provided to aid the reader in understanding the invention and is not admitted to describe or constitute prior art to the present invention.

[0003] The kidney is responsible for water and solute excretion from the body. Its functions include maintenance of acid-base balance, regulation of electrolyte concentrations, control of blood volume, and regulation of blood pressure. As such, loss of kidney function through injury and/or disease results in substantial morbidity and mortality. A detailed discussion of renal injuries is provided in Harrison's Principles of Internal Medicine, 17th Ed., McGraw Hill, New York, pages 1741-1830, which are hereby incorporated by reference in their entirety. Renal disease and/or injury may be acute or chronic. Acute and chronic kidney disease are described as follows (from Current Medical Diagnosis & Treatment 2008, 47th Ed, McGraw Hill, New York, pages 785-815, which are hereby incorporated by reference in their entirety): "Acute renal failure is worsening of renal function over hours to days, resulting in the retention of nitrogenous wastes (such as urea nitrogen) and creatinine in the blood. Retention of these substances is called azotemia. Chronic renal failure (chronic kidney disease) results from an abnormal loss of renal function over months to years".

[0004] Acute renal failure (ARF, also known as acute kidney injury, or AKI) is an abrupt (typically detected within about 48 hours to 1 week) reduction in glomerular filtration. This loss of filtration capacity results in retention of nitrogenous (urea and creatinine) and non-nitrogenous waste products that are normally excreted by the kidney, a reduction in urine output, or both. It is reported that ARF complicates about 5% of hospital admissions, 4-15% of cardiopulmonary bypass surgeries, and up to 30% of intensive care admissions. ARF may be categorized as prerenal, intrinsic renal, or postrenal in causation. Intrinsic renal disease can be further divided into glomerular, tubular, interstitial, and vascular abnormalities. Major causes of ARF are described in the following table, which is adapted from the Merck Manual, 17th ed., Chapter 222, and which is hereby incorporated by reference in their entirety:

Type	Risk Factors
Prerenal	
ECF volume depletion	Excessive diuresis, hemorrhage, GI losses, loss of intravascular fluid into the extravascular space (due to ascites, peritonitis, pancreatitis, or burns), loss of skin and mucus membranes, renal salt- and water-wasting states
Low cardiac output	Cardiomyopathy, MI, cardiac tamponade, pulmonary embolism, pulmonary hypertension, positive-pressure mechanical ventilation
Low systemic vascular resistance	Septic shock, liver failure, antihypertensive drugs
Increased renal vascular resistance	NSAIDs, cyclosporines, tacrolimus, hypercalcemia, anaphylaxis, anesthetics, renal artery obstruction, renal vein thrombosis, sepsis, hepatorenal syndrome
Decreased efferent arteriolar tone (leading to decreased GFR from reduced glomerular transcapillary pressure, especially in patients with bilateral renal artery stenosis)	ACE inhibitors or angiotensin II receptor blockers
Intrinsic Renal	
Acute tubular injury	Ischemia (prolonged or severe prerenal state): surgery, hemorrhage, arterial or venous obstruction; Toxins: NSAIDs, cyclosporines, tacrolimus, aminoglycosides, foscarnet, ethylene glycol, hemoglobin, myoglobin, ifosfamide, heavy metals, methotrexate, radiopaque contrast agents, streptozotocin
Acute glomerulonephritis	ANCA-associated: Crescentic glomerulonephritis, polyarteritis nodosa, Wegener's granulomatosis; Anti-GBM glomerulonephritis: Goodpasture's syndrome; Immune-complex: Lupus glomerulonephritis, postinfectious glomerulonephritis, cryoglobulinemic glomerulonephritis
Acute tubulointerstitial nephritis	Drug reaction (eg, β -lactams, NSAIDs, sulfonamides, ciprofloxacin, thiazide diuretics, furosemide, phenytoin, allopurinol, pyelonephritis, papillary necrosis)
Acute vascular nephropathy	Vasculitis, malignant hypertension, thrombotic microangiopathies, scleroderma, atheroembolism
Infiltrative diseases	Lymphoma, sarcoidosis, leukemia
Postrenal	

Type	Risk Factors
Tubular precipitation	Uric acid (tumor lysis), sulfonamides, triamterene, acyclovir, indinavir, methotrexate, ethylene glycol ingestion, myeloma protein, myoglobin
Ureteral obstruction	Intrinsic: Calculi, clots, sloughed renal tissue, fungus ball, edema, malignancy, congenital defects; Extrinsic: Malignancy, retroperitoneal fibrosis, ureteral trauma during surgery or high impact injury
Bladder obstruction	Mechanical: Benign prostatic hyperplasia, prostate cancer, bladder cancer, urethral strictures, phimosis, paraphimosis, urethral valves, obstructed indwelling urinary catheter; Neurogenic: Anticholinergic drugs, upper or lower motor neuron lesion

[0005] In the case of ischemic ARF, the course of the disease may be divided into four phases. During an initiation phase, which lasts hours to days, reduced perfusion of the kidney is evolving into injury. Glomerular ultrafiltration reduces, the flow of filtrate is reduced due to debris within the tubules, and back leakage of filtrate through injured epithelium occurs. Renal injury can be mediated during this phase by reperfusion of the kidney. Initiation is followed by an extension phase which is characterized by continued ischemic injury and inflammation and may involve endothelial damage and vascular congestion. During the maintenance phase, lasting from 1 to 2 weeks, renal cell injury occurs, and glomerular filtration and urine output reaches a minimum. A recovery phase can follow in which the renal epithelium is repaired and GFR gradually recovers. Despite this, the survival rate of subjects with ARF may be as low as about 60%.

[0006] Acute kidney injury caused by radiocontrast agents (also called contrast media) and other nephrotoxins such as cyclosporine, antibiotics including aminoglycosides and anticancer drugs such as cisplatin manifests over a period of days to about a week. Contrast induced nephropathy (CIN, which is AKI caused by radiocontrast agents) is thought to be caused by intrarenal vasoconstriction (leading to ischemic injury) and from the generation of reactive oxygen species that are directly toxic to renal tubular epithelial cells. CIN classically presents as an acute (onset within 24-48h) but reversible (peak 3-5 days, resolution within 1 week) rise in blood urea nitrogen and serum creatinine.

[0007] A commonly reported criteria for defining and detecting AKI is an abrupt (typically within about 2-7 days or within a period of hospitalization) elevation of serum creatinine. Although the use of serum creatinine elevation to define and detect AKI is well established, the magnitude of the serum creatinine elevation and the time over which it is measured to define AKI varies considerably among publications. Traditionally, relatively large increases in serum creatinine such as 100%, 200%, an increase of at least 100% to a value over 2 mg/dL and other definitions were used to define AKI. However, the recent trend has been towards using smaller serum creatinine rises to define AKI. The relationship between serum creatinine rise, AKI and the associated health risks are reviewed in Praught and Shlipak, *Curr Opin Nephrol Hypertens* 14:265-270, 2005 and Chertow et al, *J Am Soc*

Nephrol 16: 3365-3370, 2005, which, with the references listed therein, are hereby incorporated by reference in their entirety. As described in these publications, acute worsening renal function (AKI) and increased risk of death and other detrimental outcomes are now known to be associated with very small increases in serum creatinine. These increases may be determined as a relative (percent) value or a nominal value. Relative increases in serum creatinine as small as 20% from the pre-injury value have been reported to indicate acutely worsening renal function (AKI) and increased health risk, but the more commonly reported value to define AKI and increased health risk is a relative increase of at least 25%. Nominal increases as small as 0.3 mg/dL, 0.2 mg/dL or even 0.1 mg/dL have been reported to indicate worsening renal function and increased risk of death. Various time periods for the serum creatinine to rise to these threshold values have been used to define AKI, for example, ranging from 2 days, 3 days, 7 days, or a variable period defined as the time the patient is in the hospital or intensive care unit. These studies indicate there is not a particular threshold serum creatinine rise (or time period for the rise) for worsening renal function or AKI, but rather a continuous increase in risk with increasing magnitude of serum creatinine rise.

[0008] One study (Lassnigg et al, *J Am Soc Nephrol* 15:1597-1605, 2004, hereby incorporated by reference in its entirety) investigated both increases and decreases in serum creatinine. Patients with a mild fall in serum creatinine of -0.1 to -0.3 mg/dL following heart surgery had the lowest mortality rate. Patients with a larger fall in serum creatinine (more than or equal to -0.4 mg/dL) or any increase in serum creatinine had a larger mortality rate. These findings caused the authors to conclude that even very subtle changes in renal function (as detected by small creatinine changes within 48 hours of surgery) seriously effect patient's outcomes. In an effort to reach consensus on a unified classification system for using serum creatinine to define AKI in clinical trials and in clinical practice, Bellomo *et al.*, *Crit Care*. 8(4):R204-12, 2004, which is hereby incorporated by reference in its entirety, proposes the following classifications for stratifying AKI patients:

“Risk”: serum creatinine increased 1.5 fold from baseline OR urine production of <0.5 ml/kg body weight/hr for 6 hours;

“Injury”: serum creatinine increased 2.0 fold from baseline OR urine production <0.5 ml/kg/hr for 12 h;

“Failure”: serum creatinine increased 3.0 fold from baseline OR creatinine >355 μ mol/l (with a rise of >44) or urine output below 0.3 ml/kg/hr for 24 h or anuria for at least 12 hours;

And included two clinical outcomes:

“Loss”: persistent need for renal replacement therapy for more than four weeks.

“ESRD”: end stage renal disease—the need for dialysis for more than 3 months.

These criteria are called the RIFLE criteria, which provide a useful clinical tool to classify renal status. As discussed in Kellum, *Crit. Care Med.* 36: S141-45, 2008 and Ricci *et al.*, *Kidney Int.* 73,

538-546, 2008, each hereby incorporated by reference in its entirety, the RIFLE criteria provide a uniform definition of AKI which has been validated in numerous studies.

[0009] More recently, Mehta *et al.*, *Crit. Care* 11:R31 (doi:10.1186.cc5713), 2007, hereby incorporated by reference in its entirety, proposes the following similar classifications for stratifying AKI patients, which have been modified from RIFLE:

“Stage I”: increase in serum creatinine of more than or equal to 0.3 mg/dL ($\geq 26.4 \mu\text{mol/L}$) or increase to more than or equal to 150% (1.5-fold) from baseline OR urine output less than 0.5 mL/kg per hour for more than 6 hours;

“Stage II”: increase in serum creatinine to more than 200% (> 2 -fold) from baseline OR urine output less than 0.5 mL/kg per hour for more than 12 hours;

“Stage III”: increase in serum creatinine to more than 300% (> 3 -fold) from baseline OR serum creatinine $\geq 354 \mu\text{mol/L}$ accompanied by an acute increase of at least $44 \mu\text{mol/L}$ OR urine output less than 0.3 mL/kg per hour for 24 hours or anuria for 12 hours.

[0010] The CIN Consensus Working Panel (McCollough *et al.*, *Rev Cardiovasc Med.* 2006;7(4):177-197, hereby incorporated by reference in its entirety) uses a serum creatinine rise of 25% to define Contrast induced nephropathy (which is a type of AKI). Although various groups propose slightly different criteria for using serum creatinine to detect AKI, the consensus is that small changes in serum creatinine, such as 0.3 mg/dL or 25%, are sufficient to detect AKI (worsening renal function) and that the magnitude of the serum creatinine change is an indicator of the severity of the AKI and mortality risk.

[0011] Although serial measurement of serum creatinine over a period of days is an accepted method of detecting and diagnosing AKI and is considered one of the most important tools to evaluate AKI patients, serum creatinine is generally regarded to have several limitations in the diagnosis, assessment and monitoring of AKI patients. The time period for serum creatinine to rise to values (e.g., a 0.3 mg/dL or 25% rise) considered diagnostic for AKI can be 48 hours or longer depending on the definition used. Since cellular injury in AKI can occur over a period of hours, serum creatinine elevations detected at 48 hours or longer can be a late indicator of injury, and relying on serum creatinine can thus delay diagnosis of AKI. Furthermore, serum creatinine is not a good indicator of the exact kidney status and treatment needs during the most acute phases of AKI when kidney function is changing rapidly. Some patients with AKI will recover fully, some will need dialysis (either short term or long term) and some will have other detrimental outcomes including death, major adverse cardiac events and chronic kidney disease. Because serum creatinine is a marker of filtration rate, it does not differentiate between the causes of AKI (pre-renal, intrinsic renal, post-renal obstruction, atheroembolic, etc) or the category or location of injury in intrinsic renal disease (for

example, tubular, glomerular or interstitial in origin). Urine output is similarly limited, Knowing these things can be of vital importance in managing and treating patients with AKI.

[0012] These limitations underscore the need for better methods to detect and assess AKI, particularly in the early and subclinical stages, but also in later stages when recovery and repair of the kidney can occur. Furthermore, there is a need to better identify patients who are at risk of having an AKI.

BRIEF SUMMARY OF THE INVENTION

[0013] It is an object of the invention to provide methods and compositions for evaluating renal function in a subject. As described herein, measurement of one or more markers selected from the group consisting of soluble CD44 antigen, Angiopoietin-1, soluble Angiopoietin-1 receptor, C-X-C chemokine motif 5, soluble Endoglin, soluble Tumor-associated calcium signal transducer 1, Erythropoietin, soluble Fractalkine, Heme oxygenase 1, soluble Interleukin-1 receptor type II, soluble Interleukin-6 receptor subunit-alpha, Lymphotactin, Lymphotoxin-alpha, Stromelysin-1, C-C motif chemokine 22, C-C motif chemokine 5, and Thrombospondin-1 (collectively referred to herein as "kidney injury markers, and individually as a "kidney injury marker") can be used for diagnosis, prognosis, risk stratification, staging, monitoring, categorizing and determination of further diagnosis and treatment regimens in subjects suffering or at risk of suffering from an injury to renal function, reduced renal function, and/or acute renal failure (also called acute kidney injury).

[0014] These kidney injury markers may be used, individually or in panels comprising a plurality of kidney injury markers, for risk stratification (that is, to identify subjects at risk for a future injury to renal function, for future progression to reduced renal function, for future progression to ARF, for future improvement in renal function, *etc.*); for diagnosis of existing disease (that is, to identify subjects who have suffered an injury to renal function, who have progressed to reduced renal function, who have progressed to ARF, *etc.*); for monitoring for deterioration or improvement of renal function; and for predicting a future medical outcome, such as improved or worsening renal function, a decreased or increased mortality risk, a decreased or increased risk that a subject will require renal replacement therapy (*i.e.*, hemodialysis, peritoneal dialysis, hemofiltration, and/or renal transplantation, a decreased or increased risk that a subject will recover from an injury to renal function, a decreased or increased risk that a subject will recover from ARF, a decreased or increased risk that a subject will progress to end stage renal disease, a decreased or increased risk that a subject will progress to chronic renal failure, a decreased or increased risk that a subject will suffer rejection of a transplanted kidney, *etc.*

[0015] In a first aspect, the present invention relates to methods for evaluating renal status in a subject. These methods comprise performing an assay method that is configured to detect one or more kidney injury markers of the present invention in a body fluid sample obtained from the subject. The

assay result(s), for example a measured concentration of one or more markers selected from the group consisting of soluble CD44 antigen, Angiopoietin-1, soluble Angiopoietin-1 receptor, C-X-C chemokine motif 5, soluble Endoglin, soluble Tumor-associated calcium signal transducer 1, Erythropoietin, soluble Fractalkine, Heme oxygenase 1, soluble Interleukin-1 receptor type II, soluble Interleukin-6 receptor subunit-alpha, Lymphotoxin-alpha, Stromelysin-1, C-C motif chemokine 22, C-C motif chemokine 5, and Thrombospondin-1 is/are then correlated to the renal status of the subject. This correlation to renal status may include correlating the assay result(s) to one or more of risk stratification, diagnosis, prognosis, staging, classifying and monitoring of the subject as described herein. Thus, the present invention utilizes one or more kidney injury markers of the present invention for the evaluation of renal injury.

[0016] In certain embodiments, the methods for evaluating renal status described herein are methods for risk stratification of the subject; that is, assigning a likelihood of one or more future changes in renal status to the subject. In these embodiments, the assay result(s) is/are correlated to one or more such future changes. The following are preferred risk stratification embodiments.

[0017] In preferred risk stratification embodiments, these methods comprise determining a subject's risk for a future injury to renal function, and the assay result(s) is/are correlated to a likelihood of such a future injury to renal function. For example, the measured concentration(s) may each be compared to a threshold value. For a "positive going" kidney injury marker, an increased likelihood of suffering a future injury to renal function is assigned to the subject when the measured concentration is above the threshold, relative to a likelihood assigned when the measured concentration is below the threshold. For a "negative going" kidney injury marker, an increased likelihood of suffering a future injury to renal function is assigned to the subject when the measured concentration is below the threshold, relative to a likelihood assigned when the measured concentration is above the threshold.

[0018] In other preferred risk stratification embodiments, these methods comprise determining a subject's risk for future reduced renal function, and the assay result(s) is/are correlated to a likelihood of such reduced renal function. For example, the measured concentrations may each be compared to a threshold value. For a "positive going" kidney injury marker, an increased likelihood of suffering a future reduced renal function is assigned to the subject when the measured concentration is above the threshold, relative to a likelihood assigned when the measured concentration is below the threshold. For a "negative going" kidney injury marker, an increased likelihood of future reduced renal function is assigned to the subject when the measured concentration is below the threshold, relative to a likelihood assigned when the measured concentration is above the threshold.

[0019] In still other preferred risk stratification embodiments, these methods comprise determining a subject's likelihood for a future improvement in renal function, and the assay result(s) is/are correlated to a likelihood of such a future improvement in renal function. For example, the

measured concentration(s) may each be compared to a threshold value. For a “positive going” kidney injury marker, an increased likelihood of a future improvement in renal function is assigned to the subject when the measured concentration is below the threshold, relative to a likelihood assigned when the measured concentration is above the threshold. For a “negative going” kidney injury marker, an increased likelihood of a future improvement in renal function is assigned to the subject when the measured concentration is above the threshold, relative to a likelihood assigned when the measured concentration is below the threshold.

[0020] In yet other preferred risk stratification embodiments, these methods comprise determining a subject’s risk for progression to ARF, and the result(s) is/are correlated to a likelihood of such progression to ARF. For example, the measured concentration(s) may each be compared to a threshold value. For a “positive going” kidney injury marker, an increased likelihood of progression to ARF is assigned to the subject when the measured concentration is above the threshold, relative to a likelihood assigned when the measured concentration is below the threshold. For a “negative going” kidney injury marker, an increased likelihood of progression to ARF is assigned to the subject when the measured concentration is below the threshold, relative to a likelihood assigned when the measured concentration is above the threshold.

[0021] And in other preferred risk stratification embodiments, these methods comprise determining a subject’s outcome risk, and the assay result(s) is/are correlated to a likelihood of the occurrence of a clinical outcome related to a renal injury suffered by the subject. For example, the measured concentration(s) may each be compared to a threshold value. For a “positive going” kidney injury marker, an increased likelihood of one or more of: acute kidney injury, progression to a worsening stage of AKI, mortality, a requirement for renal replacement therapy, a requirement for withdrawal of renal toxins, end stage renal disease, heart failure, stroke, myocardial infarction, progression to chronic kidney disease, *etc.*, is assigned to the subject when the measured concentration is above the threshold, relative to a likelihood assigned when the measured concentration is below the threshold. For a “negative going” kidney injury marker, an increased likelihood of one or more of: acute kidney injury, progression to a worsening stage of AKI, mortality, a requirement for renal replacement therapy, a requirement for withdrawal of renal toxins, end stage renal disease, heart failure, stroke, myocardial infarction, progression to chronic kidney disease, *etc.*, is assigned to the subject when the measured concentration is below the threshold, relative to a likelihood assigned when the measured concentration is above the threshold.

[0022] In such risk stratification embodiments, preferably the likelihood or risk assigned is that an event of interest is more or less likely to occur within 180 days of the time at which the body fluid sample is obtained from the subject. In particularly preferred embodiments, the likelihood or risk assigned relates to an event of interest occurring within a shorter time period such as 18 months, 120 days, 90 days, 60 days, 45 days, 30 days, 21 days, 14 days, 7 days, 5 days, 96 hours, 72 hours, 48

hours, 36 hours, 24 hours, 12 hours, or less. A risk at 0 hours of the time at which the body fluid sample is obtained from the subject is equivalent to diagnosis of a current condition.

[0023] In preferred risk stratification embodiments, the subject is selected for risk stratification based on the pre-existence in the subject of one or more known risk factors for prerenal, intrinsic renal, or postrenal ARF. For example, a subject undergoing or having undergone major vascular surgery, coronary artery bypass, or other cardiac surgery; a subject having pre-existing congestive heart failure, preeclampsia, eclampsia, diabetes mellitus, hypertension, coronary artery disease, proteinuria, renal insufficiency, glomerular filtration below the normal range, cirrhosis, serum creatinine above the normal range, or sepsis; or a subject exposed to NSAIDs, cyclosporines, tacrolimus, aminoglycosides, foscarnet, ethylene glycol, hemoglobin, myoglobin, ifosfamide, heavy metals, methotrexate, radiopaque contrast agents, or streptozotocin are all preferred subjects for monitoring risks according to the methods described herein. This list is not meant to be limiting. By “pre-existence” in this context is meant that the risk factor exists at the time the body fluid sample is obtained from the subject. In particularly preferred embodiments, a subject is chosen for risk stratification based on an existing diagnosis of injury to renal function, reduced renal function, or ARF.

[0024] In other embodiments, the methods for evaluating renal status described herein are methods for diagnosing a renal injury in the subject; that is, assessing whether or not a subject has suffered from an injury to renal function, reduced renal function, or ARF. In these embodiments, the assay result(s), for example a measured concentration of one or more markers selected from the group consisting of soluble CD44 antigen, Angiopoietin-1, soluble Angiopoietin-1 receptor, C-X-C chemokine motif 5, soluble Endoglin, soluble Tumor-associated calcium signal transducer 1, Erythropoietin, soluble Fractalkine, Heme oxygenase 1, soluble Interleukin-1 receptor type II, soluble Interleukin-6 receptor subunit-alpha, Lymphotactin, Lymphotoxin-alpha, Stromelysin-1, C-C motif chemokine 22, C-C motif chemokine 5, and Thrombospondin-1 is/are correlated to the occurrence or nonoccurrence of a change in renal status. The following are preferred diagnostic embodiments.

[0025] In preferred diagnostic embodiments, these methods comprise diagnosing the occurrence or nonoccurrence of an injury to renal function, and the assay result(s) is/are correlated to the occurrence or nonoccurrence of such an injury. For example, each of the measured concentration(s) may be compared to a threshold value. For a positive going marker, an increased likelihood of the occurrence of an injury to renal function is assigned to the subject when the measured concentration is above the threshold (relative to the likelihood assigned when the measured concentration is below the threshold); alternatively, when the measured concentration is below the threshold, an increased likelihood of the nonoccurrence of an injury to renal function may be assigned to the subject (relative to the likelihood assigned when the measured concentration is above the threshold). For a negative going marker, an increased likelihood of the occurrence of an injury to renal function is assigned to

the subject when the measured concentration is below the threshold (relative to the likelihood assigned when the measured concentration is above the threshold); alternatively, when the measured concentration is above the threshold, an increased likelihood of the nonoccurrence of an injury to renal function may be assigned to the subject (relative to the likelihood assigned when the measured concentration is below the threshold).

[0026] In other preferred diagnostic embodiments, these methods comprise diagnosing the occurrence or nonoccurrence of reduced renal function, and the assay result(s) is/are correlated to the occurrence or nonoccurrence of an injury causing reduced renal function. For example, each of the measured concentration(s) may be compared to a threshold value. For a positive going marker, an increased likelihood of the occurrence of an injury causing reduced renal function is assigned to the subject when the measured concentration is above the threshold (relative to the likelihood assigned when the measured concentration is below the threshold); alternatively, when the measured concentration is below the threshold, an increased likelihood of the nonoccurrence of an injury causing reduced renal function may be assigned to the subject (relative to the likelihood assigned when the measured concentration is above the threshold). For a negative going marker, an increased likelihood of the occurrence of an injury causing reduced renal function is assigned to the subject when the measured concentration is below the threshold (relative to the likelihood assigned when the measured concentration is above the threshold); alternatively, when the measured concentration is above the threshold, an increased likelihood of the nonoccurrence of an injury causing reduced renal function may be assigned to the subject (relative to the likelihood assigned when the measured concentration is below the threshold).

[0027] In yet other preferred diagnostic embodiments, these methods comprise diagnosing the occurrence or nonoccurrence of ARF, and the assay result(s) is/are correlated to the occurrence or nonoccurrence of an injury causing ARF. For example, each of the measured concentration(s) may be compared to a threshold value. For a positive going marker, an increased likelihood of the occurrence of ARF is assigned to the subject when the measured concentration is above the threshold (relative to the likelihood assigned when the measured concentration is below the threshold); alternatively, when the measured concentration is below the threshold, an increased likelihood of the nonoccurrence of ARF may be assigned to the subject (relative to the likelihood assigned when the measured concentration is above the threshold). For a negative going marker, an increased likelihood of the occurrence of ARF is assigned to the subject when the measured concentration is below the threshold (relative to the likelihood assigned when the measured concentration is above the threshold); alternatively, when the measured concentration is above the threshold, an increased likelihood of the nonoccurrence of ARF may be assigned to the subject (relative to the likelihood assigned when the measured concentration is below the threshold).

[0028] In still other preferred diagnostic embodiments, these methods comprise diagnosing a subject as being in need of renal replacement therapy, and the assay result(s) is/are correlated to a need for renal replacement therapy. For example, each of the measured concentration(s) may be compared to a threshold value. For a positive going marker, an increased likelihood of the occurrence of an injury creating a need for renal replacement therapy is assigned to the subject when the measured concentration is above the threshold (relative to the likelihood assigned when the measured concentration is below the threshold); alternatively, when the measured concentration is below the threshold, an increased likelihood of the nonoccurrence of an injury creating a need for renal replacement therapy may be assigned to the subject (relative to the likelihood assigned when the measured concentration is above the threshold). For a negative going marker, an increased likelihood of the occurrence of an injury creating a need for renal replacement therapy is assigned to the subject when the measured concentration is below the threshold (relative to the likelihood assigned when the measured concentration is above the threshold); alternatively, when the measured concentration is above the threshold, an increased likelihood of the nonoccurrence of an injury creating a need for renal replacement therapy may be assigned to the subject (relative to the likelihood assigned when the measured concentration is below the threshold).

[0029] In still other preferred diagnostic embodiments, these methods comprise diagnosing a subject as being in need of renal transplantation, and the assay result(s) is/are correlated to a need for renal transplantation. For example, each of the measured concentration(s) may be compared to a threshold value. For a positive going marker, an increased likelihood of the occurrence of an injury creating a need for renal transplantation is assigned to the subject when the measured concentration is above the threshold (relative to the likelihood assigned when the measured concentration is below the threshold); alternatively, when the measured concentration is below the threshold, an increased likelihood of the nonoccurrence of an injury creating a need for renal transplantation may be assigned to the subject (relative to the likelihood assigned when the measured concentration is above the threshold). For a negative going marker, an increased likelihood of the occurrence of an injury creating a need for renal transplantation is assigned to the subject when the measured concentration is below the threshold (relative to the likelihood assigned when the measured concentration is above the threshold); alternatively, when the measured concentration is above the threshold, an increased likelihood of the nonoccurrence of an injury creating a need for renal transplantation may be assigned to the subject (relative to the likelihood assigned when the measured concentration is below the threshold).

[0030] In still other embodiments, the methods for evaluating renal status described herein are methods for monitoring a renal injury in the subject; that is, assessing whether or not renal function is improving or worsening in a subject who has suffered from an injury to renal function, reduced renal function, or ARF. In these embodiments, the assay result(s), for example a measured concentration of one or more markers selected from the group consisting of soluble CD44 antigen, Angiopoietin-1,

soluble Angiopoietin-1 receptor, C-X-C chemokine motif 5, soluble Endoglin, soluble Tumor-associated calcium signal transducer 1, Erythropoietin, soluble Fractalkine, Heme oxygenase 1, soluble Interleukin-1 receptor type II, soluble Interleukin-6 receptor subunit-alpha, Lymphotactin, Lymphotoxin-alpha, Stromelysin-1, C-C motif chemokine 22, C-C motif chemokine 5, and Thrombospondin-1 is/are correlated to the occurrence or nonoccurrence of a change in renal status. The following are preferred monitoring embodiments.

[0031] In preferred monitoring embodiments, these methods comprise monitoring renal status in a subject suffering from an injury to renal function, and the assay result(s) is/are correlated to the occurrence or nonoccurrence of a change in renal status in the subject. For example, the measured concentration(s) may be compared to a threshold value. For a positive going marker, when the measured concentration is above the threshold, a worsening of renal function may be assigned to the subject; alternatively, when the measured concentration is below the threshold, an improvement of renal function may be assigned to the subject. For a negative going marker, when the measured concentration is below the threshold, a worsening of renal function may be assigned to the subject; alternatively, when the measured concentration is above the threshold, an improvement of renal function may be assigned to the subject.

[0032] In other preferred monitoring embodiments, these methods comprise monitoring renal status in a subject suffering from reduced renal function, and the assay result(s) is/are correlated to the occurrence or nonoccurrence of a change in renal status in the subject. For example, the measured concentration(s) may be compared to a threshold value. For a positive going marker, when the measured concentration is above the threshold, a worsening of renal function may be assigned to the subject; alternatively, when the measured concentration is below the threshold, an improvement of renal function may be assigned to the subject. For a negative going marker, when the measured concentration is below the threshold, a worsening of renal function may be assigned to the subject; alternatively, when the measured concentration is above the threshold, an improvement of renal function may be assigned to the subject.

[0033] In yet other preferred monitoring embodiments, these methods comprise monitoring renal status in a subject suffering from acute renal failure, and the assay result(s) is/are correlated to the occurrence or nonoccurrence of a change in renal status in the subject. For example, the measured concentration(s) may be compared to a threshold value. For a positive going marker, when the measured concentration is above the threshold, a worsening of renal function may be assigned to the subject; alternatively, when the measured concentration is below the threshold, an improvement of renal function may be assigned to the subject. For a negative going marker, when the measured concentration is below the threshold, a worsening of renal function may be assigned to the subject; alternatively, when the measured concentration is above the threshold, an improvement of renal function may be assigned to the subject.

[0034] In other additional preferred monitoring embodiments, these methods comprise monitoring renal status in a subject at risk of an injury to renal function due to the pre-existence of one or more known risk factors for prerenal, intrinsic renal, or postrenal ARF, and the assay result(s) is/are correlated to the occurrence or nonoccurrence of a change in renal status in the subject. For example, the measured concentration(s) may be compared to a threshold value. For a positive going marker, when the measured concentration is above the threshold, a worsening of renal function may be assigned to the subject; alternatively, when the measured concentration is below the threshold, an improvement of renal function may be assigned to the subject. For a negative going marker, when the measured concentration is below the threshold, a worsening of renal function may be assigned to the subject; alternatively, when the measured concentration is above the threshold, an improvement of renal function may be assigned to the subject.

[0035] In still other embodiments, the methods for evaluating renal status described herein are methods for classifying a renal injury in the subject; that is, determining whether a renal injury in a subject is prerenal, intrinsic renal, or postrenal; and/or further subdividing these classes into subclasses such as acute tubular injury, acute glomerulonephritis acute tubulointerstitial nephritis, acute vascular nephropathy, or infiltrative disease; and/or assigning a likelihood that a subject will progress to a particular RIFLE stage. In these embodiments, the assay result(s), for example a measured concentration of one or more markers selected from the group consisting of soluble CD44 antigen, Angiopoietin-1, soluble Angiopoietin-1 receptor, C-X-C chemokine motif 5, soluble Endoglin, soluble Tumor-associated calcium signal transducer 1, Erythropoietin, soluble Fractalkine, Heme oxygenase 1, soluble Interleukin-1 receptor type II, soluble Interleukin-6 receptor subunit-alpha, Lymphotoxin, Lymphotoxin-alpha, Stromelysin-1, C-C motif chemokine 22, C-C motif chemokine 5, and Thrombospondin-1 is/are correlated to a particular class and/or subclass. The following are preferred classification embodiments.

[0036] In preferred classification embodiments, these methods comprise determining whether a renal injury in a subject is prerenal, intrinsic renal, or postrenal; and/or further subdividing these classes into subclasses such as acute tubular injury, acute glomerulonephritis acute tubulointerstitial nephritis, acute vascular nephropathy, or infiltrative disease; and/or assigning a likelihood that a subject will progress to a particular RIFLE stage, and the assay result(s) is/are correlated to the injury classification for the subject. For example, the measured concentration may be compared to a threshold value, and when the measured concentration is above the threshold, a particular classification is assigned; alternatively, when the measured concentration is below the threshold, a different classification may be assigned to the subject.

[0037] A variety of methods may be used by the skilled artisan to arrive at a desired threshold value for use in these methods. For example, the threshold value may be determined from a population of normal subjects by selecting a concentration representing the 75th, 85th, 90th, 95th, or 99th

percentile of a kidney injury marker measured in such normal subjects. Alternatively, the threshold value may be determined from a “diseased” population of subjects, e.g., those suffering from an injury or having a predisposition for an injury (e.g., progression to ARF or some other clinical outcome such as death, dialysis, renal transplantation, *etc.*), by selecting a concentration representing the 75th, 85th, 90th, 95th, or 99th percentile of a kidney injury marker measured in such subjects. In another alternative, the threshold value may be determined from a prior measurement of a kidney injury marker in the same subject; that is, a temporal change in the level of a kidney injury marker in the subject may be used to assign risk to the subject.

[0001] The foregoing discussion is not meant to imply, however, that the kidney injury markers of the present invention must be compared to corresponding individual thresholds. Methods for combining assay results can comprise the use of multivariate logistical regression, loglinear modeling, neural network analysis, n-of-m analysis, decision tree analysis, calculating ratios of markers, *etc.* This list is not meant to be limiting. In these methods, a composite result which is determined by combining individual markers may be treated as if it is itself a marker; that is, a threshold may be determined for the composite result as described herein for individual markers, and the composite result for an individual patient compared to this threshold.

[0038] The ability of a particular test to distinguish two populations can be established using ROC analysis. For example, ROC curves established from a “first” subpopulation which is predisposed to one or more future changes in renal status, and a “second” subpopulation which is not so predisposed can be used to calculate a ROC curve, and the area under the curve provides a measure of the quality of the test. Preferably, the tests described herein provide a ROC curve area greater than 0.5, preferably at least 0.6, more preferably 0.7, still more preferably at least 0.8, even more preferably at least 0.9, and most preferably at least 0.95.

[0039] In certain aspects, the measured concentration of one or more kidney injury markers, or a composite of such markers, may be treated as continuous variables. For example, any particular concentration can be converted into a corresponding probability of a future reduction in renal function for the subject, the occurrence of an injury, a classification, *etc.* In yet another alternative, a threshold that can provide an acceptable level of specificity and sensitivity in separating a population of subjects into “bins” such as a “first” subpopulation (e.g., which is predisposed to one or more future changes in renal status, the occurrence of an injury, a classification, *etc.*) and a “second” subpopulation which is not so predisposed. A threshold value is selected to separate this first and second population by one or more of the following measures of test accuracy:

an odds ratio greater than 1, preferably at least about 2 or more or about 0.5 or less, more preferably at least about 3 or more or about 0.33 or less, still more preferably at least about 4 or more or about 0.25 or less, even more preferably at least about 5 or more or about 0.2 or less, and most preferably at least about 10 or more or about 0.1 or less;

a specificity of greater than 0.5, preferably at least about 0.6, more preferably at least about 0.7, still more preferably at least about 0.8, even more preferably at least about 0.9 and most preferably at least about 0.95, with a corresponding sensitivity greater than 0.2, preferably greater than about 0.3, more preferably greater than about 0.4, still more preferably at least about 0.5, even more preferably about 0.6, yet more preferably greater than about 0.7, still more preferably greater than about 0.8, more preferably greater than about 0.9, and most preferably greater than about 0.95;

a sensitivity of greater than 0.5, preferably at least about 0.6, more preferably at least about 0.7, still more preferably at least about 0.8, even more preferably at least about 0.9 and most preferably at least about 0.95, with a corresponding specificity greater than 0.2, preferably greater than about 0.3, more preferably greater than about 0.4, still more preferably at least about 0.5, even more preferably about 0.6, yet more preferably greater than about 0.7, still more preferably greater than about 0.8, more preferably greater than about 0.9, and most preferably greater than about 0.95;

at least about 75% sensitivity, combined with at least about 75% specificity;

a positive likelihood ratio (calculated as $\text{sensitivity}/(1-\text{specificity})$) of greater than 1, at least about 2, more preferably at least about 3, still more preferably at least about 5, and most preferably at least about 10; or

a negative likelihood ratio (calculated as $(1-\text{sensitivity})/\text{specificity}$) of less than 1, less than or equal to about 0.5, more preferably less than or equal to about 0.3, and most preferably less than or equal to about 0.1.

The term “about” in the context of any of the above measurements refers to $\pm 5\%$ of a given measurement.

[0040] Multiple thresholds may also be used to assess renal status in a subject. For example, a “first” subpopulation which is predisposed to one or more future changes in renal status, the occurrence of an injury, a classification, etc., and a “second” subpopulation which is not so predisposed can be combined into a single group. This group is then subdivided into three or more equal parts (known as tertiles, quartiles, quintiles, etc., depending on the number of subdivisions). An odds ratio is assigned to subjects based on which subdivision they fall into. If one considers a tertile, the lowest or highest tertile can be used as a reference for comparison of the other subdivisions. This reference subdivision is assigned an odds ratio of 1. The second tertile is assigned an odds ratio that is relative to that first tertile. That is, someone in the second tertile might be 3 times more likely to suffer one or more future changes in renal status in comparison to someone in the first tertile. The third tertile is also assigned an odds ratio that is relative to that first tertile.

[0041] In certain embodiments, the assay method is an immunoassay. Antibodies for use in such assays will specifically bind a full length kidney injury marker of interest, and may also bind one or more polypeptides that are “related” thereto, as that term is defined hereinafter. Numerous

immunoassay formats are known to those of skill in the art. Preferred body fluid samples are selected from the group consisting of urine, blood, serum, saliva, tears, and plasma.

[0042] The foregoing method steps should not be interpreted to mean that the kidney injury marker assay result(s) is/are used in isolation in the methods described herein. Rather, additional variables or other clinical indicia may be included in the methods described herein. For example, a risk stratification, diagnostic, classification, monitoring, etc. method may combine the assay result(s) with one or more variables measured for the subject selected from the group consisting of demographic information (e.g., weight, sex, age, race), medical history (e.g., family history, type of surgery, pre-existing disease such as aneurism, congestive heart failure, preeclampsia, eclampsia, diabetes mellitus, hypertension, coronary artery disease, proteinuria, renal insufficiency, or sepsis, type of toxin exposure such as NSAIDs, cyclosporines, tacrolimus, aminoglycosides, foscarnet, ethylene glycol, hemoglobin, myoglobin, ifosfamide, heavy metals, methotrexate, radiopaque contrast agents, or streptozotocin), clinical variables (e.g., blood pressure, temperature, respiration rate), risk scores (APACHE score, PREDICT score, TIMI Risk Score for UA/NSTEMI, Framingham Risk Score), a glomerular filtration rate, an estimated glomerular filtration rate, a urine production rate, a serum or plasma creatinine concentration, a urine creatinine concentration, a fractional excretion of sodium, a urine sodium concentration, a urine creatinine to serum or plasma creatinine ratio, a urine specific gravity, a urine osmolality, a urine urea nitrogen to plasma urea nitrogen ratio, a plasma BUN to creatinine ratio, a renal failure index calculated as urine sodium / (urine creatinine / plasma creatinine), a serum or plasma neutrophil gelatinase (NGAL) concentration, a urine NGAL concentration, a serum or plasma cystatin C concentration, a serum or plasma cardiac troponin concentration, a serum or plasma BNP concentration, a serum or plasma NTproBNP concentration, and a serum or plasma proBNP concentration. Other measures of renal function which may be combined with one or more kidney injury marker assay result(s) are described hereinafter and in Harrison's Principles of Internal Medicine, 17th Ed., McGraw Hill, New York, pages 1741-1830, and Current Medical Diagnosis & Treatment 2008, 47th Ed, McGraw Hill, New York, pages 785-815, each of which are hereby incorporated by reference in their entirety.

[0043] When more than one marker is measured, the individual markers may be measured in samples obtained at the same time, or may be determined from samples obtained at different (e.g., an earlier or later) times. The individual markers may also be measured on the same or different body fluid samples. For example, one kidney injury marker may be measured in a serum or plasma sample and another kidney injury marker may be measured in a urine sample. In addition, assignment of a likelihood may combine an individual kidney injury marker assay result with temporal changes in one or more additional variables.

[0044] In various related aspects, the present invention also relates to devices and kits for performing the methods described herein. Suitable kits comprise reagents sufficient for performing an

assay for at least one of the described kidney injury markers, together with instructions for performing the described threshold comparisons.

[0045] In certain embodiments, reagents for performing such assays are provided in an assay device, and such assay devices may be included in such a kit. Preferred reagents can comprise one or more solid phase antibodies, the solid phase antibody comprising antibody that detects the intended biomarker target(s) bound to a solid support. In the case of sandwich immunoassays, such reagents can also include one or more detectably labeled antibodies, the detectably labeled antibody comprising antibody that detects the intended biomarker target(s) bound to a detectable label. Additional optional elements that may be provided as part of an assay device are described hereinafter.

[0046] Detectable labels may include molecules that are themselves detectable (*e.g.*, fluorescent moieties, electrochemical labels, ecl (electrochemical luminescence) labels, metal chelates, colloidal metal particles, *etc.*) as well as molecules that may be indirectly detected by production of a detectable reaction product (*e.g.*, enzymes such as horseradish peroxidase, alkaline phosphatase, *etc.*) or through the use of a specific binding molecule which itself may be detectable (*e.g.*, a labeled antibody that binds to the second antibody, biotin, digoxigenin, maltose, oligohistidine, 2,4-dinitrobenzene, phenylarsenate, ssDNA, dsDNA, *etc.*).

[0047] Generation of a signal from the signal development element can be performed using various optical, acoustical, and electrochemical methods well known in the art. Examples of detection modes include fluorescence, radiochemical detection, reflectance, absorbance, amperometry, conductance, impedance, interferometry, ellipsometry, *etc.* In certain of these methods, the solid phase antibody is coupled to a transducer (*e.g.*, a diffraction grating, electrochemical sensor, *etc.*) for generation of a signal, while in others, a signal is generated by a transducer that is spatially separate from the solid phase antibody (*e.g.*, a fluorometer that employs an excitation light source and an optical detector). This list is not meant to be limiting. Antibody-based biosensors may also be employed to determine the presence or amount of analytes that optionally eliminate the need for a labeled molecule.

BRIEF DESCRIPTION OF THE FIGURES

[0048] Fig. 1 provides data tables determined in accordance with Example 6 for the comparison of marker levels in urine samples collected for Cohort 1 (patients that did not progress beyond RIFLE stage 0) and in urine samples collected from subjects at 0, 24 hours, and 48 hours prior to reaching stage R, I or F in Cohort 2. Tables provide descriptive statistics, AUC analysis, and sensitivity, specificity and odds ratio calculations at various threshold (cutoff) levels for the various markers.

[0049] Fig. 2 provides data tables determined in accordance with Example 7 for the comparison of marker levels in urine samples collected for Cohort 1 (patients that did not progress beyond RIFLE

stage 0 or R) and in urine samples collected from subjects at 0, 24 hours, and 48 hours prior to reaching stage I or F in Cohort 2. Tables provide descriptive statistics, AUC analysis, and sensitivity, specificity and odds ratio calculations at various threshold (cutoff) levels for the various markers.

[0050] Fig. 3 provides data tables determined in accordance with Example 8 for the comparison of marker levels in urine samples collected for Cohort 1 (patients that reached, but did not progress beyond, RIFLE stage R) and in urine samples collected from subjects at 0, 24 hours, and 48 hours prior to reaching stage I or F in Cohort 2. Tables provide descriptive statistics, AUC analysis, and sensitivity, specificity and odds ratio calculations at various threshold (cutoff) levels for the various markers.

[0051] Fig. 4 provides data tables determined in accordance with Example 9 for the comparison of marker levels in urine samples collected for Cohort 1 (patients that did not progress beyond RIFLE stage 0) and in urine samples collected from subjects at 0, 24 hours, and 48 hours prior to reaching stage F in Cohort 2. Tables provide descriptive statistics, AUC analysis, and sensitivity, specificity and odds ratio calculations at various threshold (cutoff) levels for the various markers.

[0052] Fig. 5 provides data tables determined in accordance with Example 6 for the comparison of marker levels in plasma samples collected for Cohort 1 (patients that did not progress beyond RIFLE stage 0) and in plasma samples collected from subjects at 0, 24 hours, and 48 hours prior to reaching stage R, I or F in Cohort 2. Tables provide descriptive statistics, AUC analysis, and sensitivity, specificity and odds ratio calculations at various threshold (cutoff) levels for the various markers.

[0053] Fig. 6 provides data tables determined in accordance with Example 7 for the comparison of marker levels in plasma samples collected for Cohort 1 (patients that did not progress beyond RIFLE stage 0 or R) and in plasma samples collected from subjects at 0, 24 hours, and 48 hours prior to reaching stage I or F in Cohort 2. Tables provide descriptive statistics, AUC analysis, and sensitivity, specificity and odds ratio calculations at various threshold (cutoff) levels for the various markers.

[0054] Fig. 7 provides data tables determined in accordance with Example 8 for the comparison of marker levels in plasma samples collected for Cohort 1 (patients that reached, but did not progress beyond, RIFLE stage R) and in plasma samples collected from subjects at 0, 24 hours, and 48 hours prior to reaching stage I or F in Cohort 2. Tables provide descriptive statistics, AUC analysis, and sensitivity, specificity and odds ratio calculations at various threshold (cutoff) levels for the various markers.

[0055] Fig. 8 provides data tables determined in accordance with Example 9 for the comparison of marker levels in plasma samples collected for Cohort 1 (patients that did not progress beyond RIFLE stage 0) and in plasma samples collected from subjects at 0, 24 hours, and 48 hours prior to

reaching stage F in Cohort 2. Tables provide descriptive statistics, AUC analysis, and sensitivity, specificity and odds ratio calculations at various threshold (cutoff) levels for the various markers.

DETAILED DESCRIPTION OF THE INVENTION

[0056] The present invention relates to methods and compositions for diagnosis, differential diagnosis, risk stratification, monitoring, classifying and determination of treatment regimens in subjects suffering or at risk of suffering from injury to renal function, reduced renal function and/or acute renal failure through measurement of one or more kidney injury markers. In various embodiments, a measured concentration of one or more markers selected from the group consisting of soluble CD44 antigen, Angiopoietin-1, soluble Angiopoietin-1 receptor, C-X-C chemokine motif 5, soluble Endoglin, soluble Tumor-associated calcium signal transducer 1, Erythropoietin, soluble Fractalkine, Heme oxygenase 1, soluble Interleukin-1 receptor type II, soluble Interleukin-6 receptor subunit-alpha, Lymphotoxin, Lymphotoxin-alpha, Stromelysin-1, C-C motif chemokine 22, C-C motif chemokine 5, and Thrombospondin-1, or one or more markers related thereto, are correlated to the renal status of the subject.

[0057] For purposes of this document, the following definitions apply:

As used herein, an “injury to renal function” is an abrupt (within 14 days, preferably within 7 days, more preferably within 72 hours, and still more preferably within 48 hours) measurable reduction in a measure of renal function. Such an injury may be identified, for example, by a decrease in glomerular filtration rate or estimated GFR, a reduction in urine output, an increase in serum creatinine, an increase in serum cystatin C, a requirement for renal replacement therapy, *etc.* “Improvement in Renal Function” is an abrupt (within 14 days, preferably within 7 days, more preferably within 72 hours, and still more preferably within 48 hours) measurable increase in a measure of renal function. Preferred methods for measuring and/or estimating GFR are described hereinafter.

As used herein, “reduced renal function” is an abrupt (within 14 days, preferably within 7 days, more preferably within 72 hours, and still more preferably within 48 hours) reduction in kidney function identified by an absolute increase in serum creatinine of greater than or equal to 0.1 mg/dL ($\geq 8.8 \mu\text{mol/L}$), a percentage increase in serum creatinine of greater than or equal to 20% (1.2-fold from baseline), or a reduction in urine output (documented oliguria of less than 0.5 ml/kg per hour).

As used herein, “acute renal failure” or “ARF” is an abrupt (within 14 days, preferably within 7 days, more preferably within 72 hours, and still more preferably within 48 hours) reduction in kidney function identified by an absolute increase in serum creatinine of greater than or equal to 0.3 mg/dl ($\geq 26.4 \mu\text{mol/L}$), a percentage increase in serum creatinine of greater than or equal to 50% (1.5-fold from baseline), or a reduction in urine output (documented oliguria of less than 0.5 ml/kg per hour for at least 6 hours). This term is synonymous with “acute kidney injury” or “AKI.”

[0058] In this regard, the skilled artisan will understand that the signals obtained from an immunoassay are a direct result of complexes formed between one or more antibodies and the target biomolecule (*i.e.*, the analyte) and polypeptides containing the necessary epitope(s) to which the antibodies bind. While such assays may detect the full length biomarker and the assay result be expressed as a concentration of a biomarker of interest, the signal from the assay is actually a result of all such “immunoreactive” polypeptides present in the sample. Expression of biomarkers may also be determined by means other than immunoassays, including protein measurements (such as dot blots, western blots, chromatographic methods, mass spectrometry, *etc.*) and nucleic acid measurements (mRNA quantitation). This list is not meant to be limiting.

[0059] As used herein, the term “CD44 antigen” refers to one or more polypeptides present in a biological sample that are derived from the CD44 antigen precursor (Swiss-Prot P01670 (SEQ ID NO: 1)).

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10      20      30      40      50      60
MDKFWHAAW GLCLVPLSLA QIDLNITCRF AGVFHVEKNG RYSISRTEAA
DLCKAFNSTL

70      80      90     100     110     120
PTMAQMEKAL SIGFETCRYG FIEGHVVIPR IHPNSICAA N TG VYILTSN TSQYD TYCFN

130     140     150     160     170     180
ASAPPEEDCT SVTDLPNAFD GPITITIVNR DGTRYVQKGE YRTNPEDIYP SNPTDDDDVSS

190     200     210     220     230     240
GSSSERSSTS GGYIFYTFST VHPIPEDDSP WITDSTDRIP ATTLMSTSAT ATETATKRQE

250     260     270     280     290     300
TWDWFSWLFL PSESKNHLHT TTQMAGTSSN TISAGWEPNE ENEDERDRHL SFGSGIDDD

310     320     330     340     350     360
EDFISSTIST TPRAFDHTKQ NQDWTQWNPS HSNPEVLLQT TTRMTDVDRN GTTAYEGNWN

370     380     390     400     410     420
PEAHPPLIHH EHHEEEETPH STSTIQATPS STTEETATQK EQWFGNRWHE GYRQTPREDS

430     440     450     460     470     480
HSTTGTA AAS AHTSHPMQGR TTPSPEDSSW TDFFNPI SHP MGRGHQAGRR MDMDSSHSTT

490     500     510     520     530     540
LQPTANPNTG LVEDLDRTGP LSMTTQQSNS QSFSTSHEGL EEDKDHPTTS TLTSSNRNDV

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550 560 570 580 590 600
 TGGRRDPNHS EGSTTLLEGY TSHYPHTKES RTFIPVTS AK TGSFGVTAVT VGDSNSNVNR
 610 620 630 640 650 660
 SLSGDQDTFH PSGGSHTTHG SESDGHSHGS QEGGANTTSG PIRTPQIPEW LIILASLLAL
 670 680 690 700 710 720
 ALILAVCIAV NSRRRCGQKK KLVINSNGA VEDRKPSGLN GEASKSQEMV HLVNKESSET
 730 740
 PDQFMTADET RNLQNVD MKI GV

[0060] Most preferably, the CD44 antigen assay detects one or more soluble forms of CD44 antigen. CD44 antigen is a single-pass type I membrane protein having a large extracellular domain, most or all of which is present in soluble forms of CD44 antigen generated either through alternative splicing event which deletes all or a portion of the transmembrane domain, or by proteolysis of the membrane-bound form. In the case of an immunoassay, one or more antibodies that bind to epitopes within this extracellular domain may be used to detect these soluble form(s). The following domains have been identified in CD44 antigen:

Residues	Length	Domain ID
1-20	20	signal sequence
21-742	722	CD44 antigen
21-649	629	extracellular
650-670	21	transmembrane
671-742	72	cytoplasmic

In addition, 16 alternative splice forms of CD44 antigen are known. Each is considered a CD44 antigen for purposes of the present invention, and soluble forms of each of these alternative splice forms is considered a soluble CD44 antigen for purposes of the present invention.

[0061] As used herein, the term “Angiopoietin-1” refers to one or more polypeptides present in a biological sample that are derived from the Angiopoietin-1 precursor (Swiss-Prot Q15389 (SEQ ID NO: 2)).

10 20 30 40 50 60
 MTVFLSFAFL AAILTHIGCS NQRRSPENSG RRYNRIQH GQ CAYTFILPEH DGNCRESTTD
 70 80 90 100 110 120
 QYNTNALQRD APHVEPDFSS QKLQHLEHVM ENYTQWLQKL ENYIVENMKS
 EMAQIQQNAV

130 140 150 160 170 180
 QNHTATMLEI GTSLLSQTA E QTRKLT DVET QVLNQTSRLE IQLLENSLST YKLEKQLLQQ
 190 200 210 220 230 240
 TNEILKIH EK NSLLEHKILE MEGKHKEELD TLKEEKENLQ GLVTRQTYII QELEKQLNRA
 250 260 270 280 290 300
 TTNN SVLQKQ QLELMDTVHN LVNLCTKEGV LLKGGKREEE KPFRDCADVY
 QAGFNKSGIY
 310 320 330 340 350 360
 TIYINN MPEP KKVFCNMDVN GGGWTVIQHR EDGSLDFQRG WKEYKMGFGN
 PSGEYWL GNE
 370 380 390 400 410 420
 FIFAIT SQRQ YMLRIELMDW EGNRAYSQYD RFHIGNEKQN YRLYLKGHTG TAGKQSSLIL
 430 440 450 460 470 480
 HGADFSTKDA DNDNCMCKCA LMLTGGWWFD ACGPSNLNGM FYTAGQNHGK
 LNGIKWHYFK
 490
 GPSYSLRSTT MMIRPLDF

[0062] The following domains have been identified in Angiopoietin-1:

Residues	Length	Domain ID
1-15	15	Signal peptide
16-498	483	Angiopoietin-1

[0063] As used herein, the term “Angiopoietin-1 receptor” refers to one or more polypeptides present in a biological sample that are derived from the Angiopoietin-1 receptor precursor (Swiss-Prot Q02763 (SEQ ID NO: 3)).

10 20 30 40 50 60
 MDSLASLVLC GVSLLSGTV EGAMDLILIN SLPLVSDAET SLTCIASGWR PHEPITIGRD
 70 80 90 100 110 120
 FEALMNQH QD PLEV TQDVTR EWAKKV VVWKR EKASKINGAY FCEGRVRGEA
 IRI RTMKMRQ
 130 140 150 160 170 180
 QASFLPATLT MTVDKGD NVN ISFKKVL IKE EDAVIYKNGS FIHSVPRHEV PDILEVHLPH
 190 200 210 220 230 240
 AQPQDAGVYS ARYIGGNLFT SAFTRLIVRR CEAQKWGPEC NHLCTACMNN
 GVCHEDTGEC
 250 260 270 280 290 300
 ICPPGFMGRT CEKACELHTF GRTCKERCSG QEGCKSYVFC LPDPYGCSCA TGWKGLQCNE
 310 320 330 340 350 360

ACHPGFYGPD CKLRCSNNG EMCDFQGC L CSPGWQGLQC EREGIPRMTP KIVDLPDHIE

370 380 390 400 410 420
VNSGKFNPIC KASGWPLPTN EEMTLVKPDG TVLHPKDFNH TDHFSVAIFT IHRILPPDSG

430 440 450 460 470 480
VWVCSVNTVA GMVEKPFNIS VKVLPKPLNA PNVIDTGHNF AVINISSEPY FGDGPIKSKK

490 500 510 520 530 540
LLYKPVNHYE AWQHIQVTNE IVTLNYLEPR TEYELCVQLV RRGEKGEGHP GPVRRFTTAS

550 560 570 580 590 600
IGLPPRGLN LLPKSQTTLN LTWQPIFPSS EDDFYVEVER RSVQKSDQQN IKVPGNLTSV

610 620 630 640 650 660
LLNNLHPREQ YVVRARVNTK AQGEWSEDLT AWTLSDILPP QPENIKISNI THSSAVISWT

670 680 690 700 710 720
ILDGYSSISI TIRYKVQGN EDQHVDVKIK NATIIQYQLK GLEPETAYQV DIFAENNIGS

730 740 750 760 770 780
SNPAFSHEL V TLPESQAPAD LGGKMLLIA ILGSAGMTCL TVLLAFLIIL QLKRANVQRR

790 800 810 820 830 840
MAQAFQNVRE EPAVQFNSGT LALNRKVKN PDPTIYPVLD WNDIKFQDVI
GEGNFGQVLK

850 860 870 880 890 900
ARIKKDGLRM DAAIKRMKEY ASKDDHRDFA GELEVLCKLG HHPNIINLLG
ACEHRGYLYL

910 920 930 940 950 960
AIEYAPHGNL LDFLRKSRVL ETDPAFAIAN STASTLSSQQ LLHFAADVAR GMDYLSQKQF

970 980 990 1000 1010 1020
IHRDLAARNI LVGENYVAKI ADFGLSRGQE VYVKKTMGRL PVRWMAIESL
NYSVYTTNSD

1030 1040 1050 1060 1070 1080
VWSYGVLLWE IVSLGGTPYC GMTCAELYEK LPQGYRLEKP LNCDDDEVYDL
MRQCWREKPY

1090 1100 1110 1120
ERPSFAQILV SLNRMLEERK TYVNTTLYEK FTYAGIDCSA EEAA

[0064] Most preferably, the Angiopoietin-1 receptor assay detects one or more soluble forms of Angiopoietin-1 receptor. Angiopoietin-1 receptor is a single-pass type I membrane protein having a large extracellular domain, most or all of which is present in soluble forms of Angiopoietin-1 receptor generated either through alternative splicing event which deletes all or a portion of the transmembrane domain, or by proteolysis of the membrane-bound form. In the case of an immunoassay, one or more antibodies that bind to epitopes within this extracellular domain may be used to detect these soluble form(s). The following domains have been identified in Angiopoietin-1 receptor:

Residues	Length	Domain ID
1-22	22	signal sequence
23-1124	1102	Angiopoietin-1 receptor
23-745	723	extracellular
746-770	25	transmembrane
771-1124	354	cytoplasmic

[0065] As used herein, the term “C-X-C motif chemokine 5” refers to one or more polypeptides present in a biological sample that are derived from the C-X-C motif chemokine 5 precursor (Swiss-Prot P42830 (SEQ ID NO: 4)).

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      10      20      30      40      50      60
MSLLSSRAAR VPGPSSSLCA LLVLLLLLTQ PGPIASAGPA AAVLRELRCV CLQTTQGVHP

      70      80      90     100     110
KMISNLQVFA IGPQCSKVEV VASLKGKEI CLDPEAPFLK KVIQKILDGG NKEN

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[0066] The following domains have been identified in C-X-C motif chemokine 5:

Residues	Length	Domain ID
1-36	36	Signal peptide
37-114	78	C-X-C motif chemokine 5

In addition, cleaved forms representing residues 44-114 and 45-114 are produced by proteolytic cleavage after secretion from peripheral blood monocytes.

[0067] As used herein, the term “Endoglin” refers to one or more polypeptides present in a biological sample that are derived from the Endoglin precursor (Swiss-Prot P17813 (SEQ ID NO: 5)).

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      10      20      30      40      50      60
MDRGTLP LAV ALLASCSLS PTSLAETVHC DLQVGP ERG EVTYTTSQVS KGCVAQAPNA

      70      80      90     100     110     120
ILEVHVL FLE FPTGPSQLEL TLQASKQNGT WPREVLLVLS VNSSVFLHLQ ALGIPLHLAY

     130     140     150     160     170     180
NSSLVTFQEP PGVNTTELPS FPKTQILEWA AERGPITSAA ELNDPQSILL RLGQAQGSLS

     190     200     210     220     230     240
FCMLEASQDM GRTLEWRPRT PALVRGCHLE GVAGHKEAHI LRVLPGHSAG
PRTVTVKVEL

     250     260     270     280     290     300
SCAPGDLD AV LILQGPPYVS WLIDANHNMQ IWT TGEYSFK IFPEKNIRGF KLPDTPQGLL

     310     320     330     340     350     360

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GEARMLNASI VASFVELPLA SIVSLHASSC GGRLQTSPAP IQTTPPKDTC SPELLMSLIQ

370 380 390 400 410 420
TKCADDAMTL VLKKELVAHL KCTITGLTFW DPSCEAEDRG DKFVLSAYS
SCGMQVSASM

430 440 450 460 470 480
ISNEAVVNIL SSSSPQRKKV HCLNMDLSLF QLGLYLSPHF LQASNTIEPG QQSFFVQVRVS

490 500 510 520 530 540
PSVSEFLQL DCHLDLGPE GGTVELIQGR AAKGNVCVSL SPSPEGDPFR SFLHFYTVF

550 560 570 580 590 600
IPKTGTLST VALRPKTGSQ DQEVHRTVFM RLNIISPDLS GCTSKGLVLP AVLGITFGAF

610 620 630 640 650
LIGALLTAAL WYIYSHTRSP SKREPVVAVA APASSESSST NHSIGSTQST PCSTSSMA

[0068] Most preferably, the Endoglin assay detects one or more soluble forms of Endoglin. Endoglin is a single-pass type I membrane protein having a large extracellular domain, most or all of which is present in soluble forms of Endoglin generated either through alternative splicing event which deletes all or a portion of the transmembrane domain, or by proteolysis of the membrane-bound form. In the case of an immunoassay, one or more antibodies that bind to epitopes within this extracellular domain may be used to detect these soluble form(s). The following domains have been identified in Endoglin:

Residues	Length	Domain ID
1-25	25	signal sequence
26-658	633	Endoglin
26-586	561	extracellular
587-611	25	transmembrane
612-658	47	cytoplasmic

[0069] As used herein, the term “Tumor-associated calcium signal transducer 1” refers to one or more polypeptides present in a biological sample that are derived from the Tumor-associated calcium signal transducer 1 precursor (Swiss-Prot P16422 (SEQ ID NO: 6)).

10 20 30 40 50 60
MAPPQVLAFG LLLAAATATF AAAQEECVCE NYKLAVNCFV NNNRQCQCTS
VGAQNTVICS

70 80 90 100 110 120
KLAACKLVKM AEMNGSKLGR RAKPEGALQN NDGLYDPDCD ESGLFKAKQC
NGTSMCWCVN

130 140 150 160 170 180
 TAGVRRTDKD TEITCSERV TYWIIIEELKH KAREKPYDSK SLRTALQKEI TTRYQLDPKF
 190 200 210 220 230 240
 ITSILYENNV ITIDLQNSS QKTQNDVDIA DVAYYFEKDV KGESLFHSSK MDLTVNGEQL
 250 260 270 280 290 300
 DLDPGQTLII YVDEKAPEFS MQGLKAGVIA VIVVVVIAVV AGIVVLVISR KKRMAKYEKA
 310
 EIKEMGEMHR ELNA

[0070] Most preferably, the Tumor-associated calcium signal transducer 1 assay detects one or more soluble forms of Tumor-associated calcium signal transducer 1. Tumor-associated calcium signal transducer 1 is a single-pass type I membrane protein having a large extracellular domain, most or all of which is present in soluble forms of Tumor-associated calcium signal transducer 1 generated either through alternative splicing event which deletes all or a portion of the transmembrane domain, or by proteolysis of the membrane-bound form. In the case of an immunoassay, one or more antibodies that bind to epitopes within this extracellular domain may be used to detect these soluble form(s). The following domains have been identified in Tumor-associated calcium signal transducer 1:

Residues	Length	Domain ID
1-23	23	signal sequence
24-314	291	Tumor-associated calcium signal transducer 1
24-265	242	extracellular
266-288	23	transmembrane
289-314	26	cytoplasmic

[0071] As used herein, the term “Erythropoietin” refers to one or more polypeptides present in a biological sample that are derived from the Erythropoietin precursor (Swiss-Prot P01588 (SEQ ID NO: 7)).

10 20 30 40 50 60
 MGVHECPAWL WLLLSLLSLP LGLPVLGAPP RLICDSRVLE RYLLEAKEAE NITTGCAEHC
 70 80 90 100 110 120
 SLNENITVPD TKVNFYAWKR MEVGQQAVEV WQGLALLSEA VLRGQALLVN
 SSQPWEPLQL
 130 140 150 160 170 180
 HVDKAVSGLR SLTTLRLALG AQKEAISPPD AASAAPLRTI TADTFRKLFR VYSNFLRGKL
 190
 KLYTGEACRT GDR

[0072] The following domains have been identified in Erythropoietin:

Residues	Length	Domain ID
1-27	27	Signal peptide
28-193	166	Erythropoietin
190-193	4	Propeptide
193-193	1	Propeptide

[0073] As used herein, the term “fractalkine” refers to one or more polypeptides present in a biological sample that are derived from the fractalkine precursor (Swiss-Prot P78423 (SEQ ID NO: 8)).

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      10      20      30      40      50      60
MAPISLSWLL RLATFCHLTV LLAGQHGGVT KCNITCSKMT SKIPVALLIH YQQNQASCGK

      70      80      90     100     110     120
RAIILETRQH RLFCADPKEQ WVKDAMQHLD RQAAALTRNG GTFEKQIGEV
KPRTPPAAGG

     130     140     150     160     170     180
MDESVVLEPE ATGESSLEP TPSSQEAQRA LGTSPELPTG VTGSSGTRL PTPKAQDGGP

     190     200     210     220     230     240
VGTELF RVPP VSTAATWQSS APHQGPSLW AEAKTSEAPS TQDPSTQAST ASSPAPEENA

     250     260     270     280     290     300
PSEGQRVWGQ GQSPRPENSL EREEMGPVPA HTDAFQDWGP GSMAHVSVVP
VSSEGTPSRE

     310     320     330     340     350     360
PVASGSWTPK AEEPIHATMD PQRLGVLITP VPDAQAATR QAVGLLAFLG LLFCLGVAMF

     370     380     390
TYQSLQGCPR KMAGEMA EGL RYIPRSCGSN SYVLVPV

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[0074] Most preferably, the fractalkine assay detects one or more soluble forms of fractalkine. Fractalkine is a single-pass type I membrane protein having a large extracellular domain, most or all of which is present in soluble forms of fractalkine generated either through alternative splicing event which deletes all or a portion of the transmembrane domain, or by proteolysis of the membrane-bound form. In the case of an immunoassay, one or more antibodies that bind to epitopes within this

extracellular domain may be used to detect these soluble form(s). The following domains have been identified in fractalkine:

Residues	Length	Domain ID
1-24	24	signal sequence
25-397	373	fractalkine
25-341	317	extracellular
342-362	21	transmembrane
363-397	35	cytoplasmic

[0075] As used herein, the term “Heme oxygenase 1” refers to one or more polypeptides present in a biological sample that are derived from the Heme oxygenase 1 precursor (Swiss-Prot P09601 (SEQ ID NO: 9)).

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      10      20      30      40      50      60
MERPQPDSMP QDLSEALKEA TKEVHTQAEN AEFMRNFQKG QVTRDGFKLV
MASLYHIYVA

      70      80      90     100     110     120
LEEEIERNKE SPVFAPVYFP EELHRKAALE QDLAFWYGPR WQEVIPYTPA MQRYVKRLHE

      130     140     150     160     170     180
VGRTEPELLV AHAYTRYLGD LSGGQVLKKI AQKALDLPSS GEGLAFFTFP NIASATKFKQ

      190     200     210     220     230     240
LYSRMNSLE MTPAVRQRVI EEAKTAFLN IQLFEELQEL LTHDTKDQSP SRAPGLRQRA

      250     260     270     280
SNKVQDSAPV ETPRGKPLN TRSQAPLLRW VLTLSFLVAT VAVGLYAM

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[0076] The following domains have been identified in Heme oxygenase 1:

Residues	Length	Domain ID
1-288	288	Heme oxygenase 1
25	1	heme axial ligand

[0077] As used herein, the term “interleukin-1 receptor type II” refers to one or more polypeptides present in a biological sample that are derived from the interleukin-1 receptor type II precursor (Swiss-Prot P27930 (SEQ ID NO: 10)).

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      10      20      30      40      50      60
MLRLYVLVMG VSAFTLQPAA HTGAARSCRF RGRHYKREFR LEGEPVALRC
PQVPYWLWAS

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70 80 90 100 110 120
 VSPRINLTWH KNDSARTVPG EEETRMWAQD GALWLLPALQ EDSGTYVCTT
 RNASYCDKMS
 130 140 150 160 170 180
 IELRVFENTD AFLPFISYPQ ILTLSTSGVL VCPDLSEFTR DKTDVKIQWY KDSLLLDKDN
 190 200 210 220 230 240
 EKFLSVRGTT HLLVHDVALE DAGYYRCVLT FAHEGQQYNI TRSIELRIKK KKEETIPVII
 250 260 270 280 290 300
 SPLKTISASL GSRLTIPCKV FLGTGTPLTT MLWWTANDTH IESAYPGGRV TEGPRQEYSE
 310 320 330 340 350 360
 NNENYIEVPL IFDPVTREDL HMDFKCVVHN TLSFQTLRTT VKEASSTFSW GIVLAPLSLA
 370 380 390
 FLVLGGIWMH RRCKHRTGKA DGLTVLWPHH QDFQSYPK

[0078] Most preferably, the interleukin-1 receptor type II assay detects one or more soluble forms of interleukin-1 receptor type II. Interleukin-1 receptor type II is a single-pass type I membrane protein having a large extracellular domain, most or all of which is present in soluble forms of interleukin-1 receptor type II generated either through alternative splicing event which deletes all or a portion of the transmembrane domain, or by proteolysis of the membrane-bound form. In the case of an immunoassay, one or more antibodies that bind to epitopes within this extracellular domain may be used to detect these soluble form(s). The following domains have been identified in interleukin-1 receptor type II:

Residues	Length	Domain ID
1-13	13	signal sequence
14-398	385	interleukin-1 receptor type II
14-343	330	extracellular
344-369	26	transmembrane
370-398	29	cytoplasmic

[0079] As used herein, the term “Interleukin-6 receptor subunit alpha” refers to one or more polypeptides present in a biological sample that are derived from the Interleukin-6 receptor subunit alpha precursor (Swiss-Prot P08887 (SEQ ID NO: 11)).

10 20 30 40 50 60

MLAVGCALLA ALLAAPGAAL APRRCPAQEV ARGVLTSLPG DSVTLTTCPGV
EPEDNATVHW

70 80 90 100 110 120
VLRKPAAGSH PSRWAGMGRR LLLRSVQLHD SGNYSYRAG RPAGTVHLLV
DVPPEEPQLS

130 140 150 160 170 180
CFRKSPLSNV VCEWGRSTP SLTTKAVLLV RKFQNSPAED FQEPCQYSQE SQKFSCQLAV

190 200 210 220 230 240
PEGDSSFYIV SMCVASSVGS KFSKTQTFQG CGILQPDPPA NITVTAVARN PRWLSVTWQD

250 260 270 280 290 300
PHSWNSSFYR LRFELRYRAE RSKTFTTWMV KDLQHHCVIH DAWSGLRHVV
QLRAQEEFGQ

310 320 330 340 350 360
GEWSEWSPEA MGTPWTESRS PPAENEVSTP MQALTTNKDD DNILFRDSAN ATSLPVQDSS

370 380 390 400 410 420
SVPLPTFLVA GGSLAFGTLL CIAIVLRFKK TWKLRLALKEG KTSMHPPYSL GQLVPERPRP

430 440 450 460
TPVLVPLISP PVSPSSLGSD NTSSSHNRPDA RDPRSPYDIS NTDYFFPR

[0080] Most preferably, the Interleukin-6 receptor subunit alpha assay detects one or more soluble forms of Interleukin-6 receptor subunit alpha. Interleukin-6 receptor subunit alpha is a single-pass type I membrane protein having a large extracellular domain, most or all of which is present in soluble forms of Interleukin-6 receptor subunit alpha generated either through alternative splicing event which deletes all or a portion of the transmembrane domain, or by proteolysis of the membrane-bound form. In the case of an immunoassay, one or more antibodies that bind to epitopes within this extracellular domain may be used to detect these soluble form(s). The following domains have been identified in Interleukin-6 receptor subunit alpha:

Residues	Length	Domain ID
1-19	19	signal sequence
20-468	449	Interleukin-6 receptor subunit alpha
20-365	346	extracellular
366-386	21	transmembrane
387-468	82	cytoplasmic

[0081] As used herein, the term "Lymphotactin" refers to one or more polypeptides present in a biological sample that are derived from the Lymphotactin precursor (Swiss-Prot P47992 (SEQ ID NO: 12)).

10 20 30 40 50 60
 MRLLILALLG ICSLTAYIVE GVGSEVSDKR TCVSLTTQRL PVSRIKTYTI TEGSLRAVIF
 70 80 90 100 110
 ITKRGLKVCA DPQATWVRDV VRSMDRKSNT RNNMIQTKPT GTQQSTNTAV TLTG

[0082] The following domains have been identified in Lymphotactin:

Residues	Length	Domain ID
1-21	21	Signal peptide
22-114	93	Lymphotactin

[0083] As used herein, the term “Lymphotoxin-alpha” refers to one or more polypeptides present in a biological sample that are derived from the Lymphotoxin-alpha precursor (Swiss-Prot P01374 (SEQ ID NO: 13)).

10 20 30 40 50 60
 MTPPERLFLP RVCGTTLHLL LLGLLLVLPP GAQGLPGVGL TPSAAQTARQ HPKMHLAHST
 70 80 90 100 110 120
 LKPAAHLIGD PSKQNSLLWR ANTDR AFLQD GFSLSNNSLL VPTSGIYFVY SQVVFSGKAY
 130 140 150 160 170 180
 SPKATSSPLY LAHEVQLFSS QYPFHVPLLS SQKMVYPGLQ EPWLHSMYHG AAFQLTQGDQ
 190 200
 LSTHTDGIPH LVLSPSTVFF GAFAL

[0084] The following domains have been identified in Lymphotoxin-alpha:

Residues	Length	Domain ID
1-34	34	Signal peptide
35-205	171	Lymphotoxin-alpha

[0085] As used herein, the term “Stromelysin-1” refers to one or more polypeptides present in a biological sample that are derived from the Stromelysin-1 precursor (Swiss-Prot P08254 (SEQ ID NO: 14)).

10 20 30 40 50 60
 MKSLPILLLL CVAVCSAYPL DGAARGEDTS MNLVQKYLEN YYDLKKDVKQ
 FVRRKDSGPV
 70 80 90 100 110 120
 VKKIREMQKF LGLEVTGKLD SDTLEV MRKP RCGVPDVGHF RTFPGIPKWR KTHLT YRIVN
 130 140 150 160 170 180
 YTPDLPKDAV DSAVEKALKV WEEVTPLTFS RLYEGEADIM ISFAVREHGD FYPFDGPGNV

190 200 210 220 230 240
 LAHAYAPGPG INGDAHFDDE EQWTKD'TTGT NLFLVAAHEI GHSLGLFHSA
 NTEALMYPLY
 250 260 270 280 290 300
 HSLTDLTRFR LSQDDINGIQ SLYGPPPDSP ETPLVPTEPV PPEPGTPANC DPALSFDAVS
 310 320 330 340 350 360
 TLRGEILIFK DRHFWRKSLR KLEPELHLIS SFWPSLPSGV DAAEYVTSKD LVFIFKGNQF
 370 380 390 400 410 420
 WAIRGNEVRA GYPRGIHTLG FPPTVRKIDA AISDKEKNKT YFFVEDKYWR FDEKRNSMEP
 430 440 450 460 470
 GFPKQIAEDF PGIDSKIDAV FEEFGFFYFF TGSSQLEFDP NAKKVTHITLK SNSWLNC

[0086] The following domains have been identified in Stromelysin-1:

Residues	Length	Domain ID
1-17	17	signal sequence
18-99	82	propeptide
100-477	378	Stromelysin-1

[0087] As used herein, the term "C-C motif chemokine 22" refers to one or more polypeptides present in a biological sample that are derived from the C-C motif chemokine 22 precursor (Swiss-Prot O00626 (SEQ ID NO: 15)).

10 20 30 40 50 60
 MARLQTALLV VLVLLAVALQ ATEAGPYGAN MEDSVCCRDY VRYRLPLRVV
 KHFYWTSDSC
 70 80 90
 PRPGVLLTF RDKEICADPR VPWVKMILNK LSQ

[0088] The following domains have been identified in C-C motif chemokine 22:

Residues	Length	Domain ID
1-24	24	Signal peptide
25-93	69	C-C motif chemokine 22

[0089] As used herein, the term "C-C motif chemokine 5" refers to one or more polypeptides present in a biological sample that are derived from the C-C motif chemokine 5 precursor (Swiss-Prot P13501 (SEQ ID NO: 16)).

10 20 30 40 50 60
 MKVSAAALAV ILIATALCAP ASAPYSSDT TPCCFAYIAR PLPRAHIKEY FYTSGKCSNP

70 80 90
 AVVVFVTRKNR QVCANPEKKW VREYINSLEM S

[0090] The following domains have been identified in C-C motif chemokine 5:

Residues	Length	Domain ID
1-23	23	Signal peptide
24-91	68	C-C motif chemokine 5

[0091] In addition, forms representing residues 26-91 and 27-91 are reportedly formed by posttranslational cleavage of C-C motif chemokine 5.

[0092] As used herein, the term "Thrombospondin-1" refers to one or more polypeptides present in a biological sample that are derived from the Thrombospondin-1 precursor (Swiss-Prot P07996 (SEQ ID NO: 17)).

10 20 30 40 50 60
 MGLAWGLGVL FLMHVCGTNR IPESGGDNSV FDIFELTGAA RKGSGRRLVK GPDPSSPAFR

70 80 90 100 110 120
 IEDANLIPPV PDDKFQDLVD AVRAEKGFL L ASLRQM KKT RGTLLALERK DHSGQVFSV

130 140 150 160 170 180
 SNGKAGTLDL SLTVQGKQHV VSVEEALLAT GQWKSITLFV QEDRAQLYID
 CEKMENAELD

190 200 210 220 230 240
 VPIQSVFTRD LASIARLRIA KGGVNDNFQG VLQNVRFVFG TTPEDILRNK GCSSSTSVLL

250 260 270 280 290 300
 TLDNNVVNGS SPAIRTNYIG HKTKDLQAIC GISDELSSM VLELRGLRTI VTTLQDSIRK

310 320 330 340 350 360
 VTEENKELAN ELRRPPLCYH NGVQYRNNEE WTVDSCTECH CQNSVTICKK VSCPIMPCCSN

370 380 390 400 410 420
 ATVPDGECCP RCWPSDSADD GWSPWSEWTS CSTSCGNGIQ QRGRSCDSL N
 NRCEGSSVQT

430 440 450 460 470 480
 RTCHIQECDK RFKQDGGWSH WSPWSSCSVT CGDGVITRIR LCNSPSPQMN GKPCEGEARE

490 500 510 520 530 540
 TKACKKDACP INGGWGPWSP WDICSVTCCG GVQKRSRLCN NPTPQFGGKD
 CVGDVTENQI

550 560 570 580 590 600
 CNKQDCPIDG CLSNPCFAGV KCTSYPDGSW KCGACPPGYS GNGIQCTDVD ECKEVPDACF

610 620 630 640 650 660

NHNGEHRCEIN TDPGYNCLPC PPRFTGSQPF GQGVEHATAN KQVCKPRNPC
TDGTHDCNKN

670 680 690 700 710 720
AKCNYLGHYS DPMYRCECKP GYAGNGHICG EDTDLDGWPN ENLVCVANAT
YHCKKDNCNP

730 740 750 760 770 780
LPNSGQEDYD KDGIGDACDD DDDNDKIPDD RDNCPFHYNP AQYDYDRDDV
GDRCDNCPYN

790 800 810 820 830 840
HNPDAQADTDN NGEGDACAAD IDGDGILNER DNCQYVYNVD QRDTMDMGVG
DQCDNCPLEH

850 860 870 880 890 900
NPDQLSDSD RIGDTCNNDQ DDEDGHQNN LDNCPYVPNA NQADHDKDGK
GDACDHDDDN

910 920 930 940 950 960
DGIPDDKDNC RLVNPDQKD SDGDGRGDAC KDDFDHDSVP DIDDICPENV DISETDFRRF

970 980 990 1000 1010 1020
QMIPLDPKGT SQNDPNWVVR HQGKELVQTV NCDPGLAVGY DEFNAVDFSG
TFFINTERDD

1030 1040 1050 1060 1070 1080
DYAGFVFGYQ SSSRFYVVMW KQVTQSYWDT NPTRAQGYSG LSVKVVNSTT
GPGEHLRNAL

1090 1100 1110 1120 1130 1140
WHTGNTPGQV RTLWHDPRHI GWKDFTAYRW RLSHRPKTGF IRVVMYEGKK
IMADSGPIYD

1150 1160 1170
KTYAGGRLGL FVFSQEMVFF SDLKYECRDP

[0093] The following domains have been identified in Thrombospondin-1:

Residues	Length	Domain ID
1-18	18	Signal peptide
19-1170	1152	Thrombospondin-1
24-221	198	TSP N-terminal
316-373	58	VWFC

[0094] As used herein, the term “relating a signal to the presence or amount” of an analyte reflects this understanding. Assay signals are typically related to the presence or amount of an analyte through the use of a standard curve calculated using known concentrations of the analyte of interest. As the term is used herein, an assay is “configured to detect” an analyte if an assay can generate a

detectable signal indicative of the presence or amount of a physiologically relevant concentration of the analyte. Because an antibody epitope is on the order of 8 amino acids, an immunoassay configured to detect a marker of interest will also detect polypeptides related to the marker sequence, so long as those polypeptides contain the epitope(s) necessary to bind to the antibody or antibodies used in the assay. The term “related marker” as used herein with regard to a biomarker such as one of the kidney injury markers described herein refers to one or more fragments, variants, etc., of a particular marker or its biosynthetic parent that may be detected as a surrogate for the marker itself or as independent biomarkers. The term also refers to one or more polypeptides present in a biological sample that are derived from the biomarker precursor complexed to additional species, such as binding proteins, receptors, heparin, lipids, sugars, *etc.*

[0095] The term “positive going” marker as that term is used herein refer to a marker that is determined to be elevated in subjects suffering from a disease or condition, relative to subjects not suffering from that disease or condition. The term “negative going” marker as that term is used herein refer to a marker that is determined to be reduced in subjects suffering from a disease or condition, relative to subjects not suffering from that disease or condition.

[0096] The term “subject” as used herein refers to a human or non-human organism. Thus, the methods and compositions described herein are applicable to both human and veterinary disease. Further, while a subject is preferably a living organism, the invention described herein may be used in post-mortem analysis as well. Preferred subjects are humans, and most preferably “patients,” which as used herein refers to living humans that are receiving medical care for a disease or condition. This includes persons with no defined illness who are being investigated for signs of pathology.

[0097] Preferably, an analyte is measured in a sample. Such a sample may be obtained from a subject, or may be obtained from biological materials intended to be provided to the subject. For example, a sample may be obtained from a kidney being evaluated for possible transplantation into a subject, and an analyte measurement used to evaluate the kidney for preexisting damage. Preferred samples are body fluid samples.

[0098] The term “body fluid sample” as used herein refers to a sample of bodily fluid obtained for the purpose of diagnosis, prognosis, classification or evaluation of a subject of interest, such as a patient or transplant donor. In certain embodiments, such a sample may be obtained for the purpose of determining the outcome of an ongoing condition or the effect of a treatment regimen on a condition. Preferred body fluid samples include blood, serum, plasma, cerebrospinal fluid, urine, saliva, sputum, and pleural effusions. In addition, one of skill in the art would realize that certain body fluid samples would be more readily analyzed following a fractionation or purification procedure, for example, separation of whole blood into serum or plasma components.

[0099] The term “diagnosis” as used herein refers to methods by which the skilled artisan can estimate and/or determine the probability (“a likelihood”) of whether or not a patient is suffering from

a given disease or condition. In the case of the present invention, “diagnosis” includes using the results of an assay, most preferably an immunoassay, for a kidney injury marker of the present invention, optionally together with other clinical characteristics, to arrive at a diagnosis (that is, the occurrence or nonoccurrence) of an acute renal injury or ARF for the subject from which a sample was obtained and assayed. That such a diagnosis is “determined” is not meant to imply that the diagnosis is 100% accurate. Many biomarkers are indicative of multiple conditions. The skilled clinician does not use biomarker results in an informational vacuum, but rather test results are used together with other clinical indicia to arrive at a diagnosis. Thus, a measured biomarker level on one side of a predetermined diagnostic threshold indicates a greater likelihood of the occurrence of disease in the subject relative to a measured level on the other side of the predetermined diagnostic threshold.

[00100] Similarly, a prognostic risk signals a probability (“a likelihood”) that a given course or outcome will occur. A level or a change in level of a prognostic indicator, which in turn is associated with an increased probability of morbidity (e.g., worsening renal function, future ARF, or death) is referred to as being “indicative of an increased likelihood” of an adverse outcome in a patient.

[00101] Marker Assays

[00102] In general, immunoassays involve contacting a sample containing or suspected of containing a biomarker of interest with at least one antibody that specifically binds to the biomarker. A signal is then generated indicative of the presence or amount of complexes formed by the binding of polypeptides in the sample to the antibody. The signal is then related to the presence or amount of the biomarker in the sample. Numerous methods and devices are well known to the skilled artisan for the detection and analysis of biomarkers. *See, e.g.*, U.S. Patents 6,143,576; 6,113,855; 6,019,944; 5,985,579; 5,947,124; 5,939,272; 5,922,615; 5,885,527; 5,851,776; 5,824,799; 5,679,526; 5,525,524; and 5,480,792, and *The Immunoassay Handbook*, David Wild, ed. Stockton Press, New York, 1994, each of which is hereby incorporated by reference in its entirety, including all tables, figures and claims.

[00103] The assay devices and methods known in the art can utilize labeled molecules in various sandwich, competitive, or non-competitive assay formats, to generate a signal that is related to the presence or amount of the biomarker of interest. Suitable assay formats also include chromatographic, mass spectrographic, and protein “blotting” methods. Additionally, certain methods and devices, such as biosensors and optical immunoassays, may be employed to determine the presence or amount of analytes without the need for a labeled molecule. *See, e.g.*, U.S. Patents 5,631,171; and 5,955,377, each of which is hereby incorporated by reference in its entirety, including all tables, figures and claims. One skilled in the art also recognizes that robotic instrumentation including but not limited to Beckman ACCESS®, Abbott AXSYM®, Roche ELECSYS®, Dade Behring STRATUS® systems are among the immunoassay analyzers that are capable of performing immunoassays. But any suitable

immunoassay may be utilized, for example, enzyme-linked immunoassays (ELISA), radioimmunoassays (RIAs), competitive binding assays, and the like.

[00104] Antibodies or other polypeptides may be immobilized onto a variety of solid supports for use in assays. Solid phases that may be used to immobilize specific binding members include those developed and/or used as solid phases in solid phase binding assays. Examples of suitable solid phases include membrane filters, cellulose-based papers, beads (including polymeric, latex and paramagnetic particles), glass, silicon wafers, microparticles, nanoparticles, TentaGels, AgroGels, PEGA gels, SPOCC gels, and multiple-well plates. An assay strip could be prepared by coating the antibody or a plurality of antibodies in an array on solid support. This strip could then be dipped into the test sample and then processed quickly through washes and detection steps to generate a measurable signal, such as a colored spot. Antibodies or other polypeptides may be bound to specific zones of assay devices either by conjugating directly to an assay device surface, or by indirect binding. In an example of the latter case, antibodies or other polypeptides may be immobilized on particles or other solid supports, and that solid support immobilized to the device surface.

[00105] Biological assays require methods for detection, and one of the most common methods for quantitation of results is to conjugate a detectable label to a protein or nucleic acid that has affinity for one of the components in the biological system being studied. Detectable labels may include molecules that are themselves detectable (*e.g.*, fluorescent moieties, electrochemical labels, metal chelates, *etc.*) as well as molecules that may be indirectly detected by production of a detectable reaction product (*e.g.*, enzymes such as horseradish peroxidase, alkaline phosphatase, *etc.*) or by a specific binding molecule which itself may be detectable (*e.g.*, biotin, digoxigenin, maltose, oligohistidine, 2,4-dinitrobenzene, phenylarsenate, ssDNA, dsDNA, *etc.*).

[00106] Preparation of solid phases and detectable label conjugates often comprise the use of chemical cross-linkers. Cross-linking reagents contain at least two reactive groups, and are divided generally into homofunctional cross-linkers (containing identical reactive groups) and heterofunctional cross-linkers (containing non-identical reactive groups). Homobifunctional cross-linkers that couple through amines, sulfhydryls or react non-specifically are available from many commercial sources. Maleimides, alkyl and aryl halides, alpha-haloacyls and pyridyl disulfides are thiol reactive groups. Maleimides, alkyl and aryl halides, and alpha-haloacyls react with sulfhydryls to form thiol ether bonds, while pyridyl disulfides react with sulfhydryls to produce mixed disulfides. The pyridyl disulfide product is cleavable. Imidoesters are also very useful for protein-protein cross-links. A variety of heterobifunctional cross-linkers, each combining different attributes for successful conjugation, are commercially available.

[00107] In certain aspects, the present invention provides kits for the analysis of the described kidney injury markers. The kit comprises reagents for the analysis of at least one test sample which comprise at least one antibody that a kidney injury marker. The kit can also include devices and

instructions for performing one or more of the diagnostic and/or prognostic correlations described herein. Preferred kits will comprise an antibody pair for performing a sandwich assay, or a labeled species for performing a competitive assay, for the analyte. Preferably, an antibody pair comprises a first antibody conjugated to a solid phase and a second antibody conjugated to a detectable label, wherein each of the first and second antibodies that bind a kidney injury marker. Most preferably each of the antibodies are monoclonal antibodies. The instructions for use of the kit and performing the correlations can be in the form of labeling, which refers to any written or recorded material that is attached to, or otherwise accompanies a kit at any time during its manufacture, transport, sale or use. For example, the term labeling encompasses advertising leaflets and brochures, packaging materials, instructions, audio or video cassettes, computer discs, as well as writing imprinted directly on kits.

[00108] Antibodies

[00109] The term “antibody” as used herein refers to a peptide or polypeptide derived from, modeled after or substantially encoded by an immunoglobulin gene or immunoglobulin genes, or fragments thereof, capable of specifically binding an antigen or epitope. *See, e.g.* Fundamental Immunology, 3rd Edition, W.E. Paul, ed., Raven Press, N.Y. (1993); Wilson (1994); J. Immunol. Methods 175:267-273; Yarmush (1992) J. Biochem. Biophys. Methods 25:85-97. The term antibody includes antigen-binding portions, i.e., “antigen binding sites,” (e.g., fragments, subsequences, complementarity determining regions (CDRs)) that retain capacity to bind antigen, including (i) a Fab fragment, a monovalent fragment consisting of the VL, VH, CL and CH1 domains; (ii) a F(ab')₂ fragment, a bivalent fragment comprising two Fab fragments linked by a disulfide bridge at the hinge region; (iii) a Fd fragment consisting of the VH and CH1 domains; (iv) a Fv fragment consisting of the VL and VH domains of a single arm of an antibody, (v) a dAb fragment (Ward et al., (1989) Nature 341:544-546), which consists of a VH domain; and (vi) an isolated complementarity determining region (CDR). Single chain antibodies are also included by reference in the term “antibody.”

[00110] Antibodies used in the immunoassays described herein preferably specifically bind to a kidney injury marker of the present invention. The term “specifically binds” is not intended to indicate that an antibody binds exclusively to its intended target since, as noted above, an antibody binds to any polypeptide displaying the epitope(s) to which the antibody binds. Rather, an antibody “specifically binds” if its affinity for its intended target is about 5-fold greater when compared to its affinity for a non-target molecule which does not display the appropriate epitope(s). Preferably the affinity of the antibody will be at least about 5 fold, preferably 10 fold, more preferably 25-fold, even more preferably 50-fold, and most preferably 100-fold or more, greater for a target molecule than its affinity for a non-target molecule. In preferred embodiments, Preferred antibodies bind with affinities of at least about 10^7 M^{-1} , and preferably between about 10^8 M^{-1} to about 10^9 M^{-1} , about 10^9 M^{-1} to about 10^{10} M^{-1} , or about 10^{10} M^{-1} to about 10^{12} M^{-1} .

[00111] Affinity is calculated as $K_d = k_{off}/k_{on}$ (k_{off} is the dissociation rate constant, K_{on} is the association rate constant and K_d is the equilibrium constant). Affinity can be determined at equilibrium by measuring the fraction bound (r) of labeled ligand at various concentrations (c). The data are graphed using the Scatchard equation: $r/c = K(n-r)$: where r = moles of bound ligand/mole of receptor at equilibrium; c = free ligand concentration at equilibrium; K = equilibrium association constant; and n = number of ligand binding sites per receptor molecule. By graphical analysis, r/c is plotted on the Y-axis versus r on the X-axis, thus producing a Scatchard plot. Antibody affinity measurement by Scatchard analysis is well known in the art. *See, e.g., van Erp et al., J. Immunoassay* 12: 425-43, 1991; Nelson and Griswold, *Comput. Methods Programs Biomed.* 27: 65-8, 1988.

[00112] The term “epitope” refers to an antigenic determinant capable of specific binding to an antibody. Epitopes usually consist of chemically active surface groupings of molecules such as amino acids or sugar side chains and usually have specific three dimensional structural characteristics, as well as specific charge characteristics. Conformational and nonconformational epitopes are distinguished in that the binding to the former but not the latter is lost in the presence of denaturing solvents.

[00113] Numerous publications discuss the use of phage display technology to produce and screen libraries of polypeptides for binding to a selected analyte. *See, e.g., Cwirla et al., Proc. Natl. Acad. Sci. USA* 87, 6378-82, 1990; Devlin *et al.*, *Science* 249, 404-6, 1990, Scott and Smith, *Science* 249, 386-88, 1990; and Ladner *et al.*, U.S. Pat. No. 5,571,698. A basic concept of phage display methods is the establishment of a physical association between DNA encoding a polypeptide to be screened and the polypeptide. This physical association is provided by the phage particle, which displays a polypeptide as part of a capsid enclosing the phage genome which encodes the polypeptide. The establishment of a physical association between polypeptides and their genetic material allows simultaneous mass screening of very large numbers of phage bearing different polypeptides. Phage displaying a polypeptide with affinity to a target bind to the target and these phage are enriched by affinity screening to the target. The identity of polypeptides displayed from these phage can be determined from their respective genomes. Using these methods a polypeptide identified as having a binding affinity for a desired target can then be synthesized in bulk by conventional means. *See, e.g., U.S. Patent No. 6,057,098*, which is hereby incorporated in its entirety, including all tables, figures, and claims.

[00114] The antibodies that are generated by these methods may then be selected by first screening for affinity and specificity with the purified polypeptide of interest and, if required, comparing the results to the affinity and specificity of the antibodies with polypeptides that are desired to be excluded from binding. The screening procedure can involve immobilization of the purified polypeptides in separate wells of microtiter plates. The solution containing a potential antibody or groups of antibodies is then placed into the respective microtiter wells and incubated for

about 30 min to 2 h. The microtiter wells are then washed and a labeled secondary antibody (for example, an anti-mouse antibody conjugated to alkaline phosphatase if the raised antibodies are mouse antibodies) is added to the wells and incubated for about 30 min and then washed. Substrate is added to the wells and a color reaction will appear where antibody to the immobilized polypeptide(s) are present.

[00115] The antibodies so identified may then be further analyzed for affinity and specificity in the assay design selected. In the development of immunoassays for a target protein, the purified target protein acts as a standard with which to judge the sensitivity and specificity of the immunoassay using the antibodies that have been selected. Because the binding affinity of various antibodies may differ; certain antibody pairs (*e.g.*, in sandwich assays) may interfere with one another sterically, *etc.*, assay performance of an antibody may be a more important measure than absolute affinity and specificity of an antibody.

Assay Correlations

[00116] The term “correlating” as used herein in reference to the use of biomarkers refers to comparing the presence or amount of the biomarker(s) in a patient to its presence or amount in persons known to suffer from, or known to be at risk of, a given condition; or in persons known to be free of a given condition. Often, this takes the form of comparing an assay result in the form of a biomarker concentration to a predetermined threshold selected to be indicative of the occurrence or nonoccurrence of a disease or the likelihood of some future outcome.

[00117] Selecting a diagnostic threshold involves, among other things, consideration of the probability of disease, distribution of true and false diagnoses at different test thresholds, and estimates of the consequences of treatment (or a failure to treat) based on the diagnosis. For example, when considering administering a specific therapy which is highly efficacious and has a low level of risk, few tests are needed because clinicians can accept substantial diagnostic uncertainty. On the other hand, in situations where treatment options are less effective and more risky, clinicians often need a higher degree of diagnostic certainty. Thus, cost/benefit analysis is involved in selecting a diagnostic threshold.

[00118] Suitable thresholds may be determined in a variety of ways. For example, one recommended diagnostic threshold for the diagnosis of acute myocardial infarction using cardiac troponin is the 97.5th percentile of the concentration seen in a normal population. Another method may be to look at serial samples from the same patient, where a prior “baseline” result is used to monitor for temporal changes in a biomarker level.

[00119] Population studies may also be used to select a decision threshold. Receiver Operating Characteristic (“ROC”) arose from the field of signal detection theory developed during World War II for the analysis of radar images, and ROC analysis is often used to select a threshold able to best

distinguish a “diseased” subpopulation from a “nondiseased” subpopulation. A false positive in this case occurs when the person tests positive, but actually does not have the disease. A false negative, on the other hand, occurs when the person tests negative, suggesting they are healthy, when they actually do have the disease. To draw a ROC curve, the true positive rate (TPR) and false positive rate (FPR) are determined as the decision threshold is varied continuously. Since TPR is equivalent with sensitivity and FPR is equal to 1 - specificity, the ROC graph is sometimes called the sensitivity vs (1 - specificity) plot. A perfect test will have an area under the ROC curve of 1.0; a random test will have an area of 0.5. A threshold is selected to provide an acceptable level of specificity and sensitivity.

[00120] In this context, “diseased” is meant to refer to a population having one characteristic (the presence of a disease or condition or the occurrence of some outcome) and “nondiseased” is meant to refer to a population lacking the characteristic. While a single decision threshold is the simplest application of such a method, multiple decision thresholds may be used. For example, below a first threshold, the absence of disease may be assigned with relatively high confidence, and above a second threshold the presence of disease may also be assigned with relatively high confidence. Between the two thresholds may be considered indeterminate. This is meant to be exemplary in nature only.

[00121] In addition to threshold comparisons, other methods for correlating assay results to a patient classification (occurrence or nonoccurrence of disease, likelihood of an outcome, *etc.*) include decision trees, rule sets, Bayesian methods, and neural network methods. These methods can produce probability values representing the degree to which a subject belongs to one classification out of a plurality of classifications.

[00122] Measures of test accuracy may be obtained as described in Fischer *et al.*, *Intensive Care Med.* 29: 1043-51, 2003, and used to determine the effectiveness of a given biomarker. These measures include sensitivity and specificity, predictive values, likelihood ratios, diagnostic odds ratios, and ROC curve areas. The area under the curve (“AUC”) of a ROC plot is equal to the probability that a classifier will rank a randomly chosen positive instance higher than a randomly chosen negative one. The area under the ROC curve may be thought of as equivalent to the Mann-Whitney U test, which tests for the median difference between scores obtained in the two groups considered if the groups are of continuous data, or to the Wilcoxon test of ranks.

[00123] As discussed above, suitable tests may exhibit one or more of the following results on these various measures: a specificity of greater than 0.5, preferably at least 0.6, more preferably at least 0.7, still more preferably at least 0.8, even more preferably at least 0.9 and most preferably at least 0.95, with a corresponding sensitivity greater than 0.2, preferably greater than 0.3, more preferably greater than 0.4, still more preferably at least 0.5, even more preferably 0.6, yet more preferably greater than 0.7, still more preferably greater than 0.8, more preferably greater than 0.9, and most preferably greater than 0.95; a sensitivity of greater than 0.5, preferably at least 0.6, more

preferably at least 0.7, still more preferably at least 0.8, even more preferably at least 0.9 and most preferably at least 0.95, with a corresponding specificity greater than 0.2, preferably greater than 0.3, more preferably greater than 0.4, still more preferably at least 0.5, even more preferably 0.6, yet more preferably greater than 0.7, still more preferably greater than 0.8, more preferably greater than 0.9, and most preferably greater than 0.95; at least 75% sensitivity, combined with at least 75% specificity; a ROC curve area of greater than 0.5, preferably at least 0.6, more preferably 0.7, still more preferably at least 0.8, even more preferably at least 0.9, and most preferably at least 0.95; an odds ratio different from 1, preferably at least about 2 or more or about 0.5 or less, more preferably at least about 3 or more or about 0.33 or less, still more preferably at least about 4 or more or about 0.25 or less, even more preferably at least about 5 or more or about 0.2 or less, and most preferably at least about 10 or more or about 0.1 or less; a positive likelihood ratio (calculated as sensitivity/(1-specificity)) of greater than 1, at least 2, more preferably at least 3, still more preferably at least 5, and most preferably at least 10; and or a negative likelihood ratio (calculated as (1-sensitivity)/specificity) of less than 1, less than or equal to 0.5, more preferably less than or equal to 0.3, and most preferably less than or equal to 0.1

[00124] Additional clinical indicia may be combined with the kidney injury marker assay result(s) of the present invention. These include other biomarkers related to renal status. Examples include the following, which recite the common biomarker name, followed by the Swiss-Prot entry number for that biomarker or its parent: Actin (P68133); Adenosine deaminase binding protein (DPP4, P27487); Alpha-1-acid glycoprotein 1 (P02763); Alpha-1-microglobulin (P02760); Albumin (P02768); Angiotensinogenase (Renin, P00797); Annexin A2 (P07355); Beta-glucuronidase (P08236); B-2-microglobulin (P61679); Beta-galactosidase (P16278); BMP-7 (P18075); Brain natriuretic peptide (proBNP, BNP-32, NTproBNP; P16860); Calcium-binding protein Beta (S100-beta, P04271); Carbonic anhydrase (Q16790); Casein Kinase 2 (P68400); Cathepsin B (P07858); Ceruloplasmin (P00450); Clusterin (P10909); Complement C3 (P01024); Cysteine-rich protein (CYR61, O00622); Cytochrome C (P99999); Epidermal growth factor (EGF, P01133); Endothelin-1 (P05305); Exosomal Fetuin-A (P02765); Fatty acid-binding protein, heart (FABP3, P05413); Fatty acid-binding protein, liver (P07148); Ferritin (light chain, P02793; heavy chain P02794); Fructose-1,6-biphosphatase (P09467); GRO-alpha (CXCL1, (P09341); Growth Hormone (P01241); Hepatocyte growth factor (P14210); Insulin-like growth factor I (P01343); Immunoglobulin G; Immunoglobulin Light Chains (Kappa and Lambda); Interferon gamma (P01308); Lysozyme (P61626); Interleukin-1alpha (P01583); Interleukin-2 (P60568); Interleukin-4 (P60568); Interleukin-9 (P15248); Interleukin-12p40 (P29460); Interleukin-13 (P35225); Interleukin-16 (Q14005); L1 cell adhesion molecule (P32004); Lactate dehydrogenase (P00338); Leucine Aminopeptidase (P28838); Meprin A-alpha subunit (Q16819); Meprin A-beta subunit (Q16820); Midkine (P21741); MIP2-alpha (CXCL2, P19875); MMP-2 (P08253); MMP-9 (P14780); Netrin-1 (O95631); Neutral endopeptidase (P08473); Osteopontin (P10451); Renal papillary antigen 1 (RPA1); Renal papillary antigen 2 (RPA2); Retinol binding

protein (P09455); Ribonuclease; S100 calcium-binding protein A6 (P06703); Serum Amyloid P Component (P02743); Sodium/Hydrogen exchanger isoform (NHE3, P48764); Spermidine/spermine N1-acetyltransferase (P21673); TGF-Beta1 (P01137); Transferrin (P02787); Trefoil factor 3 (TFF3, Q07654); Toll-Like protein 4 (O00206); Total protein; Tubulointerstitial nephritis antigen (Q9UJW2); Uromodulin (Tamm-Horsfall protein, P07911).

[00125] For purposes of risk stratification, Adiponectin (Q15848); Alkaline phosphatase (P05186); Aminopeptidase N (P15144); CalbindinD28k (P05937); Cystatin C (P01034); 8 subunit of F1FO ATPase (P03928); Gamma-glutamyltransferase (P19440); GSTa (alpha-glutathione-S-transferase, P08263); GSTpi (Glutathione-S-transferase P; GST class-pi; P09211); IGFBP-1 (P08833); IGFBP-2 (P18065); IGFBP-6 (P24592); Integral membrane protein 1 (Itm1, P46977); Interleukin-6 (P05231); Interleukin-8 (P10145); Interleukin-18 (Q14116); IP-10 (10 kDa interferon-gamma-induced protein, P02778); IRPR (IFRD1, O00458); Isovaleryl-CoA dehydrogenase (IVD, P26440); I-TAC/CXCL11 (O14625); Keratin 19 (P08727); Kim-1 (Hepatitis A virus cellular receptor 1, O43656); L-arginine:glycine amidinotransferase (P50440); Leptin (P41159); Lipocalin2 (NGAL, P80188); MCP-1 (P13500); MIG (Gamma-interferon-induced monokine Q07325); MIP-1a (P10147); MIP-3a (P78556); MIP-1beta (P13236); MIP-1d (Q16663); NAG (N-acetyl-beta-D-glucosaminidase, P54802); Organic ion transporter (OCT2, O15244); Osteoprotegerin (O14788); P8 protein (O60356); Plasminogen activator inhibitor 1 (PAI-1, P05121); ProANP(1-98) (P01160); Protein phosphatase 1-beta (PPI-beta, P62140); Rab GDI-beta (P50395); Renal kallikrein (Q86U61); RT1.B-1 (alpha) chain of the integral membrane protein (Q5Y7A8); Soluble tumor necrosis factor receptor superfamily member 1A (sTNFR-I, P19438); Soluble tumor necrosis factor receptor superfamily member 1B (sTNFR-II, P20333); Tissue inhibitor of metalloproteinases 3 (TIMP-3, P35625); uPAR (Q03405) may be combined with the kidney injury marker assay result(s) of the present invention.

[00126] Other clinical indicia which may be combined with the kidney injury marker assay result(s) of the present invention includes demographic information (e.g., weight, sex, age, race), medical history (e.g., family history, type of surgery, pre-existing disease such as aneurism, congestive heart failure, preeclampsia, eclampsia, diabetes mellitus, hypertension, coronary artery disease, proteinuria, renal insufficiency, or sepsis, type of toxin exposure such as NSAIDs, cyclosporines, tacrolimus, aminoglycosides, foscarnet, ethylene glycol, hemoglobin, myoglobin, ifosfamide, heavy metals, methotrexate, radiopaque contrast agents, or streptozotocin), clinical variables (e.g., blood pressure, temperature, respiration rate), risk scores (APACHE score, PREDICT score, TIMI Risk Score for UA/NSTEMI, Framingham Risk Score), a urine total protein measurement, a glomerular filtration rate, an estimated glomerular filtration rate, a urine production rate, a serum or plasma creatinine concentration, a renal papillary antigen 1 (RPA1) measurement; a renal papillary antigen 2 (RPA2) measurement; a urine creatinine concentration, a fractional excretion of sodium, a urine sodium concentration, a urine creatinine to serum or plasma creatinine ratio, a urine specific gravity, a urine osmolality, a urine urea nitrogen to plasma urea nitrogen ratio, a plasma BUN

to creatinine ratio, and/or a renal failure index calculated as urine sodium / (urine creatinine / plasma creatinine). Other measures of renal function which may be combined with the kidney injury marker assay result(s) are described hereinafter and in Harrison's Principles of Internal Medicine, 17th Ed., McGraw Hill, New York, pages 1741-1830, and Current Medical Diagnosis & Treatment 2008, 47th Ed, McGraw Hill, New York, pages 785-815, each of which are hereby incorporated by reference in their entirety.

[00127] Combining assay results/clinical indicia in this manner can comprise the use of multivariate logistical regression, loglinear modeling, neural network analysis, n-of-m analysis, decision tree analysis, etc. This list is not meant to be limiting.

[00128] Diagnosis of Acute Renal Failure

[00129] As noted above, the terms "acute renal (or kidney) injury" and "acute renal (or kidney) failure" as used herein are defined in part in terms of changes in serum creatinine from a baseline value. Most definitions of ARF have common elements, including the use of serum creatinine and, often, urine output. Patients may present with renal dysfunction without an available baseline measure of renal function for use in this comparison. In such an event, one may estimate a baseline serum creatinine value by assuming the patient initially had a normal GFR. Glomerular filtration rate (GFR) is the volume of fluid filtered from the renal (kidney) glomerular capillaries into the Bowman's capsule per unit time. Glomerular filtration rate (GFR) can be calculated by measuring any chemical that has a steady level in the blood, and is freely filtered but neither reabsorbed nor secreted by the kidneys. GFR is typically expressed in units of ml/min:

$$GFR = \frac{\text{Urine Concentration} \times \text{Urine Flow}}{\text{Plasma Concentration}}$$

[00130] By normalizing the GFR to the body surface area, a GFR of approximately 75–100 ml/min per 1.73 m² can be assumed. The rate therefore measured is the quantity of the substance in the urine that originated from a calculable volume of blood.

[00131] There are several different techniques used to calculate or estimate the glomerular filtration rate (GFR or eGFR). In clinical practice, however, creatinine clearance is used to measure GFR. Creatinine is produced naturally by the body (creatinine is a metabolite of creatine, which is found in muscle). It is freely filtered by the glomerulus, but also actively secreted by the renal tubules in very small amounts such that creatinine clearance overestimates actual GFR by 10-20%. This margin of error is acceptable considering the ease with which creatinine clearance is measured.

[00132] Creatinine clearance (CCr) can be calculated if values for creatinine's urine concentration (U_{Cr}), urine flow rate (V), and creatinine's plasma concentration (P_{Cr}) are known. Since the product of urine concentration and urine flow rate yields creatinine's excretion rate, creatinine clearance is also

said to be its excretion rate ($U_{Cr} \times V$) divided by its plasma concentration. This is commonly represented mathematically as:

$$C_{Cr} = \frac{U_{Cr} \times V}{P_{Cr}}$$

[00133] Commonly a 24 hour urine collection is undertaken, from empty-bladder one morning to the contents of the bladder the following morning, with a comparative blood test then taken:

$$C_{Cr} = \frac{U_{Cr} \times 24\text{-hour volume}}{P_{Cr} \times 24 \times 60\text{mins}}$$

[00134] To allow comparison of results between people of different sizes, the CCr is often corrected for the body surface area (BSA) and expressed compared to the average sized man as ml/min/1.73 m². While most adults have a BSA that approaches 1.7 (1.6-1.9), extremely obese or slim patients should have their CCr corrected for their actual BSA:

$$C_{Cr\text{-corrected}} = \frac{C_{Cr} \times 1.73}{BSA}$$

[00135] The accuracy of a creatinine clearance measurement (even when collection is complete) is limited because as glomerular filtration rate (GFR) falls creatinine secretion is increased, and thus the rise in serum creatinine is less. Thus, creatinine excretion is much greater than the filtered load, resulting in a potentially large overestimation of the GFR (as much as a twofold difference). However, for clinical purposes it is important to determine whether renal function is stable or getting worse or better. This is often determined by monitoring serum creatinine alone. Like creatinine clearance, the serum creatinine will not be an accurate reflection of GFR in the non-steady-state condition of ARF. Nonetheless, the degree to which serum creatinine changes from baseline will reflect the change in GFR. Serum creatinine is readily and easily measured and it is specific for renal function.

[00136] For purposes of determining urine output on a Urine output on a mL/kg/hr basis, hourly urine collection and measurement is adequate. In the case where, for example, only a cumulative 24-h output was available and no patient weights are provided, minor modifications of the RIFLE urine output criteria have been described. For example, Bagshaw *et al.*, *Nephrol. Dial. Transplant.* 23: 1203–1210, 2008, assumes an average patient weight of 70 kg, and patients are assigned a RIFLE classification based on the following: <35 mL/h (Risk), <21 mL/h (Injury) or <4 mL/h (Failure).

[00137] Selecting a Treatment Regimen

[00138] Once a diagnosis is obtained, the clinician can readily select a treatment regimen that is compatible with the diagnosis, such as initiating renal replacement therapy, withdrawing delivery of compounds that are known to be damaging to the kidney, kidney transplantation, delaying or avoiding

procedures that are known to be damaging to the kidney, modifying diuretic administration, initiating goal directed therapy, etc. The skilled artisan is aware of appropriate treatments for numerous diseases discussed in relation to the methods of diagnosis described herein. See, e.g., Merck Manual of Diagnosis and Therapy, 17th Ed. Merck Research Laboratories, Whitehouse Station, NJ, 1999. In addition, since the methods and compositions described herein provide prognostic information, the markers of the present invention may be used to monitor a course of treatment. For example, improved or worsened prognostic state may indicate that a particular treatment is or is not efficacious.

[00139] One skilled in the art readily appreciates that the present invention is well adapted to carry out the objects and obtain the ends and advantages mentioned, as well as those inherent therein. The examples provided herein are representative of preferred embodiments, are exemplary, and are not intended as limitations on the scope of the invention.

[00140] Example 1: Contrast-induced nephropathy sample collection

[00141] The objective of this sample collection study is to collect samples of plasma and urine and clinical data from patients before and after receiving intravascular contrast media. Approximately 250 adults undergoing radiographic/angiographic procedures involving intravascular administration of iodinated contrast media are enrolled. To be enrolled in the study, each patient must meet all of the following inclusion criteria and none of the following exclusion criteria:

Inclusion Criteria

males and females 18 years of age or older;

undergoing a radiographic / angiographic procedure (such as a CT scan or coronary intervention) involving the intravascular administration of contrast media;

expected to be hospitalized for at least 48 hours after contrast administration.

able and willing to provide written informed consent for study participation and to comply with all study procedures.

Exclusion Criteria

renal transplant recipients;

acutely worsening renal function prior to the contrast procedure;

already receiving dialysis (either acute or chronic) or in imminent need of dialysis at enrollment;

expected to undergo a major surgical procedure (such as involving cardiopulmonary bypass) or an additional imaging procedure with contrast media with significant risk for further renal insult within the 48 hrs following contrast administration;

participation in an interventional clinical study with an experimental therapy within the previous 30 days;

known infection with human immunodeficiency virus (HIV) or a hepatitis virus.

[00142] Immediately prior to the first contrast administration (and after any pre-procedure hydration), an EDTA anti-coagulated blood sample (10 mL) and a urine sample (10 mL) are collected from each patient. Blood and urine samples are then collected at 4 (± 0.5), 8 (± 1), 24 (± 2), 48 (± 2), and 72 (± 2) hrs following the last administration of contrast media during the index contrast procedure. Blood is collected via direct venipuncture or via other available venous access, such as an existing femoral sheath, central venous line, peripheral intravenous line or hep-lock. These study blood samples are processed to plasma at the clinical site, frozen and shipped to Astute Medical, Inc., San Diego, CA. The study urine samples are frozen and shipped to Astute Medical, Inc.

[00143] Serum creatinine is assessed at the site immediately prior to the first contrast administration (after any pre-procedure hydration) and at 4 (± 0.5), 8 (± 1), 24 (± 2) and 48 (± 2), and 72 (± 2) hours following the last administration of contrast (ideally at the same time as the study samples are obtained). In addition, each patient's status is evaluated through day 30 with regard to additional serum and urine creatinine measurements, a need for dialysis, hospitalization status, and adverse clinical outcomes (including mortality).

[00144] Prior to contrast administration, each patient is assigned a risk based on the following assessment: systolic blood pressure < 80 mm Hg = 5 points; intra-arterial balloon pump = 5 points; congestive heart failure (Class III-IV or history of pulmonary edema) = 5 points; age > 75 yrs = 4 points; hematocrit level $< 39\%$ for men, $< 35\%$ for women = 3 points; diabetes = 3 points; contrast media volume = 1 point for each 100 mL; serum creatinine level > 1.5 g/dL = 4 points OR estimated GFR $40-60$ mL/min/1.73 m² = 2 points, $20-40$ mL/min/1.73 m² = 4 points, < 20 mL/min/1.73 m² = 6 points. The risks assigned are as follows: risk for CIN and dialysis: 5 or less total points = risk of CIN - 7.5%, risk of dialysis - 0.04%; 6-10 total points = risk of CIN - 14%, risk of dialysis - 0.12%; 11-16 total points = risk of CIN - 26.1%, risk of dialysis - 1.09%; > 16 total points = risk of CIN - 57.3%, risk of dialysis - 12.8%.

[00145] Example 2: Cardiac surgery sample collection

[00146] The objective of this sample collection study is to collect samples of plasma and urine and clinical data from patients before and after undergoing cardiovascular surgery, a procedure known to be potentially damaging to kidney function. Approximately 900 adults undergoing such surgery are enrolled. To be enrolled in the study, each patient must meet all of the following inclusion criteria and none of the following exclusion criteria:

Inclusion Criteria

males and females 18 years of age or older;

undergoing cardiovascular surgery;

Toronto/Ottawa Predictive Risk Index for Renal Replacement risk score of at least 2 (Wijeysundera *et al.*, *JAMA* 297: 1801-9, 2007); and

able and willing to provide written informed consent for study participation and to comply with all study procedures.

Exclusion Criteria

known pregnancy;

previous renal transplantation;

acutely worsening renal function prior to enrollment (e.g., any category of

RIFLE criteria);

already receiving dialysis (either acute or chronic) or in imminent need of dialysis at enrollment;

currently enrolled in another clinical study or expected to be enrolled in another clinical study within 7 days of cardiac surgery that involves drug infusion or a therapeutic intervention for AKI;

known infection with human immunodeficiency virus (HIV) or a hepatitis virus.

[00147] Within 3 hours prior to the first incision (and after any pre-procedure hydration), an EDTA anti-coagulated blood sample (10 mL), whole blood (3 mL), and a urine sample (35 mL) are collected from each patient. Blood and urine samples are then collected at 3 (± 0.5), 6 (± 0.5), 12 (± 1), 24 (± 2) and 48 (± 2) hrs following the procedure and then daily on days 3 through 7 if the subject remains in the hospital. Blood is collected via direct venipuncture or via other available venous access, such as an existing femoral sheath, central venous line, peripheral intravenous line or heparin lock. These study blood samples are frozen and shipped to Astute Medical, Inc., San Diego, CA. The study urine samples are frozen and shipped to Astute Medical, Inc.

[00148] Example 3: Acutely ill subject sample collection

[00149] The objective of this study is to collect samples from acutely ill patients. Approximately 900 adults expected to be in the ICU for at least 48 hours will be enrolled. To be enrolled in the study, each patient must meet all of the following inclusion criteria and none of the following exclusion criteria:

Inclusion Criteria

males and females 18 years of age or older;

Study population 1: approximately 300 patients that have at least one of:

shock (SBP < 90 mmHg and/or need for vasopressor support to maintain MAP > 60 mmHg and/or documented drop in SBP of at least 40 mmHg); and

sepsis;

Study population 2: approximately 300 patients that have at least one of:

IV antibiotics ordered in computerized physician order entry (CPOE) within 24 hours of enrollment;
contrast media exposure within 24 hours of enrollment;

increased Intra-Abdominal Pressure with acute decompensated heart failure; and

severe trauma as the primary reason for ICU admission and likely to be hospitalized in the ICU for 48 hours after enrollment;

Study population 3: approximately 300 patients

expected to be hospitalized through acute care setting (ICU or ED) with a known risk factor for acute renal injury (*e.g.* sepsis, hypotension/shock (Shock = systolic BP < 90 mmHg and/or the need for vasopressor support to maintain a MAP > 60 mmHg and/or a documented drop in SBP > 40 mmHg), major trauma, hemorrhage, or major surgery); and/or expected to be hospitalized to the ICU for at least 24 hours after enrollment.

Exclusion Criteria

known pregnancy;

institutionalized individuals;

previous renal transplantation;

known acutely worsening renal function prior to enrollment (*e.g.*, any category of RIFLE criteria);

received dialysis (either acute or chronic) within 5 days prior to enrollment or in imminent need of dialysis at the time of enrollment;

known infection with human immunodeficiency virus (HIV) or a hepatitis virus;

meets only the SBP < 90 mmHg inclusion criterion set forth above, and does not have shock in the attending physician's or principal investigator's opinion.

[00150] After providing informed consent, an EDTA anti-coagulated blood sample (10 mL) and a urine sample (25-30 mL) are collected from each patient. Blood and urine samples are then collected at 4 ($\pm$ 0.5) and 8 ($\pm$ 1) hours after contrast administration (if applicable); at 12 ($\pm$ 1), 24 ($\pm$ 2), and 48 ($\pm$ 2) hours after enrollment, and thereafter daily up to day 7 to day 14 while the subject is hospitalized. Blood is collected via direct venipuncture or via other available venous access, such as an existing femoral sheath, central venous line, peripheral intravenous line or hep-lock. These study blood samples are processed to plasma at the clinical site, frozen and shipped to Astute Medical, Inc., San Diego, CA. The study urine samples are frozen and shipped to Astute Medical, Inc.

[00151] Example 4. Immunoassay format

[00152] Analytes are is measured using standard sandwich enzyme immunoassay techniques. A first antibody which binds the analyte is immobilized in wells of a 96 well polystyrene microplate. Analyte standards and test samples are pipetted into the appropriate wells and any analyte present is bound by the immobilized antibody. After washing away any unbound substances, a horseradish peroxidase-conjugated second antibody which binds the analyte is added to the wells, thereby forming sandwich complexes with the analyte (if present) and the first antibody. Following a wash to remove any unbound antibody-enzyme reagent, a substrate solution comprising tetramethylbenzidine and hydrogen peroxide is added to the wells. Color develops in proportion to the amount of analyte present in the sample. The color development is stopped and the intensity of the color is measured at 540 nm or 570 nm. An analyte concentration is assigned to the test sample by comparison to a standard curve determined from the analyte standards.

[00153] Concentrations are expressed in the following examples as follows: soluble CD44 antigen – ng/mL, Angiopoietin-1 – pg/mL, soluble Angiopoietin-1 receptor – ng/mL, C-X-C chemokine motif 5 – ng/mL, soluble Endoglin – pg/mL, soluble Tumor-associated calcium signal transducer 1 (also known as “epithelial cell-adhesion molecule”) – pg/mL, Erythropoietin – pg/mL, soluble Fractalkine – ng/mL, Heme oxygenase 1 – ng/mL, soluble Interleukin-1 receptor – pg/mL, type II – pg/mL, soluble Interleukin-6 receptor subunit-alpha – pg/mL, Lymphotoxin-alpha – pg/mL, Stromelysin-1 (also known as “matrix metalloproteinase-3”) – ng/mL, C-C motif chemokine 22 (also known as “MDC”) – pg/mL, C-C motif chemokine 5 (also known as “Rantes”) – ng/mL, and Thrombospondin-1 – ng/mL.

[00154] Example 5. Apparently Healthy Donor and Chronic Disease Patient Samples

[00155] Human urine samples from donors with no known chronic or acute disease (“Apparently Healthy Donors”) were purchased from two vendors (Golden West Biologicals, Inc., 27625 Commerce Center Dr., Temecula, CA 92590 and Virginia Medical Research, Inc., 915 First Colonial Rd., Virginia Beach, VA 23454). The urine samples were shipped and stored frozen at less than -20° C. The vendors supplied demographic information for the individual donors including gender, race (Black /White), smoking status and age.

[00156] Human urine samples from donors with various chronic diseases (“Chronic Disease Patients”) including congestive heart failure, coronary artery disease, chronic kidney disease, chronic obstructive pulmonary disease, diabetes mellitus and hypertension were purchased from Virginia Medical Research, Inc., 915 First Colonial Rd., Virginia Beach, VA 23454. The urine samples were shipped and stored frozen at less than -20 degrees centigrade. The vendor provided a case report form for each individual donor with age, gender, race (Black/White), smoking status and alcohol use, height, weight, chronic disease(s) diagnosis, current medications and previous surgeries.

[00157] Example 6. Kidney injury markers for evaluating renal status in patients at RIFLE Stage

[00158] Patients from the intensive care unit (ICU) were classified by kidney status as non-injury (0), risk of injury (R), injury (I), and failure (F) according to the maximum stage reached within 7 days of enrollment as determined by the RIFLE criteria.

[00159] Two cohorts were defined as (Cohort 1) patients that did not progress beyond stage 0, and (Cohort 2) patients that reached stage R, I, or F within 10 days. To address normal marker fluctuations that occur within patients at the ICU and thereby assess utility for monitoring AKI status, marker levels were measured in urine samples collected for Cohort 1. Marker concentrations were measured in urine samples collected from a subject at 0, 24 hours, and 48 hours prior to reaching stage R, I or F in Cohort 2. In the following tables, the time “prior max stage” represents the time at which a sample is collected, relative to the time a particular patient reaches the lowest disease stage as defined for that cohort, binned into three groups which are +/- 12 hours. For example, 24 hr prior for this example (0 vs R, I, F) would mean 24 hr (+/- 12 hours) prior to reaching stage R (or I if no sample at R, or F if no sample at R or I).

[00160] Each marker was measured by standard immunoassay methods using commercially available assay reagents. A receiver operating characteristic (ROC) curve was generated for each marker and the area under each ROC curve (AUC) was determined. Patients in Cohort 2 were also separated according to the reason for adjudication to stage R, I, or F as being based on serum creatinine measurements (sCr), being based on urine output (UO), or being based on either serum creatinine measurements or urine output. That is, for those patients adjudicated to stage R, I, or F on the basis of serum creatinine measurements alone, the stage 0 cohort may have included patients adjudicated to stage R, I, or F on the basis of urine output; for those patients adjudicated to stage R, I, or F on the basis of urine output alone, the stage 0 cohort may have included patients adjudicated to stage R, I, or F on the basis of serum creatinine measurements; and for those patients adjudicated to stage R, I, or F on the basis of serum creatinine measurements or urine output, the stage 0 cohort contains only patients in stage 0 for both serum creatinine measurements and urine output. Also, for those patients adjudicated to stage R, I, or F on the basis of serum creatinine measurements or urine output, the adjudication method which yielded the most severe RIFLE stage was used.

[00161] The ability to distinguish cohort 1 (subjects remaining in RIFLE 0) from Cohort 2 (subjects progressing to RIFLE R, I or F) was determined using ROC analysis. SE is the standard error of the AUC, n is the number of sample or individual patients (“pts,” as indicated). Standard errors were calculated as described in Hanley, J. A., and McNeil, B.J., The meaning and use of the area under a receiver operating characteristic (ROC) curve. Radiology (1982) 143: 29-36; p values were calculated with a two-tailed Z-test. An AUC < 0.5 is indicative of a negative going marker for the comparison, and an AUC > 0.5 is indicative of a positive going marker for the comparison.

[00162] Various threshold (or “cutoff”) concentrations were selected, and the associated sensitivity and specificity for distinguishing cohort 1 from cohort 2 were determined. OR is the odds

ratio calculated for the particular cutoff concentration, and 95% CI is the confidence interval for the odds ratio.

[00163] The results of these three analyses for various markers of the present invention are presented in Fig. 1.

[00164] Example 7. Kidney injury markers for evaluating renal status in patients at RIFLE Stages 0 and R

[00165] Patients were classified and analyzed as described in Example 6. However, patients that reached stage R but did not progress to stage I or F were grouped with patients from non-injury stage 0 in Cohort 1. Cohort 2 in this example included only patients that progressed to stage I or F. Marker concentrations in urine samples were included for Cohort 1. Marker concentrations in urine samples collected within 0, 24, and 48 hours of reaching stage I or F were included for Cohort 2.

[00166] The ability to distinguish cohort 1 (subjects remaining in RIFLE 0 or R) from Cohort 2 (subjects progressing to RIFLE I or F) was determined using ROC analysis.

[00167] Various threshold (or “cutoff”) concentrations were selected, and the associated sensitivity and specificity for distinguishing cohort 1 from cohort 2 were determined. OR is the odds ratio calculated for the particular cutoff concentration, and 95% CI is the confidence interval for the odds ratio.

[00168] The results of these three analyses for various markers of the present invention are presented in Fig. 2.

[00169] Example 8. Kidney injury markers for evaluating renal status in patients progressing from Stage R to Stages I and F

[00170] Patients were classified and analyzed as described in Example 6, but only those patients that reached Stage R were included in this example. Cohort 1 contained patients that reached stage R but did not progress to stage I or F within 10 days, and Cohort 2 included only patients that progressed to stage I or F. Marker concentrations in urine samples collected within 12 hours of reaching stage R were included in the analysis for both Cohort 1 and 2.

[00171] The ability to distinguish cohort 1 (subjects remaining in RIFLE R) from Cohort 2 (subjects progressing to RIFLE I or F) was determined using ROC analysis.

[00172] Various threshold (or “cutoff”) concentrations were selected, and the associated sensitivity and specificity for distinguishing cohort 1 from cohort 2 were determined. OR is the odds ratio calculated for the particular cutoff concentration, and 95% CI is the confidence interval for the odds ratio.

[00173] The results of these three analyses for various markers of the present invention are presented in Fig. 3.

[00174] Example 9. Kidney injury markers for evaluating renal status in patients at RIFLE Stage 0

[00175] Patients were classified and analyzed as described in Example 6. However, patients that reached stage R or I but did not progress to stage F were eliminated from the analysis. Patients from non-injury stage 0 are included in Cohort 1. Cohort 2 in this example included only patients that progressed to stage F. The maximum marker concentrations in urine samples were included for each patient in Cohort 1. The maximum marker concentrations in urine samples collected within 0, 24, and 48 hours of reaching stage F were included for each patient in Cohort 2.

[00176] The ability to distinguish cohort 1 (subjects remaining in RIFLE 0 or R) from Cohort 2 (subjects progressing to RIFLE I or F) was determined using ROC analysis.

[00177] Various threshold (or “cutoff”) concentrations were selected, and the associated sensitivity and specificity for distinguishing cohort 1 from cohort 2 were determined. OR is the odds ratio calculated for the particular cutoff concentration, and 95% CI is the confidence interval for the odds ratio.

[00178] The results of these three analyses for various markers of the present invention are presented in Fig. 4.

[00179] Example 10. Kidney injury markers for evaluating renal status in patients at RIFLE Stage 0

[00180] Patients from the intensive care unit (ICU) were classified by kidney status as non-injury (0), risk of injury (R), injury (I), and failure (F) according to the maximum stage reached within 7 days of enrollment as determined by the RIFLE criteria.

[00181] Two cohorts were defined as (Cohort 1) patients that did not progress beyond stage 0, and (Cohort 2) patients that reached stage R, I, or F within 10 days. To address normal marker fluctuations that occur within patients at the ICU and thereby assess utility for monitoring AKI status, marker levels were measured in the plasma component of blood samples collected for Cohort 1. Marker concentrations were measured in the plasma component of blood samples collected from a subject at 0, 24 hours, and 48 hours prior to reaching stage R, I or F in Cohort 2. In the following tables, the time “prior max stage” represents the time at which a sample is collected, relative to the time a particular patient reaches the lowest disease stage as defined for that cohort, binned into three groups which are +/- 12 hours. For example, 24 hr prior for this example (0 vs R, I, F) would mean 24 hr (+/- 12 hours) prior to reaching stage R (or I if no sample at R, or F if no sample at R or I).

[00182] Each marker was measured by standard immunoassay methods using commercially available assay reagents. A receiver operating characteristic (ROC) curve was generated for each marker and the area under each ROC curve (AUC) was determined. Patients in Cohort 2 were also separated according to the reason for adjudication to stage R, I, or F as being based on serum creatinine measurements (sCr), being based on urine output (UO), or being based on either serum creatinine measurements or urine output. That is, for those patients adjudicated to stage R, I, or F on the basis of serum creatinine measurements alone, the stage 0 cohort may have included patients adjudicated to stage R, I, or F on the basis of urine output; for those patients adjudicated to stage R, I, or F on the basis of urine output alone, the stage 0 cohort may have included patients adjudicated to stage R, I, or F on the basis of serum creatinine measurements; and for those patients adjudicated to stage R, I, or F on the basis of serum creatinine measurements or urine output, the stage 0 cohort contains only patients in stage 0 for both serum creatinine measurements and urine output. Also, for those patients adjudicated to stage R, I, or F on the basis of serum creatinine measurements or urine output, the adjudication method which yielded the most severe RIFLE stage was used.

[00183] The ability to distinguish cohort 1 (subjects remaining in RIFLE 0) from Cohort 2 (subjects progressing to RIFLE R, I or F) was determined using ROC analysis. SE is the standard error of the AUC, n is the number of sample or individual patients ("pts," as indicated). Standard errors were calculated as described in Hanley, J. A., and McNeil, B.J., The meaning and use of the area under a receiver operating characteristic (ROC) curve. Radiology (1982) 143: 29-36; p values were calculated with a two-tailed Z-test. An AUC < 0.5 is indicative of a negative going marker for the comparison, and an AUC > 0.5 is indicative of a positive going marker for the comparison.

[00184] Various threshold (or "cutoff") concentrations were selected, and the associated sensitivity and specificity for distinguishing cohort 1 from cohort 2 were determined. OR is the odds ratio calculated for the particular cutoff concentration, and 95% CI is the confidence interval for the odds ratio.

[00185] The results of these three analyses for various markers of the present invention are presented in Fig. 5.

[00186] Example 11. Kidney injury markers for evaluating renal status in patients at RIFLE Stages 0 and R

[00187] Patients were classified and analyzed as described in Example 10. However, patients that reached stage R but did not progress to stage I or F were grouped with patients from non-injury stage 0 in Cohort 1. Cohort 2 in this example included only patients that progressed to stage I or F. Marker concentrations in the plasma component of blood samples were included for Cohort 1. Marker concentrations in the plasma component of blood samples collected within 0, 24, and 48 hours of reaching stage I or F were included for Cohort 2.

[00188] The ability to distinguish cohort 1 (subjects remaining in RIFLE 0 or R) from Cohort 2 (subjects progressing to RIFLE I or F) was determined using ROC analysis.

[00189] Various threshold (or “cutoff”) concentrations were selected, and the associated sensitivity and specificity for distinguishing cohort 1 from cohort 2 were determined. OR is the odds ratio calculated for the particular cutoff concentration, and 95% CI is the confidence interval for the odds ratio.

[00190] The results of these three analyses for various markers of the present invention are presented in Fig. 6.

[00191] Example 12. Kidney injury markers for evaluating renal status in patients progressing from Stage R to Stages I and F

[00192] Patients were classified and analyzed as described in Example 10, but only those patients that reached Stage R were included in this example. Cohort 1 contained patients that reached stage R but did not progress to stage I or F within 10 days, and Cohort 2 included only patients that progressed to stage I or F. Marker concentrations in the plasma component of blood samples collected within 12 hours of reaching stage R were included in the analysis for both Cohort 1 and 2.

[00193] The ability to distinguish cohort 1 (subjects remaining in RIFLE R) from Cohort 2 (subjects progressing to RIFLE I or F) was determined using ROC analysis.

[00194] Various threshold (or “cutoff”) concentrations were selected, and the associated sensitivity and specificity for distinguishing cohort 1 from cohort 2 were determined. OR is the odds ratio calculated for the particular cutoff concentration, and 95% CI is the confidence interval for the odds ratio.

[00195] The results of these three analyses for various markers of the present invention are presented in Fig. 7.

[00196] Example 13. Kidney injury markers for evaluating renal status in patients at RIFLE Stage 0

[00197] Patients were classified and analyzed as described in Example 10. However, patients that reached stage R or I but did not progress to stage F were eliminated from the analysis. Patients from non-injury stage 0 are included in Cohort 1. Cohort 2 in this example included only patients that progressed to stage F. The maximum marker concentrations in the plasma component of blood samples were included from each patient in Cohort 1. The maximum marker concentrations in the plasma component of blood samples collected within 0, 24, and 48 hours of reaching stage F were included from each patient in Cohort 2.

[00198] The ability to distinguish cohort 1 (subjects remaining in RIFLE 0 or R) from Cohort 2 (subjects progressing to RIFLE I or F) was determined using ROC analysis.

[00199] Various threshold (or “cutoff”) concentrations were selected, and the associated sensitivity and specificity for distinguishing cohort 1 from cohort 2 were determined. OR is the odds ratio calculated for the particular cutoff concentration, and 95% CI is the confidence interval for the odds ratio.

[00200] The results of these three analyses for various markers of the present invention are presented in Fig. 8.

[00201] While the invention has been described and exemplified in sufficient detail for those skilled in this art to make and use it, various alternatives, modifications, and improvements should be apparent without departing from the spirit and scope of the invention. The examples provided herein are representative of preferred embodiments, are exemplary, and are not intended as limitations on the scope of the invention. Modifications therein and other uses will occur to those skilled in the art. These modifications are encompassed within the spirit of the invention and are defined by the scope of the claims.

[00202] It will be readily apparent to a person skilled in the art that varying substitutions and modifications may be made to the invention disclosed herein without departing from the scope and spirit of the invention.

[00203] All patents and publications mentioned in the specification are indicative of the levels of those of ordinary skill in the art to which the invention pertains. All patents and publications are herein incorporated by reference to the same extent as if each individual publication was specifically and individually indicated to be incorporated by reference.

[00204] The invention illustratively described herein suitably may be practiced in the absence of any element or elements, limitation or limitations which is not specifically disclosed herein. Thus, for example, in each instance herein any of the terms “comprising”, “consisting essentially of” and “consisting of” may be replaced with either of the other two terms. The terms and expressions which have been employed are used as terms of description and not of limitation, and there is no intention that in the use of such terms and expressions of excluding any equivalents of the features shown and described or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed. Thus, it should be understood that although the present invention has been specifically disclosed by preferred embodiments and optional features, modification and variation of the concepts herein disclosed may be resorted to by those skilled in the art, and that such modifications and variations are considered to be within the scope of this invention as defined by the appended claims.

[00205] Other embodiments are set forth within the following claims.

We claim:

1. A method for evaluating renal status in a subject, comprising:

performing one or more assays configured to detect a kidney injury marker selected from the group consisting of soluble CD44 antigen, Angiopoietin-1, soluble Angiopoietin-1 receptor, C-X-C chemokine motif 5, soluble Endoglin, soluble Tumor-associated calcium signal transducer 1, Erythropoietin, soluble Fractalkine, Heme oxygenase 1, soluble Interleukin-1 receptor type II, soluble Interleukin-6 receptor subunit-alpha, Lymphotactin, Lymphotoxin-alpha, Stromelysin-1, C-C motif chemokine 22, C-C motif chemokine 5, and Thrombospondin-1 on a body fluid sample obtained from the subject to provide one or more assay results; and

correlating the assay result(s) to the renal status of the subject.

2. A method according to claim 1, wherein said correlation step comprises correlating the assay result(s) to one or more of risk stratification, diagnosis, staging, prognosis, classifying and monitoring of the renal status of the subject.

3. A method according to claim 1, wherein said correlating step comprises assigning a likelihood of one or more future changes in renal status to the subject based on the assay result(s).

4. A method according to claim 3, wherein said one or more future changes in renal status comprise one or more of a future injury to renal function, future reduced renal function, future improvement in renal function, and future acute renal failure (ARF).

5. A method according to claim 4, wherein said assay result(s) comprise one or more of:

- (i) a measured concentration of soluble CD44 antigen,
- (ii) a measured concentration of Angiopoietin-1,
- (iii) a measured concentration of soluble Angiopoietin-1 receptor,
- (iv) a measured concentration of C-X-C chemokine motif 5,
- (v) a measured concentration of soluble Endoglin,
- (vi) a measured concentration of soluble Tumor-associated calcium signal transducer 1,
- (vii) a measured concentration of Erythropoietin,
- (viii) a measured concentration of soluble Fractalkine,
- (ix) a measured concentration of Heme oxygenase 1,
- (x) a measured concentration of soluble Interleukin-1 receptor type II,
- (xi) a measured concentration of soluble Interleukin-6 receptor subunit-alpha,
- (xii) a measured concentration of Lymphotactin,

- (xiii) a measured concentration of Lymphotoxin-alpha,
- (xiv) a measured concentration of Stromelysin-1,
- (xv) a measured concentration of C-C motif chemokine 22,
- (xvi) a measured concentration of C-C motif chemokine 5, or
- (xvii) a measured concentration of Thrombospondin-1,

and said correlation step comprises, for each assay result, comparing said measure concentration to a threshold concentration, and

for a positive going marker, assigning an increased likelihood of suffering a future injury to renal function, future reduced renal function, future ARF, or a future improvement in renal function to the subject when the measured concentration is above the threshold, relative to a likelihood assigned when the measured concentration is below the threshold or assigning a decreased likelihood of suffering a future injury to renal function, future reduced renal function, future ARF, or a future improvement in renal function to the subject when the measured concentration is below the threshold, relative to a likelihood assigned when the measured concentration is above the threshold, or

for a negative going marker, assigning an increased likelihood of suffering a future injury to renal function, future reduced renal function, future ARF, or a future improvement in renal function to the subject when the measured concentration is below the threshold, relative to a likelihood assigned when the measured concentration is above the threshold or assigning a decreased likelihood of suffering a future injury to renal function, future reduced renal function, future ARF, or a future improvement in renal function to the subject when the measured concentration is above the threshold, relative to a likelihood assigned when the measured concentration is below the threshold.

6. A method according to claim 3, wherein said one or more future changes in renal status comprise a clinical outcome related to a renal injury suffered by the subject.

7. A method according to claim 1, wherein said assay result(s) comprise one or more of:

- (i) a measured concentration of soluble CD44 antigen,
- (ii) a measured concentration of Angiopoietin-1,
- (iii) a measured concentration of soluble Angiopoietin-1 receptor ,
- (iv) a measured concentration of C-X-C chemokine motif 5,
- (v) a measured concentration of soluble Endoglin,
- (vi) a measured concentration of soluble Tumor-associated calcium signal transducer 1,
- (vii) a measured concentration of Erythropoietin,
- (viii) a measured concentration of soluble Fractalkine,

- (ix) a measured concentration of Heme oxygenase 1,
- (x) a measured concentration of soluble Interleukin-1 receptor type II,
- (xi) a measured concentration of soluble Interleukin-6 receptor subunit-alpha,
- (xii) a measured concentration of Lymphotoxin,
- (xiii) a measured concentration of Lymphotoxin-alpha,
- (xiv) a measured concentration of Stromelysin-1,
- (xv) a measured concentration of C-C motif chemokine 22,
- (xvi) a measured concentration of C-C motif chemokine 5, or
- (xvii) a measured concentration of Thrombospondin-1,

and said correlation step comprises, for each assay result, comparing said measure concentration to a threshold concentration, and

for a positive going marker, assigning an increased likelihood of subsequent acute kidney injury, worsening stage of AKI, mortality, need for renal replacement therapy, need for withdrawal of renal toxins, end stage renal disease, heart failure, stroke, myocardial infarction, or chronic kidney disease to the subject when the measured concentration is above the threshold, relative to a likelihood assigned when the measured concentration is below the threshold, or assigning a decreased likelihood of subsequent acute kidney injury, worsening stage of AKI, mortality, need for renal replacement therapy, need for withdrawal of renal toxins, end stage renal disease, heart failure, stroke, myocardial infarction, or chronic kidney disease to the subject when the measured concentration is below the threshold, relative to a likelihood assigned when the measured concentration is above the threshold, or

for a negative going marker, assigning an increased likelihood of subsequent acute kidney injury, worsening stage of AKI, mortality, need for renal replacement therapy, need for withdrawal of renal toxins, end stage renal disease, heart failure, stroke, myocardial infarction, or chronic kidney disease to the subject when the measured concentration is below the threshold, relative to a likelihood assigned when the measured concentration is above the threshold, or assigning a decreased likelihood of subsequent acute kidney injury, worsening stage of AKI, mortality, need for renal replacement therapy, need for withdrawal of renal toxins, end stage renal disease, heart failure, stroke, myocardial infarction, or chronic kidney disease to the subject when the measured concentration is above the threshold, relative to a likelihood assigned when the measured concentration is below the threshold.

8. A method according to claim 3, wherein the likelihood of one or more future changes in renal status is that an event of interest is more or less likely to occur within 30 days of the time at which the body fluid sample is obtained from the subject.

9. A method according to claim 8, wherein the likelihood of one or more future changes in renal status is that an event of interest is more or less likely to occur within a period selected from the group consisting of 21 days, 14 days, 7 days, 5 days, 96 hours, 72 hours, 48 hours, 36 hours, 24 hours, and 12 hours.
10. A method according to claim 1, wherein the subject is selected for evaluation of renal status based on the pre-existence in the subject of one or more known risk factors for prerenal, intrinsic renal, or postrenal ARF.
11. A method according to claim 1, wherein the subject is selected for evaluation of renal status based on an existing diagnosis of one or more of congestive heart failure, preeclampsia, eclampsia, diabetes mellitus, hypertension, coronary artery disease, proteinuria, renal insufficiency, glomerular filtration below the normal range, cirrhosis, serum creatinine above the normal range, sepsis, injury to renal function, reduced renal function, or ARF, or based on undergoing or having undergone major vascular surgery, coronary artery bypass, or other cardiac surgery, or based on exposure to NSAIDs, cyclosporines, tacrolimus, aminoglycosides, foscarnet, ethylene glycol, hemoglobin, myoglobin, ifosfamide, heavy metals, methotrexate, radiopaque contrast agents, or streptozotocin.
12. A method according to claim 1, wherein said correlating step comprises assigning a diagnosis of the occurrence or nonoccurrence of one or more of an injury to renal function, reduced renal function, or ARF to the subject based on the assay result(s).
13. A method according to claim 12, wherein said assay result(s) comprise one or more of:
- (i) a measured concentration of soluble CD44 antigen,
 - (ii) a measured concentration of Angiopoietin-1,
 - (iii) a measured concentration of soluble Angiopoietin-1 receptor ,
 - (iv) a measured concentration of C-X-C chemokine motif 5,
 - (v) a measured concentration of soluble Endoglin,
 - (vi) a measured concentration of soluble Tumor-associated calcium signal transducer 1,
 - (vii) a measured concentration of Erythropoietin,
 - (viii) a measured concentration of soluble Fractalkine,
 - (ix) a measured concentration of Heme oxygenase 1,
 - (x) a measured concentration of soluble Interleukin-1 receptor type II,
 - (xi) a measured concentration of soluble Interleukin-6 receptor subunit-alpha,
 - (xii) a measured concentration of Lymphotactin,
 - (xiii) a measured concentration of Lymphotoxin-alpha,

- (xiv) a measured concentration of Stromelysin-1,
- (xv) a measured concentration of C-C motif chemokine 22,
- (xvi) a measured concentration of C-C motif chemokine 5, or
- (xvii) a measured concentration of Thrombospondin-1,

and said correlation step comprises, for each assay result, comparing said measure concentration to a threshold concentration, and

for a positive going marker, assigning the occurrence of an injury to renal function, reduced renal function, or ARF to the subject when the measured concentration is above the threshold, or assigning the nonoccurrence of an injury to renal function, reduced renal function, or ARF to the subject when the measured concentration is below the threshold, or

for a negative going marker, assigning the occurrence of an injury to renal function, reduced renal function, or ARF to the subject when the measured concentration is below the threshold, or assigning the nonoccurrence of an injury to renal function, reduced renal function, or ARF to the subject when the measured concentration is above the threshold.

14. A method according to claim 1, wherein said correlating step comprises assessing whether or not renal function is improving or worsening in a subject who has suffered from an injury to renal function, reduced renal function, or ARF based on the assay result(s).

15. A method according to claim 14, wherein said assay result(s) comprise one or more of:

- (i) a measured concentration of soluble CD44 antigen,
- (ii) a measured concentration of Angiopoietin-1,
- (iii) a measured concentration of soluble Angiopoietin-1 receptor ,
- (iv) a measured concentration of C-X-C chemokine motif 5,
- (v) a measured concentration of soluble Endoglin,
- (vi) a measured concentration of soluble Tumor-associated calcium signal transducer 1,
- (vii) a measured concentration of Erythropoietin,
- (viii) a measured concentration of soluble Fractalkine,
- (ix) a measured concentration of Heme oxygenase 1,
- (x) a measured concentration of soluble Interleukin-1 receptor type II,
- (xi) a measured concentration of soluble Interleukin-6 receptor subunit-alpha,
- (xii) a measured concentration of Lymphotoxin,
- (xiii) a measured concentration of Lymphotoxin-alpha,

- (xiv) a measured concentration of Stromelysin-1,
- (xv) a measured concentration of C-C motif chemokine 22,
- (xvi) a measured concentration of C-C motif chemokine 5, or
- (xvii) a measured concentration of Thrombospondin-1,

and said correlation step comprises, for each assay result, comparing said measure concentration to a threshold concentration, and

for a positive going marker, assigning a worsening of renal function to the subject when the measured concentration is above the threshold, or assigning an improvement of renal function when the measured concentration is below the threshold, or

for a negative going marker, assigning a worsening of renal function to the subject when the measured concentration is below the threshold, or assigning an improvement of renal function when the measured concentration is above the threshold.

16. A method according to claim 1, wherein said method is a method of diagnosing the occurrence or nonoccurrence of an injury to renal function in said subject.

17. A method according to claim 1, wherein said method is a method of diagnosing the occurrence or nonoccurrence of reduced renal function in said subject.

18. A method according to claim 1, wherein said method is a method of diagnosing the occurrence or nonoccurrence of acute renal failure in said subject.

19. A method according to claim 1, wherein said method is a method of diagnosing the occurrence or nonoccurrence of a need for renal replacement therapy in said subject.

20. A method according to claim 1, wherein said method is a method of diagnosing the occurrence or nonoccurrence of a need for renal transplantation in said subject.

21. A method according to claim 1, wherein said method is a method of assigning a risk of the future occurrence or nonoccurrence of an injury to renal function in said subject.

22. A method according to claim 1, wherein said method is a method of assigning a risk of the future occurrence or nonoccurrence of reduced renal function in said subject.

23. A method according to claim 1, wherein said method is a method of assigning a risk of the future occurrence or nonoccurrence of acute renal failure in said subject.

24. A method according to claim 1, wherein said method is a method of assigning a risk of the future occurrence or nonoccurrence of a need for renal replacement therapy in said subject.

25. A method according to claim 1, wherein said method is a method of assigning a risk of the future occurrence or nonoccurrence of a need for renal transplantation in said subject.

26. A method according to claim 5, wherein said one or more future changes in renal status comprise one or more of a future injury to renal function, future reduced renal function, future improvement in renal function, and future acute renal failure (ARF) within 72 hours of the time at which the body fluid sample is obtained.

27. A method according to claim 5, wherein said one or more future changes in renal status comprise one or more of a future injury to renal function, future reduced renal function, future improvement in renal function, and future acute renal failure (ARF) within 48 hours of the time at which the body fluid sample is obtained.

28. A method according to claim 5, wherein said one or more future changes in renal status comprise one or more of a future injury to renal function, future reduced renal function, future improvement in renal function, and future acute renal failure (ARF) within 24 hours of the time at which the body fluid sample is obtained.

29. Use of one or more kidney injury markers selected from the group consisting of soluble CD44 antigen, Angiopoietin-1, soluble Angiopoietin-1 receptor, C-X-C chemokine motif 5, soluble Endoglin, soluble Tumor-associated calcium signal transducer 1, Erythropoietin, soluble Fractalkine, Heme oxygenase 1, soluble Interleukin-1 receptor type II, soluble Interleukin-6 receptor subunit-alpha, Lymphotoxin, Lymphotoxin-alpha, Stromelysin-1, C-C motif chemokine 22, C-C motif chemokine 5, and Thrombospondin-1 for the evaluation of renal injury.

30. Use of one or more kidney injury markers selected from the group consisting of soluble CD44 antigen, Angiopoietin-1, soluble Angiopoietin-1 receptor, C-X-C chemokine motif 5, soluble Endoglin, soluble Tumor-associated calcium signal transducer 1, Erythropoietin, soluble Fractalkine, Heme oxygenase 1, soluble Interleukin-1 receptor type II, soluble Interleukin-6 receptor subunit-alpha, Lymphotoxin, Lymphotoxin-alpha, Stromelysin-1, C-C motif chemokine 22, C-C motif chemokine 5, and Thrombospondin-1 for the evaluation of acute renal injury.

31. A method according to claim 7, wherein the increased or decreased likelihood of subsequent acute kidney injury, worsening stage of AKI, mortality, need for renal replacement therapy, need for withdrawal of renal toxins, end stage renal disease, heart failure, stroke, myocardial infarction, or chronic kidney disease assigned to the subject is a likelihood that an event of interest is more or less likely to occur within 30 days of the time at which the body fluid sample is obtained from the subject.

32. A method according to claim 7, wherein the increased or decreased likelihood of subsequent acute kidney injury, worsening stage of AKI, mortality, need for renal replacement therapy, need for withdrawal of renal toxins, end stage renal disease, heart failure, stroke, myocardial infarction, or chronic kidney disease assigned to the subject is a likelihood that an event of interest is more or less likely to occur within 72 hours of the time at which the body fluid sample is obtained from the subject.

33. A method according to claim 7, wherein the increased or decreased likelihood of subsequent acute kidney injury, worsening stage of AKI, mortality, need for renal replacement therapy, need for withdrawal of renal toxins, end stage renal disease, heart failure, stroke, myocardial infarction, or chronic kidney disease assigned to the subject is a likelihood that an event of interest is more or less likely to occur within 24 hours of the time at which the body fluid sample is obtained from the subject.

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CD44

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	98.649	79.392	98.649	125.776	98.649	147.723
average	140.403	164.709	140.403	166.894	140.403	147.723
stdev	145.611	198.361	145.611	158.170	145.611	35.040
p (t-test)		0.464		0.425		0.944
min	6.378	9.677	6.378	26.750	6.378	122.946
max	792.530	919.208	792.530	628.638	792.530	172.500
n (Samp)	101	30	101	25	101	2
n (Pat)	50	30	50	25	50	2

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	110.811	31.710	110.811	65.313	110.811	109.472
average	162.007	48.902	162.007	167.107	162.007	118.217
stdev	173.200	59.579	173.200	216.314	173.200	39.929
p (t-test)		0.033		0.926		0.663
min	6.378	9.677	6.378	22.886	6.378	83.385
max	1198.603	220.678	1198.603	666.214	1198.603	161.794
n (Samp)	169	11	169	11	169	3
n (Pat)	93	11	93	11	93	3

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	88.977	154.032	88.977	135.559	88.977	86.646
average	111.993	206.713	111.993	195.832	111.993	89.416
stdev	109.125	204.830	109.125	168.552	109.125	62.362
p (t-test)		0.004		0.006		0.650
min	6.378	17.617	6.378	38.304	6.378	9.677
max	727.823	919.208	727.823	628.638	727.823	172.500
n (Samp)	78	24	78	23	78	5
n (Pat)	38	24	38	23	38	5

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.49	0.060	101	30	0.849
24 hours	0.56	0.066	101	25	0.333
48 hours	0.67	0.213	101	2	0.436

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.18	0.049	169	11	0.000
24 hours	0.42	0.085	169	11	0.376
48 hours	0.51	0.170	169	3	0.949

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.66	0.067	78	24	0.015
24 hours	0.68	0.067	78	23	0.007
48 hours	0.47	0.131	78	5	0.791

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	48.7762	70%	26%	1			
	33.6039	80%	15%	2	0.4	0.2	0.9
	13.0853	90%	5%	3	0.9	0.5	1.6
	150	37%	70%	4	1.0	0.6	1.9
	200.731	30%	80%				

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	253.194	23%	90%				
24 hours	72.9021	72%	40%	1			
	54.021	80%	28%	2	1.0	0.4	2.4
	36.25	92%	19%	3	2.5	1.2	5.3
	150	40%	70%	4	1.0	0.4	2.4
	200.731	16%	80%				
	253.194	16%	90%				
48 hours	122.297	100%	60%	1			
	122.297	100%	60%	2	na	na	na
	122.297	100%	60%	3	na	na	na
	150	50%	70%	4	na	na	na
	200.731	0%	80%				
	253.194	0%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	13.0853	73%	4%	1			
	12.5189	82%	4%	2	0.0	0.0	na
	12.4267	91%	4%	3	1.0	0.0	55.1
	172.5	9%	70%	4	11.0	1.1	107.2
	223.707	0%	80%				
	358.889	0%	91%				
24 hours	48.7762	73%	21%	1			
	30.6818	82%	11%	2	1.5	0.3	8.6
	26.6602	91%	8%	3	0.5	0.0	10.1
	172.5	18%	70%	4	2.7	0.6	11.6
	223.707	18%	80%				
	358.889	18%	91%				
48 hours	82.75	100%	37%	1			
	82.75	100%	37%	2	na	na	na
	82.75	100%	37%	3	na	na	na
	172.5	0%	70%	4	na	na	na
	223.707	0%	80%				
	358.889	0%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	72.9021	71%	46%	1			
	59.2657	83%	35%	2	1.6	0.6	4.3
	36.25	92%	24%	3	0.7	0.2	2.7
	137.162	54%	71%	4	3.9	1.6	9.4
	160.086	50%	81%				
	206.638	42%	91%				
24 hours	92.25	74%	54%	1			
	72.9021	83%	46%	2	2.9	0.6	13.6
	54.6875	91%	32%	3	3.6	0.8	16.2
	137.162	48%	71%	4	7.2	1.8	28.7
	160.086	35%	81%				
	206.638	22%	91%				
48 hours	54.8438	80%	33%	1			
	54.8438	80%	33%	2	1.0	0.0	61.3
	9.12009	100%	3%	3	2.1	0.1	48.7
	137.162	20%	71%	4	1.1	0.0	64.9
	160.086	20%	81%				
	206.638	0%	91%				

Fig. 1 - 2

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Angiopoietin-1

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	33.854	12.369	33.854	34.091	33.854	0.548
average	55.945	33.339	55.945	521.784	55.945	60.315
stdev	66.570	45.275	66.570	2079.392	66.570	na
p (t-test)		0.095		0.029		na
min	0.548	0.548	0.548	0.548	0.548	60.315
max	292.857	157.407	292.857	10472.009	292.857	60.315
n (Samp)	96	28	96	25	96	1
n (Pat)	48	28	48	25	48	1

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	28.036	8.693	28.036	21.154	28.036	0.548
average	120.731	37.314	120.731	25.884	120.731	152.647
stdev	832.142	44.042	832.142	32.491	832.142	263.443
p (t-test)		0.752		0.707		0.947
min	0.548	0.548	0.548	0.548	0.548	0.548
max	10472.009	120.660	10472.009	113.636	10472.009	456.845
n (Samp)	158	10	158	11	158	3
n (Pat)	90	10	90	11	90	3

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	25.989	12.500	25.989	29.808	25.989	34.190
average	46.641	31.025	46.641	563.295	46.641	33.952
stdev	63.998	43.703	63.998	2166.573	63.998	29.595
p (t-test)		0.278		0.041		0.696
min	0.548	0.548	0.548	3.497	0.548	7.112
max	292.857	157.407	292.857	10472.009	292.857	60.315
n (Samp)	74	23	74	23	74	4
n (Pat)	37	23	37	23	37	4

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.38	0.057	96	28	0.029
24 hours	0.56	0.066	96	25	0.337
48 hours	0.69	0.297	96	1	0.517

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.43	0.089	158	10	0.401
24 hours	0.38	0.081	158	11	0.152
48 hours	0.37	0.147	158	3	0.374

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.43	0.067	74	23	0.317
24 hours	0.64	0.069	74	23	0.040
48 hours	0.54	0.152	74	4	0.807

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR
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Fig. 1 - 3

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0 hours	3.84615	71%	17%	1			
	0.54775	82%	11%	2	0.8	0.3	2.2
	0	100%	0%	3	2.1	1.0	4.6
	61.2691	18%	71%	4	2.5	1.2	5.3
	77.2569	14%	80%				
	167.857	0%	91%				
24 hours	12.035	72%	28%	1			
	7.86713	80%	23%	2	0.7	0.3	1.5
	2.18818	96%	14%	3	0.5	0.2	1.3
	61.2691	40%	71%	4	1.3	0.7	2.6
	77.2569	36%	80%				
	167.857	20%	91%				
48 hours	59.8958	100%	69%	1			
	59.8958	100%	69%	2	na	na	na
	59.8958	100%	69%	3	na	na	na
	61.2691	0%	71%	4	na	na	na
	77.2569	0%	80%				
	167.857	0%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	7.1116	70%	21%	1			
	4.64989	80%	20%	2	0.3	0.0	4.8
	3.84615	90%	18%	3	0.3	0.0	4.8
	59.8958	30%	70%	4	1.8	0.6	5.5
	83.3333	20%	80%				
	160.088	0%	91%				
24 hours	3.84615	73%	18%	1			
	2.18818	82%	15%	2	4.4	0.3	56.5
	0	100%	0%	3	2.1	0.1	43.7
	59.8958	9%	70%	4	4.4	0.3	56.5
	83.3333	9%	80%				
	160.088	0%	91%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	0.0	0.0	na
	59.8958	33%	70%	4	2.1	0.1	44.0
	83.3333	33%	80%				
	160.088	33%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	2.18818	78%	20%	1			
	0.54775	83%	19%	2	0.6	0.2	2.0
	0	100%	0%	3	2.0	0.8	4.7
	51.2153	22%	72%	4	1.6	0.7	4.0
	61.2691	13%	81%				
	113.636	9%	91%				
24 hours	16.4931	78%	45%	1			
	12.035	83%	36%	2	13.8	1.3	151.2
	7.86713	91%	32%	3	4.6	0.3	64.0
	51.2153	43%	72%	4	12.9	1.2	140.6
	61.2691	39%	81%				
	113.636	30%	91%				
48 hours	7.86713	75%	32%	1			
	4.64989	100%	26%	2	na	na	na
	4.64989	100%	26%	3	na	na	na
	51.2153	50%	72%	4	na	na	na
	61.2691	0%	81%				
	113.636	0%	91%				

Fig. 1 - 4

Angiotensin-1 receptor

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.028	0.014	0.028	0.040	0.028	0.009
average	0.094	0.034	0.094	0.093	0.094	0.009
stdev	0.165	0.057	0.165	0.114	0.165	0.013
p (t-test)		0.350		0.989		0.475
min	0.000	0.000	0.000	0.000	0.000	0.000
max	1.005	0.161	1.005	0.330	1.005	0.018
n (Samp)	78	7	78	12	78	2
n (Pat)	19	7	19	12	19	2

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.018	0.023	0.018	0.120	0.018	0.000
average	0.075	0.052	0.075	0.111	0.075	0.016
stdev	0.142	0.076	0.142	0.102	0.142	0.026
p (t-test)		0.744		0.548		0.470
min	0.000	0.000	0.000	0.000	0.000	0.000
max	1.005	0.161	1.005	0.272	1.005	0.046
n (Samp)	118	4	118	6	118	3
n (Pat)	26	4	26	6	26	3

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.028	0.013	0.028	0.013	0.028	0.009
average	0.099	0.013	0.099	0.059	0.099	0.009
stdev	0.179	0.012	0.179	0.107	0.179	0.013
p (t-test)		0.251		0.504		0.487
min	0.000	0.000	0.000	0.000	0.000	0.000
max	1.005	0.033	1.005	0.330	1.005	0.018
n (Samp)	60	6	60	10	60	2
n (Pat)	14	6	14	10	14	2

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.40	0.105	78	7	0.334
24 hours	0.51	0.091	78	12	0.874
48 hours	0.27	0.150	78	2	0.123

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.45	0.141	118	4	0.708
24 hours	0.63	0.125	118	6	0.307
48 hours	0.31	0.133	118	3	0.149

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.31	0.100	60	6	0.053
24 hours	0.39	0.091	60	10	0.240
48 hours	0.25	0.144	60	2	0.082

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.00919	71%	36%	1			
	0	100%	0%	2	1.1	0.0	64.1

Fig. 1 - 5

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	0	100%	0%	3	3.5	0.2	58.5
	0.08272	14%	71%	4	2.2	0.1	50.9
	0.11949	14%	81%				
	0.3234	0%	91%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.4	0.1	2.3
	0	100%	0%	3	0.2	0.0	3.0
	0.08272	42%	71%	4	1.3	0.4	3.8
	0.11949	33%	81%				
	0.3234	8%	91%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.08272	0%	71%	4	na	na	na
	0.11949	0%	81%				
	0.3234	0%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	1.0	0.0	59.6
	0	100%	0%	3	0.0	0.0	na
	0.04596	50%	70%	4	2.1	0.1	46.4
	0.09795	25%	81%				
	0.2567	0%	91%				
24 hours	0.00029	83%	22%	1			
	0.00029	83%	22%	2	0.0	0.0	na
	0	100%	0%	3	0.0	0.0	na
	0.04596	67%	70%	4	2.1	0.4	10.7
	0.09795	67%	81%				
	0.2567	17%	91%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.04596	33%	70%	4	na	na	na
	0.09795	0%	81%				
	0.2567	0%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.06685	0%	70%	4	na	na	na
	0.11949	0%	82%				
	0.3234	0%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.5	0.0	12.1
	0	100%	0%	3	1.6	0.2	10.6
	0.06685	20%	70%	4	2.5	0.4	14.1
	0.11949	20%	82%				
	0.3234	10%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.06685	0%	70%	4	na	na	na
	0.11949	0%	82%				
	0.3234	0%	90%				

Fig. 1 - 6

ENA-78 (C-X-C chemokine motif 5)

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.015	0.022	0.015	0.022	0.015	0.018
average	0.034	0.032	0.034	0.147	0.034	0.117
stdev	0.108	0.050	0.108	0.660	0.108	0.337
p (t-test)		0.906		0.010		0.006
min	0.000	0.000	0.000	0.000	0.000	0.000
max	1.460	0.324	1.460	5.180	1.460	1.530
n (Samp)	249	53	249	62	249	27
n (Pat)	104	53	104	62	104	27

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.016	0.019	0.016	0.029	0.016	0.024
average	0.060	0.027	0.060	0.066	0.060	0.035
stdev	0.300	0.035	0.300	0.108	0.300	0.044
p (t-test)		0.617		0.928		0.755
min	0.000	0.000	0.000	0.000	0.000	0.005
max	5.180	0.162	5.180	0.457	5.180	0.176
n (Samp)	441	20	441	26	441	14
n (Pat)	170	20	170	26	170	14

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.015	0.023	0.015	0.022	0.015	0.018
average	0.037	0.034	0.037	0.156	0.037	0.119
stdev	0.116	0.052	0.116	0.718	0.116	0.350
p (t-test)		0.894		0.021		0.014
min	0.000	0.000	0.000	0.000	0.000	0.000
max	1.460	0.324	1.460	5.180	1.460	1.530
n (Samp)	212	47	212	52	212	25
n (Pat)	85	47	85	52	85	25

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.57	0.045	249	53	0.127
24 hours	0.63	0.041	249	62	0.001
48 hours	0.58	0.060	249	27	0.210

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.52	0.067	441	20	0.718
24 hours	0.66	0.060	441	26	0.008
48 hours	0.61	0.081	441	14	0.185

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.59	0.047	212	47	0.061
24 hours	0.64	0.045	212	52	0.002
48 hours	0.57	0.063	212	25	0.246

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0112	72%	37%	1			
	0.00727	81%	30%	2	1.2	0.8	1.9
	0	100%	0%	3	1.5	1.0	2.2
	0.0222	47%	71%	4	1.9	1.3	2.7

Fig. 1 - 7

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	0.0299	25%	80%				
	0.0464	17%	90%				
24 hours	0.0118	71%	39%	1			
	0.00907	81%	32%	2	1.7	1.1	2.5
	0.00533	90%	21%	3	1.8	1.2	2.7
	0.0222	48%	71%	4	3.4	2.3	4.8
	0.0299	35%	80%				
	0.0464	29%	90%				
48 hours	0.0117	70%	38%	1			
	0.0093	81%	33%	2	1.8	0.8	4.2
	0.00513	93%	21%	3	2.4	1.1	5.3
	0.0222	33%	71%	4	1.8	0.8	4.2
	0.0299	26%	80%				
	0.0464	19%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0116	75%	35%	1			
	0.0106	80%	33%	2	2.1	0.7	5.7
	0.0003	90%	14%	3	2.4	0.9	6.4
	0.0254	35%	70%	4	1.3	0.4	4.3
	0.0342	20%	80%				
	0.0604	10%	90%				
24 hours	0.0213	73%	63%	1			
	0.0117	81%	35%	2	1.3	0.4	4.3
	0	100%	0%	3	2.0	0.7	5.6
	0.0254	54%	70%	4	4.7	2.0	10.9
	0.0342	46%	80%				
	0.0604	23%	90%				
48 hours	0.0182	71%	55%	1			
	0.01	86%	30%	2	3.0	0.2	42.8
	0.00953	93%	30%	3	7.3	0.8	71.3
	0.0254	50%	70%	4	3.0	0.2	42.8
	0.0342	14%	80%				
	0.0604	14%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0116	70%	35%	1			
	0.00842	81%	28%	2	1.5	0.9	2.6
	0	100%	0%	3	2.4	1.5	4.0
	0.0222	53%	71%	4	2.4	1.5	4.0
	0.0309	23%	80%				
	0.0503	13%	90%				
24 hours	0.0154	71%	52%	1			
	0.0104	81%	33%	2	1.1	0.7	1.8
	0.00663	90%	24%	3	1.9	1.2	2.8
	0.0222	48%	71%	4	2.4	1.6	3.5
	0.0309	35%	80%				
	0.0503	27%	90%				
48 hours	0.0117	72%	37%	1			
	0.0093	80%	31%	2	1.6	0.6	3.8
	0.00497	92%	18%	3	1.9	0.8	4.3
	0.0222	40%	71%	4	2.1	0.9	4.7
	0.0309	28%	80%				
	0.0503	16%	90%				

Fig. 1 - 8

Endoglin

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.018	0.004	0.018	0.052	0.018	0.004
average	0.025	0.026	0.025	0.052	0.025	0.004
stdev	0.042	0.055	0.042	0.069	0.042	na
p (t-test)		0.961		0.383		na
min	0.004	0.004	0.004	0.004	0.004	0.004
max	0.199	0.199	0.199	0.101	0.199	0.004
n (Samp)	54	13	54	2	54	1
n (Pat)	36	13	36	2	36	1

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.011	0.011	0.011	0.007	0.011	0.004
average	0.024	0.019	0.024	0.030	0.024	0.004
stdev	0.040	0.024	0.040	0.048	0.040	0.000
p (t-test)		0.759		0.765		0.476
min	0.004	0.004	0.004	0.004	0.004	0.004
max	0.199	0.064	0.199	0.101	0.199	0.004
n (Samp)	86	6	86	4	86	2
n (Pat)	60	6	60	4	60	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.018	0.004	0.018	0.011	0.018	0.004
average	0.031	0.023	0.031	0.011	0.031	0.004
stdev	0.047	0.056	0.047	0.010	0.047	na
p (t-test)		0.624		0.555		na
min	0.004	0.004	0.004	0.004	0.004	0.004
max	0.199	0.199	0.199	0.018	0.199	0.004
n (Samp)	40	12	40	2	40	1
n (Pat)	26	12	26	2	26	1

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.38	0.082	54	13	0.152
24 hours	0.54	0.214	54	2	0.846
48 hours	0.14	0.129	54	1	0.005

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.46	0.119	86	6	0.745
24 hours	0.45	0.143	86	4	0.722
48 hours	0.17	0.109	86	2	0.003

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.30	0.080	40	12	0.015
24 hours	0.34	0.179	40	2	0.383
48 hours	0.13	0.121	40	1	0.002

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR
0 hours	0	100%	0%	1		

Fig. 1 - 9

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	0	100%	0%	2	1.0	0.1	9.2
	0	100%	0%	3	1.6	0.2	10.8
	0.01838	15%	80%	4	4.5	0.9	23.0
	0.04136	15%	89%				
	0.04563	15%	91%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.01838	50%	80%	4	na	na	na
	0.04136	50%	89%				
	0.04563	50%	91%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.01838	0%	80%	4	na	na	na
	0.04136	0%	89%				
	0.04563	0%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	2.1	0.1	47.6
	0	100%	0%	3	0.0	0.0	na
	0.01838	17%	78%	4	3.3	0.2	54.3
	0.0318	17%	80%				
	0.04136	17%	91%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	3.3	0.2	54.3
	0.01838	25%	78%	4	0.0	0.0	na
	0.0318	25%	80%				
	0.04136	25%	91%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.01838	0%	78%	4	na	na	na
	0.0318	0%	80%				
	0.04136	0%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	2.2	0.1	58.1
	0	100%	0%	3	7.5	0.5	118.5
	0.01838	8%	75%	4	5.3	0.3	90.5
	0.04136	8%	88%				
	0.06434	8%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.01838	0%	75%	4	na	na	na
	0.04136	0%	88%				
	0.06434	0%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.01838	0%	75%	4	na	na	na
	0.04136	0%	88%				
	0.06434	0%	90%				

Fig. 1 - 10

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Epithelial cell-adhesion molecule

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2.423	0.801	2.423	54.474	2.423	na
average	130.527	0.774	130.527	54.474	130.527	na
stdev	664.486	0.081	664.486	53.629	664.486	na
p (t-test)		0.563		0.873		na
min	0.801	0.559	0.801	16.553	0.801	na
max	4516.667	0.801	4516.667	92.396	4516.667	na
n (Samp)	47	9	47	2	47	0
n (Pat)	30	9	30	2	30	0

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.801	0.801	0.801	66.557	0.801	0.801
average	91.074	14.918	91.074	56.578	91.074	0.801
stdev	549.646	31.566	549.646	43.448	549.646	0.000
p (t-test)		0.759		0.901		0.818
min	0.559	0.801	0.559	0.801	0.559	0.801
max	4516.667	71.384	4516.667	92.396	4516.667	0.801
n (Samp)	69	5	69	4	69	2
n (Pat)	46	5	46	4	46	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	6.151	0.801	6.151	14.148	6.151	na
average	173.588	0.774	173.588	14.148	173.588	na
stdev	779.637	0.081	779.637	3.402	779.637	na
p (t-test)		0.514		0.777		na
min	0.801	0.559	0.801	11.742	0.801	na
max	4516.667	0.801	4516.667	16.553	4516.667	na
n (Samp)	34	9	34	2	34	0
n (Pat)	20	9	20	2	20	0

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.22	0.072	47	9	0.000
24 hours	0.78	0.198	47	2	0.163
48 hours	nd	nd	47	0	nd

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.42	0.126	69	5	0.528
24 hours	0.76	0.143	69	4	0.065
48 hours	0.30	0.160	69	2	0.206

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.17	0.066	34	9	0.000
24 hours	0.57	0.219	34	2	0.737
48 hours	nd	nd	34	0	nd

Fig. 1 - 11

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sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.55915	100%	3%	1			
	0.55915	100%	3%	2	0.0	0.0	na
	0.55915	100%	3%	3	4.8	0.3	70.7
	15.4697	20%	71%	4	0.0	0.0	na
	24.7888	20%	81%				
	49.0184	20%	91%				
24 hours	39.6993	75%	90%	1			
	0.55915	100%	3%	2	na	na	na
	0.55915	100%	3%	3	na	na	na
	15.4697	75%	71%	4	na	na	na
	24.7888	75%	81%				
	49.0184	50%	91%				
48 hours	0.55915	100%	3%	1			
	0.55915	100%	3%	2	na	na	na
	0.55915	100%	3%	3	na	na	na
	15.4697	0%	71%	4	na	na	na
	24.7888	0%	81%				
	49.0184	0%	91%				

Fig. 1 - 12

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Heme oxygenase 1

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.003	0.003	0.003	0.003	0.003	0.003
average	0.054	0.043	0.054	0.104	0.054	0.003
stdev	0.109	0.090	0.109	0.347	0.109	0.000
p (t-test)		0.602		0.175		0.419
min	0.000	0.000	0.000	0.000	0.000	0.003
max	0.537	0.472	0.537	1.935	0.537	0.003
n (Samp)	122	30	122	32	122	3
n (Pat)	49	30	49	32	49	3

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.003	0.003	0.003	0.013	0.003	0.014
average	0.068	0.027	0.068	0.071	0.068	0.110
stdev	0.175	0.048	0.175	0.141	0.175	0.198
p (t-test)		0.456		0.964		0.641
min	0.000	0.000	0.000	0.003	0.000	0.003
max	1.935	0.135	1.935	0.505	1.935	0.407
n (Samp)	209	10	209	13	209	4
n (Pat)	90	10	90	13	90	4

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.003	0.003	0.003	0.003	0.003	0.003
average	0.070	0.043	0.070	0.108	0.070	0.006
stdev	0.122	0.098	0.122	0.364	0.122	0.010
p (t-test)		0.315		0.394		0.208
min	0.000	0.000	0.000	0.000	0.000	0.001
max	0.537	0.472	0.537	1.935	0.537	0.026
n (Samp)	91	24	91	29	91	6
n (Pat)	38	24	38	29	38	6

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.47	0.058	122	30	0.607
24 hours	0.50	0.057	122	32	0.954
48 hours	0.31	0.133	122	3	0.147

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.36	0.081	209	10	0.085
24 hours	0.55	0.085	209	13	0.577
48 hours	0.55	0.150	209	4	0.737

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.43	0.064	91	24	0.295
24 hours	0.45	0.061	91	29	0.454
48 hours	0.29	0.093	91	6	0.023

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.00084	83%	3%	1			

Fig. 1 - 13

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	0.00084	83%	3%	2	1.7	1.0	3.0
	2.8E-16	93%	1%	3	0.6	0.3	1.2
	0.03301	30%	73%	4	0.6	0.3	1.2
	0.08803	20%	82%				
	0.16824	3%	90%				
24 hours	0.00084	88%	3%	1			
	0.00084	88%	3%	2	0.6	0.3	1.2
	2.8E-16	97%	1%	3	0.9	0.5	1.6
	0.03301	34%	73%	4	1.0	0.6	1.8
	0.08803	16%	82%				
	0.16824	9%	90%				
48 hours	0.00084	100%	3%	1			
	0.00084	100%	3%	2	na	na	na
	0.00084	100%	3%	3	na	na	na
	0.03301	0%	73%	4	na	na	na
	0.08803	0%	82%				
	0.16824	0%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.00084	70%	5%	1			
	2.8E-16	90%	1%	2	0.5	0.0	10.0
	2.8E-16	90%	1%	3	1.0	0.1	7.6
	0.03437	20%	70%	4	2.7	0.6	11.5
	0.08803	20%	80%				
	0.16849	0%	90%				
24 hours	0.00084	100%	5%	1			
	0.00084	100%	5%	2	0.5	0.1	2.2
	0.00084	100%	5%	3	1.0	0.3	2.9
	0.03437	31%	70%	4	0.7	0.2	2.4
	0.08803	23%	80%				
	0.16849	15%	90%				
48 hours	0.00084	100%	5%	1			
	0.00084	100%	5%	2	0.0	0.0	na
	0.00084	100%	5%	3	0.5	0.0	10.0
	0.03437	25%	70%	4	0.5	0.0	9.8
	0.08803	25%	80%				
	0.16849	25%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.00084	88%	4%	1			
	0.00084	88%	4%	2	2.0	0.8	5.1
	2.8E-16	96%	1%	3	1.0	0.3	3.1
	0.05113	25%	70%	4	3.0	1.2	7.2
	0.09973	8%	80%				
	0.20032	4%	90%				
24 hours	0.00084	86%	4%	1			
	0.00084	86%	4%	2	3.3	1.4	7.7
	2.8E-16	97%	1%	3	1.3	0.5	3.7
	0.05113	28%	70%	4	3.3	1.4	7.7
	0.09973	10%	80%				
	0.20032	7%	90%				
48 hours	0.00084	83%	4%	1			
	0.00084	83%	4%	2	na	na	na
	2.8E-16	100%	1%	3	na	na	na
	0.05113	0%	70%	4	na	na	na
	0.09973	0%	80%				
	0.20032	0%	90%				

Fig. 1 - 14

Interleukin-1 receptor, type II

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	869.159	1286.617	869.159	1037.171	869.159	1410.221
average	1781.114	1941.524	1781.114	2614.262	1781.114	2692.144
stdev	3312.993	1931.851	3312.993	5248.398	3312.993	3151.432
p (t-test)		0.759		0.235		0.234
min	99.487	88.459	99.487	42.493	99.487	43.565
max	29514.673	7463.098	29514.673	34543.843	29514.673	13879.314
n (Samp)	98	47	98	53	98	23
n (Pat)	82	47	82	53	82	23

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1151.288	506.675	1151.288	682.905	1151.288	910.679
average	2087.382	1002.847	2087.382	3693.298	2087.382	1791.424
stdev	3592.231	1241.593	3592.231	10355.644	3592.231	2234.747
p (t-test)		0.231		0.127		0.787
min	43.565	117.458	43.565	42.493	43.565	187.043
max	34543.843	4625.832	34543.843	46544.423	34543.843	7323.191
n (Samp)	227	16	227	20	227	11
n (Pat)	136	16	136	20	136	11

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	865.109	1417.027	865.109	1206.361	865.109	1311.712
average	1548.213	2094.529	1548.213	2791.356	1548.213	2313.870
stdev	1824.653	1976.365	1824.653	5469.928	1824.653	3036.217
p (t-test)		0.126		0.056		0.133
min	83.202	88.459	83.202	58.099	83.202	43.565
max	11320.965	7463.098	11320.965	34543.843	11320.965	13879.314
n (Samp)	87	41	87	46	87	22
n (Pat)	68	41	68	46	68	22

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.55	0.052	98	47	0.330
24 hours	0.53	0.050	98	53	0.548
48 hours	0.61	0.068	98	23	0.109

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.34	0.063	227	16	0.014
24 hours	0.40	0.062	227	20	0.124
48 hours	0.48	0.088	227	11	0.842

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.58	0.055	87	41	0.123
24 hours	0.56	0.053	87	46	0.222
48 hours	0.57	0.070	87	22	0.326

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	569.09	70%	31%	1			
	373.394	81%	19%	2	0.5	0.3	0.9

Fig. 1 - 15

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	210.034	91%	11%	3	1.1	0.7	1.8
	1693.73	36%	70%	4	1.4	0.9	2.2
	2132.23	32%	81%				
	3945.89	17%	91%				
24 hours	512.648	72%	28%	1			
	265.191	81%	12%	2	0.5	0.3	0.8
	101.623	91%	3%	3	0.8	0.5	1.2
	1693.73	40%	70%	4	1.5	1.0	2.3
	2132.23	34%	81%				
	3945.89	15%	91%				
48 hours	780.757	74%	48%	1			
	512.648	83%	28%	2	1.0	0.3	3.1
	265.191	91%	12%	3	1.6	0.6	4.3
	1693.73	39%	70%	4	2.7	1.1	6.4
	2132.23	39%	81%				
	3945.89	30%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	211.651	75%	10%	1			
	189.296	81%	8%	2	0.7	0.1	3.6
	127.052	94%	4%	3	1.7	0.6	5.3
	1991.61	19%	70%	4	2.1	0.8	6.1
	2896	6%	80%				
	4391.64	6%	90%				
24 hours	210.034	70%	10%	1			
	164.297	80%	8%	2	0.6	0.2	1.8
	74.5128	90%	1%	3	1.0	0.4	2.3
	1991.61	25%	70%	4	1.5	0.7	3.1
	2896	20%	80%				
	4391.64	10%	90%				
48 hours	780.757	73%	42%	1			
	349.911	82%	19%	2	0.0	0.0	na
	288.07	91%	15%	3	1.7	0.6	5.3
	1991.61	27%	70%	4	1.0	0.3	4.0
	2896	18%	80%				
	4391.64	18%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	642.878	71%	39%	1			
	402.52	80%	25%	2	0.6	0.3	1.2
	210.034	90%	14%	3	1.5	0.9	2.7
	1636.33	39%	70%	4	2.0	1.1	3.5
	2132.23	34%	80%				
	3945.89	20%	91%				
24 hours	594.5	72%	36%	1			
	304.807	80%	16%	2	0.5	0.3	0.9
	125.969	91%	6%	3	0.8	0.4	1.3
	1636.33	46%	70%	4	1.8	1.1	2.8
	2132.23	39%	80%				
	3945.89	17%	91%				
48 hours	553.247	73%	32%	1			
	479.669	82%	30%	2	1.0	0.3	3.2
	210.034	91%	14%	3	2.0	0.8	5.2
	1636.33	32%	70%	4	1.9	0.7	4.9
	2132.23	32%	80%				
	3945.89	23%	91%				

Fig. 1 - 16

Interleukin-6 receptor subunit-alpha

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	610.302	922.138	610.302	946.188	610.302	590.466
average	805.761	1551.779	805.761	1545.193	805.761	1512.761
stdev	714.113	1485.995	714.113	1779.057	714.113	1849.312
p (t-test)		0.000		0.000		0.002
min	11.815	33.944	11.815	18.938	11.815	75.375
max	3306.230	5912.275	3306.230	9197.343	3306.230	6090.745
n (Samp)	117	51	117	60	117	26
n (Pat)	99	51	99	60	99	26

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	736.931	346.229	736.931	349.370	736.931	518.642
average	1206.234	704.280	1206.234	1247.865	1206.234	1181.552
stdev	1334.174	1056.784	1334.174	2115.457	1334.174	1634.133
p (t-test)		0.130		0.892		0.947
min	11.815	33.944	11.815	18.938	11.815	149.090
max	9197.343	4392.091	9197.343	9857.692	9197.343	6090.745
n (Samp)	261	17	261	23	261	14
n (Pat)	160	17	160	23	160	14

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	611.040	1255.765	611.040	1181.035	611.040	693.709
average	919.032	1713.951	919.032	1672.690	919.032	1426.171
stdev	998.852	1409.735	998.852	1848.966	998.852	1665.846
p (t-test)		0.000		0.001		0.056
min	11.815	66.079	11.815	48.776	11.815	75.375
max	6090.745	5912.275	6090.745	9197.343	6090.745	6005.696
n (Samp)	105	45	105	50	105	23
n (Pat)	84	45	84	50	84	23

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.62	0.048	117	51	0.010
24 hours	0.61	0.046	117	60	0.020
48 hours	0.54	0.064	117	26	0.518

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.33	0.059	261	17	0.003
24 hours	0.41	0.059	261	23	0.142
48 hours	0.45	0.077	261	14	0.547

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.69	0.049	105	45	0.000
24 hours	0.64	0.049	105	50	0.005
48 hours	0.54	0.068	105	23	0.522

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	484.169	71%	40%	1			
	312.153	80%	26%	2	0.8	0.5	1.3

Fig. 1 - 17

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	144.013	90%	12%	3	0.9	0.5	1.5
	895.184	51%	70%	4	2.8	1.8	4.3
	1135.97	45%	80%				
	1944.85	33%	91%				
24 hours	353.727	70%	29%	1			
	270.654	80%	22%	2	0.6	0.3	0.9
	150.155	90%	13%	3	0.9	0.6	1.4
	895.184	55%	70%	4	2.4	1.7	3.6
	1135.97	48%	80%				
	1944.85	25%	91%				
48 hours	312.153	73%	26%	1			
	204.698	81%	18%	2	0.8	0.4	1.7
	122.703	92%	10%	3	0.6	0.3	1.4
	895.184	38%	70%	4	1.1	0.6	2.2
	1135.97	31%	80%				
	1944.85	31%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	193.069	71%	15%	1			
	161.405	82%	12%	2	1.5	0.3	8.4
	55.4155	94%	3%	3	2.1	0.4	9.5
	1285.26	12%	70%	4	4.5	1.2	16.1
	1902.6	6%	80%				
	2908.65	6%	90%				
24 hours	166.041	74%	13%	1			
	117.292	83%	7%	2	0.6	0.3	1.6
	55.4155	91%	3%	3	0.3	0.1	1.2
	1285.26	26%	70%	4	2.0	1.1	3.5
	1902.6	22%	80%				
	2908.65	13%	90%				
48 hours	312.153	71%	23%	1			
	242.127	86%	17%	2	2.1	0.4	9.5
	207.852	93%	16%	3	1.0	0.1	7.5
	1285.26	21%	70%	4	3.2	0.8	12.7
	1902.6	14%	80%				
	2908.65	14%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	656.228	71%	56%	1			
	516.407	80%	44%	2	2.3	1.1	4.7
	318.912	91%	26%	3	2.4	1.2	4.9
	951.709	60%	70%	4	7.1	3.7	13.8
	1202.71	51%	80%				
	2238.21	33%	90%				
24 hours	582.607	70%	49%	1			
	346.229	80%	29%	2	1.0	0.5	1.7
	204.698	90%	18%	3	1.4	0.9	2.4
	951.709	52%	70%	4	3.4	2.1	5.5
	1202.71	50%	80%				
	2238.21	22%	90%				
48 hours	318.912	74%	26%	1			
	176.045	83%	16%	2	0.8	0.3	1.9
	122.703	91%	10%	3	0.8	0.3	1.9
	951.709	35%	70%	4	1.2	0.6	2.6
	1202.71	30%	80%				
	2238.21	26%	90%				

Fig. 1 - 18

Lymphotactin

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.002	0.002	0.002	0.002	0.002	0.002
average	0.006	0.007	0.006	0.012	0.006	0.013
stdev	0.015	0.017	0.015	0.022	0.015	0.021
p (t-test)		0.757		0.008		0.036
min	0.002	0.002	0.002	0.002	0.002	0.002
max	0.133	0.088	0.133	0.112	0.133	0.076
n (Samp)	249	53	249	62	249	27
n (Pat)	104	53	104	62	104	27

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.002	0.002	0.002	0.002	0.002	0.002
average	0.007	0.006	0.007	0.015	0.007	0.006
stdev	0.015	0.013	0.015	0.029	0.015	0.013
p (t-test)		0.712		0.009		0.888
min	0.002	0.002	0.002	0.002	0.002	0.002
max	0.133	0.054	0.133	0.112	0.133	0.048
n (Samp)	441	20	441	26	441	14
n (Pat)	170	20	170	26	170	14

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.002	0.002	0.002	0.002	0.002	0.002
average	0.006	0.007	0.006	0.011	0.006	0.014
stdev	0.015	0.018	0.015	0.019	0.015	0.022
p (t-test)		0.621		0.055		0.027
min	0.002	0.002	0.002	0.002	0.002	0.002
max	0.133	0.088	0.133	0.071	0.133	0.076
n (Samp)	212	47	212	52	212	25
n (Pat)	85	47	85	52	85	25

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.51	0.044	249	53	0.859
24 hours	0.57	0.042	249	62	0.117
48 hours	0.58	0.060	249	27	0.209

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.48	0.065	441	20	0.738
24 hours	0.57	0.060	441	26	0.273
48 hours	0.50	0.078	441	14	0.980

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.51	0.047	212	47	0.782
24 hours	0.56	0.045	212	52	0.215
48 hours	0.58	0.063	212	25	0.185

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			

Fig. 1 - 19

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	0	100%	0%	2	12.8	8.1	20.2
	0	100%	0%	3	0.0	0.0	na
	0.00151	13%	88%	4	1.2	0.6	2.3
	0.00151	13%	88%				
	0.0212	9%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	10.5	7.0	15.8
	0	100%	0%	3	0.0	0.0	na
	0.00151	24%	88%	4	2.4	1.5	3.8
	0.00151	24%	88%				
	0.0212	23%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	11.8	3.7	37.6
	0	100%	0%	3	0.0	0.0	na
	0.00151	26%	88%	4	3.8	1.0	14.2
	0.00151	26%	88%				
	0.0212	26%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	10.6	3.4	32.6
	0.00151	10%	85%	4	0.0	0.0	na
	0.00151	10%	85%				
	0.0272	10%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.00151	27%	85%	4	na	na	na
	0.00151	27%	85%				
	0.0272	19%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	6.6	2.0	21.4
	0.00151	14%	85%	4	0.0	0.0	na
	0.00151	14%	85%				
	0.0272	7%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	18.6	9.8	35.5
	0	100%	0%	3	0.0	0.0	na
	0.00151	15%	88%	4	1.8	0.8	4.2
	0.00151	15%	88%				
	0.0212	11%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	10.6	6.6	17.1
	0	100%	0%	3	0.0	0.0	na
	0.00151	23%	88%	4	2.2	1.3	3.9
	0.00151	23%	88%				
	0.0212	21%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	6.4	2.7	15.1
	0	100%	0%	3	0.0	0.0	na
	0.00151	28%	88%	4	2.5	0.9	6.7
	0.00151	28%	88%				
	0.0212	28%	90%				

Fig. 1 - 20

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Lymphotoxin-alpha

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1.630	1.980	1.630	2.905	1.630	1.990
average	2.001	2.465	2.001	2.979	2.001	2.621
stdev	1.816	2.176	1.816	2.193	1.816	2.741
p (t-test)		0.105		0.000		0.113
min	0.182	0.182	0.182	0.182	0.182	0.182
max	13.300	7.840	13.300	9.340	13.300	9.230
n (Samp)	249	53	249	62	249	27
n (Pat)	104	53	104	62	104	27

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1.750	2.040	1.750	3.160	1.750	1.715
average	2.159	2.807	2.159	3.135	2.159	2.103
stdev	1.967	3.337	1.967	2.014	1.967	2.487
p (t-test)		0.166		0.014		0.917
min	0.182	0.182	0.182	0.182	0.182	0.182
max	13.300	15.500	13.300	9.340	13.300	9.040
n (Samp)	441	20	441	26	441	14
n (Pat)	170	20	170	26	170	14

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1.680	1.980	1.680	2.630	1.680	1.990
average	2.002	2.414	2.002	3.075	2.002	2.585
stdev	1.793	2.262	1.793	2.416	1.793	2.411
p (t-test)		0.177		0.000		0.141
min	0.182	0.182	0.182	0.182	0.182	0.182
max	13.300	7.840	13.300	11.300	13.300	9.230
n (Samp)	212	47	212	52	212	25
n (Pat)	85	47	85	52	85	25

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.55	0.044	249	53	0.261
24 hours	0.64	0.041	249	62	0.001
48 hours	0.54	0.060	249	27	0.524

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.55	0.068	441	20	0.491
24 hours	0.66	0.060	441	26	0.007
48 hours	0.46	0.076	441	14	0.562

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.53	0.047	212	47	0.475
24 hours	0.64	0.045	212	52	0.002
48 hours	0.56	0.063	212	25	0.329

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	0.7	0.4	1.0
	0	100%	0%	3	0.5	0.3	0.8

Fig. 1 - 21

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	2.56	42%	71%	4	1.7	1.2	2.2
	3.32	34%	81%				
	4.3	19%	90%				
24 hours	1.44	71%	44%	1			
	1	81%	34%	2	1.5	1.0	2.2
	0	100%	0%	3	1.1	0.7	1.7
	2.56	52%	71%	4	3.5	2.5	5.0
	3.32	44%	81%				
	4.3	32%	90%				
48 hours	0.919	70%	33%	1			
	0	100%	0%	2	1.0	0.5	2.0
	0	100%	0%	3	1.2	0.6	2.3
	2.56	37%	71%	4	1.4	0.7	2.6
	3.32	30%	81%				
	4.3	22%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	1.41	70%	42%	1			
	1.19	80%	34%	2	1.0	0.4	2.8
	0	100%	0%	3	1.5	0.7	3.6
	2.81	35%	70%	4	1.5	0.6	3.5
	3.41	20%	80%				
	4.6	15%	90%				
24 hours	1.84	73%	51%	1			
	1.33	81%	41%	2	1.7	0.6	5.0
	0	100%	0%	3	2.0	0.7	5.6
	2.81	58%	70%	4	4.3	1.8	10.1
	3.41	42%	80%				
	4.6	19%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	0.7	0.2	2.4
	0	100%	0%	3	0.2	0.0	2.9
	2.81	29%	70%	4	1.5	0.7	3.6
	3.41	21%	80%				
	4.6	7%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	0.2	0.1	0.4
	0	100%	0%	3	0.4	0.3	0.6
	2.56	45%	70%	4	1.0	0.7	1.3
	3.32	34%	81%				
	4.18	17%	90%				
24 hours	1.44	71%	43%	1			
	0.768	81%	28%	2	1.3	0.8	2.0
	0	100%	0%	3	1.0	0.6	1.7
	2.56	50%	70%	4	3.4	2.3	5.0
	3.32	44%	81%				
	4.18	35%	90%				
48 hours	1.28	72%	37%	1			
	0.93	80%	31%	2	1.2	0.6	2.7
	0	100%	0%	3	1.5	0.7	3.1
	2.56	40%	70%	4	1.4	0.7	3.0
	3.32	28%	81%				
	4.18	20%	90%				

Fig. 1 - 22

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Matrix metalloproteinase-3

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.027	0.031	0.027	0.034	0.027	0.014
average	0.166	0.059	0.166	0.877	0.166	0.121
stdev	1.087	0.090	1.087	6.215	1.087	0.406
p (t-test)		0.473		0.088		0.829
min	0.001	0.001	0.001	0.001	0.001	0.001
max	16.700	0.516	16.700	49.000	16.700	2.130
n (Samp)	249	53	249	62	249	27
n (Pat)	104	53	104	62	104	27

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.030	0.031	0.030	0.034	0.030	0.028
average	0.249	0.070	0.249	0.093	0.249	0.056
stdev	2.481	0.117	2.481	0.220	2.481	0.077
p (t-test)		0.748		0.750		0.772
min	0.001	0.001	0.001	0.001	0.001	0.001
max	49.000	0.516	49.000	1.130	49.000	0.280
n (Samp)	441	20	441	26	441	14
n (Pat)	170	20	170	26	170	14

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.023	0.034	0.023	0.042	0.023	0.032
average	0.172	0.059	0.172	1.022	0.172	0.156
stdev	1.172	0.075	1.172	6.786	1.172	0.427
p (t-test)		0.509		0.085		0.946
min	0.001	0.001	0.001	0.001	0.001	0.001
max	16.700	0.404	16.700	49.000	16.700	2.130
n (Samp)	212	47	212	52	212	25
n (Pat)	85	47	85	52	85	25

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.55	0.044	249	53	0.223
24 hours	0.54	0.042	249	62	0.358
48 hours	0.46	0.057	249	27	0.502

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.52	0.067	441	20	0.728
24 hours	0.52	0.059	441	26	0.684
48 hours	0.50	0.078	441	14	0.988

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.59	0.047	212	47	0.047
24 hours	0.58	0.045	212	52	0.085
48 hours	0.55	0.062	212	25	0.438

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0203	75%	41%	1			
	0.00967	83%	27%	2	1.4	0.9	2.1
	0	100%	0%	3	2.0	1.3	3.0

Fig. 1 - 23

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	0.047	38%	70%	4	2.0	1.3	2.9
	0.0757	19%	80%				
	0.213	4%	91%				
24 hours	0.0163	71%	37%	1			
	0	100%	0%	2	0.6	0.4	0.8
	0	100%	0%	3	1.1	0.8	1.4
	0.047	37%	70%	4	1.2	0.9	1.6
	0.0757	26%	80%				
	0.213	10%	91%				
48 hours	0.0074	74%	22%	1			
	0	100%	0%	2	0.3	0.1	0.9
	0	100%	0%	3	0.6	0.3	1.2
	0.047	30%	70%	4	1.4	0.9	2.4
	0.0757	22%	80%				
	0.213	7%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0203	70%	38%	1			
	0.0121	80%	27%	2	1.0	0.4	2.8
	0	100%	0%	3	1.8	0.8	4.0
	0.0525	30%	70%	4	1.3	0.5	3.1
	0.0773	15%	80%				
	0.169	15%	90%				
24 hours	0.0149	73%	31%	1			
	0.0074	81%	21%	2	0.4	0.2	1.1
	0	100%	0%	3	1.3	0.8	2.2
	0.0525	31%	70%	4	1.0	0.5	1.8
	0.0773	23%	80%				
	0.169	12%	90%				
48 hours	0.0151	71%	31%	1			
	0.0074	86%	21%	2	0.7	0.2	2.4
	0	100%	0%	3	1.0	0.4	2.8
	0.0525	29%	70%	4	0.8	0.2	2.4
	0.0773	21%	80%				
	0.169	7%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0239	70%	52%	1			
	0.0149	81%	37%	2	1.5	0.9	2.6
	0	100%	0%	3	2.2	1.4	3.7
	0.0462	43%	71%	4	2.7	1.7	4.3
	0.0654	32%	80%				
	0.18	6%	90%				
24 hours	0.0199	71%	44%	1			
	0	100%	0%	2	0.6	0.4	1.0
	0	100%	0%	3	1.3	0.9	1.9
	0.0462	42%	71%	4	1.6	1.1	2.2
	0.0654	29%	80%				
	0.18	10%	90%				
48 hours	0.00783	76%	25%	1			
	0.0074	80%	25%	2	1.0	0.5	2.1
	0	100%	0%	3	0.6	0.3	1.6
	0.0462	36%	71%	4	1.6	0.8	2.9
	0.0654	36%	80%				
	0.18	20%	90%				

Fig. 1 - 24

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Rantes (C-C motif chemokine 5)

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.008	0.009	0.008	0.010	0.008	0.009
average	0.017	0.011	0.017	0.024	0.017	0.011
stdev	0.067	0.008	0.067	0.087	0.067	0.008
p (t-test)		0.472		0.469		0.615
min	0.000	0.002	0.000	0.002	0.000	0.002
max	0.878	0.053	0.878	0.682	0.878	0.036
n (Samp)	249	53	249	62	249	27
n (Pat)	104	53	104	62	104	27

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.009	0.007	0.009	0.010	0.009	0.008
average	0.016	0.011	0.016	0.013	0.016	0.012
stdev	0.060	0.012	0.060	0.014	0.060	0.010
p (t-test)		0.721		0.766		0.780
min	0.000	0.002	0.000	0.002	0.000	0.003
max	0.878	0.053	0.878	0.072	0.878	0.036
n (Samp)	441	20	441	26	441	14
n (Pat)	170	20	170	26	170	14

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.008	0.009	0.008	0.010	0.008	0.009
average	0.020	0.010	0.020	0.026	0.020	0.011
stdev	0.072	0.004	0.072	0.095	0.072	0.008
p (t-test)		0.354		0.567		0.550
min	0.000	0.004	0.000	0.002	0.000	0.002
max	0.878	0.028	0.878	0.682	0.878	0.036
n (Samp)	212	47	212	52	212	25
n (Pat)	85	47	85	52	85	25

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.55	0.044	249	53	0.306
24 hours	0.59	0.042	249	62	0.035
48 hours	0.55	0.060	249	27	0.407

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.44	0.063	441	20	0.306
24 hours	0.55	0.060	441	26	0.400
48 hours	0.49	0.078	441	14	0.858

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.55	0.047	212	47	0.248
24 hours	0.60	0.045	212	52	0.025
48 hours	0.54	0.062	212	25	0.476

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.00664	72%	35%	1			
	0.00558	81%	25%	2	0.9	0.6	1.3

Fig. 1 - 25

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	0.00485	91%	20%	3	1.7	1.2	2.3
	0.0102	36%	70%	4	1.0	0.7	1.5
	0.0122	19%	80%				
	0.0154	9%	91%				
24 hours	0.00771	71%	45%	1			
	0.0071	81%	37%	2	1.2	0.8	1.9
	0.00435	90%	16%	3	2.6	1.9	3.7
	0.0102	45%	70%	4	2.0	1.4	2.9
	0.0122	21%	80%				
	0.0154	16%	91%				
48 hours	0.00717	70%	38%	1			
	0.00613	81%	31%	2	1.0	0.4	2.3
	0.00317	93%	8%	3	2.2	1.1	4.2
	0.0102	33%	70%	4	1.4	0.7	3.0
	0.0122	26%	80%				
	0.0154	7%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.00537	70%	21%	1			
	0.00478	80%	17%	2	0.6	0.2	1.8
	0.00399	90%	12%	3	0.8	0.3	2.0
	0.0109	25%	70%	4	1.7	0.8	3.3
	0.0126	25%	80%				
24 hours	0.0154	15%	90%				
	0.00523	73%	20%	1			
	0.00488	81%	18%	2	0.4	0.1	0.9
	0.00293	92%	7%	3	0.6	0.3	1.2
	0.0109	42%	70%	4	1.3	0.8	2.0
48 hours	0.0126	31%	80%				
	0.0154	23%	90%				
	0.00666	71%	30%	1			
	0.00642	86%	28%	2	2.0	0.5	9.2
	0.00454	93%	15%	3	3.1	0.8	11.9
	0.0109	21%	70%	4	1.0	0.1	7.4
	0.0126	14%	80%				
	0.0154	14%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.00718	70%	39%	1			
	0.00664	81%	34%	2	1.6	1.0	2.6
	0.00523	91%	23%	3	2.3	1.5	3.6
	0.0108	34%	70%	4	1.4	0.9	2.3
	0.0127	17%	80%				
24 hours	0.0242	2%	90%				
	0.00823	71%	52%	1			
	0.00753	81%	42%	2	2.5	1.4	4.2
	0.00601	90%	28%	3	4.3	2.6	7.2
	0.0108	35%	70%	4	2.5	1.4	4.2
48 hours	0.0127	17%	80%				
	0.0242	6%	90%				
	0.00717	72%	38%	1			
	0.00648	80%	32%	2	1.3	0.5	3.3
	0.00478	92%	17%	3	2.5	1.1	5.4
	0.0108	32%	70%	4	1.8	0.8	4.2
	0.0127	24%	80%				
	0.0242	8%	90%				

Fig. 1 - 26

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Thrombospondin-1

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	6.821	5.701	6.821	0.828	6.821	0.828
average	20.005	8.163	20.005	3.622	20.005	5.484
stdev	61.809	6.933	61.809	na	61.809	na
p (t-test)		0.495		na		na
min	0.828	0.828	0.828	3.622	0.828	5.484
max	435.086	26.296	435.086	3.622	435.086	5.484
n (Samp)	54	13	54	1	54	1
n (Pat)	36	13	36	1	36	1

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	6.666	6.153	6.666	7.511	6.666	4.494
average	15.699	13.105	15.699	12.209	15.699	4.494
stdev	49.279	14.090	49.279	11.668	49.279	1.280
p (t-test)		0.898		0.903		0.750
min	0.828	2.380	0.828	3.622	0.828	3.590
max	435.086	35.262	435.086	25.493	435.086	5.399
n (Samp)	86	6	86	3	86	2
n (Pat)	60	6	60	3	60	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	3.891	6.757	3.891	3.002	3.891	0.828
average	8.657	8.327	8.657	3.002	8.657	5.484
stdev	15.127	6.174	15.127	0.876	15.127	na
p (t-test)		0.942		0.604		na
min	0.828	0.828	0.828	2.383	0.828	5.484
max	93.490	22.485	93.490	3.622	93.490	5.484
n (Samp)	40	12	40	2	40	1
n (Pat)	26	12	26	2	26	1

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.52	0.090	54	13	0.856
24 hours	0.41	0.270	54	1	0.732
48 hours	0.48	0.290	54	1	0.949

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.53	0.124	86	6	0.821
24 hours	0.60	0.176	86	3	0.575
48 hours	0.38	0.184	86	2	0.506

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.61	0.097	40	12	0.267
24 hours	0.36	0.184	40	2	0.456
48 hours	0.55	0.303	40	1	0.869

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.58953	85%	41%	1			
	3.58953	85%	41%	2	2.9	0.5	15.6

Fig. 1 - 27

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	2.08132	92%	22%	3	1.5	0.2	10.2
	9.58807	23%	70%	4	1.5	0.2	10.2
	13.4448	15%	81%				
	25.8224	8%	91%				
24 hours	3.58953	100%	41%	1			
	3.58953	100%	41%	2	na	na	na
	3.58953	100%	41%	3	na	na	na
	9.58807	0%	70%	4	na	na	na
	13.4448	0%	81%				
	25.8224	0%	91%				
48 hours	4.55298	100%	48%	1			
	4.55298	100%	48%	2	na	na	na
	4.55298	100%	48%	3	na	na	na
	9.58807	0%	70%	4	na	na	na
	13.4448	0%	81%				
	25.8224	0%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	2.37997	83%	16%	1			
	2.37997	83%	16%	2	0.5	0.0	10.8
	2.08132	100%	16%	3	0.5	0.0	10.8
	10.1744	33%	71%	4	1.0	0.1	8.6
	11.7188	33%	80%				
	21.7226	33%	91%				
24 hours	3.58953	100%	33%	1			
	3.58953	100%	33%	2	na	na	na
	3.58953	100%	33%	3	na	na	na
	10.1744	33%	71%	4	na	na	na
	11.7188	33%	80%				
	21.7226	33%	91%				
48 hours	3.28789	100%	29%	1			
	3.28789	100%	29%	2	na	na	na
	3.28789	100%	29%	3	na	na	na
	10.1744	0%	71%	4	na	na	na
	11.7188	0%	80%				
	21.7226	0%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.93212	75%	55%	1			
	3.58953	92%	48%	2	3.6	0.2	70.4
	3.58953	92%	48%	3	7.5	0.5	118.5
	8.52273	25%	70%	4	3.6	0.2	70.4
	9.0843	25%	80%				
	13.4448	17%	90%				
24 hours	2.08132	100%	25%	1			
	2.08132	100%	25%	2	na	na	na
	2.08132	100%	25%	3	na	na	na
	8.52273	0%	70%	4	na	na	na
	9.0843	0%	80%				
	13.4448	0%	90%				
48 hours	3.93212	100%	55%	1			
	3.93212	100%	55%	2	na	na	na
	3.93212	100%	55%	3	na	na	na
	8.52273	0%	70%	4	na	na	na
	9.0843	0%	80%				
	13.4448	0%	90%				

Fig. 1 - 28

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ENA-78 (C-X-C chemokine motif 5)

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.016	0.020	0.016	0.024	0.016	0.021
average	0.041	0.028	0.041	0.269	0.041	0.090
stdev	0.129	0.033	0.129	0.931	0.129	0.233
p (t-test)		0.609		0.000		0.133
min	0.000	0.000	0.000	0.000	0.000	0.000
max	1.530	0.128	1.530	5.180	1.530	0.965
n (Samp)	419	27	419	36	419	18
n (Pat)	164	27	164	36	164	18

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.017	0.022	0.017	0.039	0.017	0.027
average	0.056	0.052	0.056	0.095	0.056	0.084
stdev	0.278	0.063	0.278	0.142	0.278	0.126
p (t-test)		0.973		0.674		0.794
min	0.000	0.012	0.000	0.000	0.000	0.010
max	5.180	0.162	5.180	0.457	5.180	0.359
n (Samp)	518	5	518	9	518	7
n (Pat)	199	5	199	9	199	7

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.017	0.021	0.017	0.022	0.017	0.021
average	0.047	0.028	0.047	0.297	0.047	0.079
stdev	0.141	0.034	0.141	1.018	0.141	0.237
p (t-test)		0.503		0.000		0.391
min	0.000	0.000	0.000	0.000	0.000	0.000
max	1.530	0.128	1.530	5.180	1.530	0.965
n (Samp)	352	26	352	30	352	16
n (Pat)	133	26	133	30	133	16

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.54	0.059	419	27	0.464
24 hours	0.64	0.051	419	36	0.007
48 hours	0.57	0.072	419	18	0.350

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.68	0.133	518	5	0.188
24 hours	0.73	0.096	518	9	0.015
48 hours	0.72	0.110	518	7	0.047

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.52	0.059	352	26	0.777
24 hours	0.60	0.057	352	30	0.068
48 hours	0.55	0.076	352	16	0.521

Fig. 2 - 1

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sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0116	70%	35%	1			
	0.00835	81%	26%	2	1.2	0.6	2.6
	0	100%	0%	3	2.1	1.1	3.9
	0.0248	26%	71%	4	1.2	0.6	2.6
	0.0338	19%	80%				
	0.0581	11%	90%				
24 hours	0.0154	72%	49%	1			
	0.0117	81%	36%	2	0.8	0.4	1.7
	0.0059	92%	20%	3	1.7	1.0	3.0
	0.0248	44%	71%	4	2.7	1.6	4.4
	0.0338	36%	80%				
	0.0581	25%	90%				
48 hours	0.0131	72%	41%	1			
	0.01	83%	31%	2	1.3	0.4	4.4
	0	100%	0%	3	2.1	0.7	5.7
	0.0248	39%	71%	4	1.7	0.6	5.0
	0.0338	17%	80%				
	0.0581	11%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0202	80%	58%	1			
	0.0202	80%	58%	2	na	na	na
	0.0116	100%	34%	3	na	na	na
	0.0257	40%	70%	4	na	na	na
	0.0351	40%	81%				
	0.0662	20%	90%				
24 hours	0.0235	78%	67%	1			
	0.0197	89%	57%	2	0.0	0.0	na
	0	100%	0%	3	3.0	0.2	42.5
	0.0257	56%	70%	4	5.1	0.5	55.4
	0.0351	56%	81%				
	0.0662	33%	90%				
48 hours	0.0269	71%	72%	1			
	0.0213	86%	61%	2	na	na	na
	0.01	100%	30%	3	na	na	na
	0.0257	71%	70%	4	na	na	na
	0.0351	29%	81%				
	0.0662	29%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0086	73%	25%	1			
	0.00759	81%	23%	2	0.5	0.2	1.2
	0	100%	0%	3	1.5	0.9	2.5
	0.0259	27%	70%	4	0.7	0.3	1.4
	0.0357	15%	80%				
	0.0704	12%	90%				
24 hours	0.0154	70%	47%	1			

Fig. 2 - 2

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48 hours	0.0117	80%	35%	2	1.0	0.4	2.3
	0.0059	93%	18%	3	2.1	1.1	4.0
	0.0259	40%	70%	4	2.1	1.1	3.9
	0.0357	27%	80%				
	0.0704	20%	90%				
	0.0131	75%	40%	1			
	0.0104	81%	30%	2	1.3	0.4	4.4
	0	100%	0%	3	1.7	0.6	5.1
	0.0259	38%	70%	4	1.3	0.4	4.4
	0.0357	19%	80%				
	0.0704	6%	90%				

Fig. 2 - 3

Endoglin

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.015	0.004	0.015	0.052	0.015	0.004
average	0.024	0.008	0.024	0.077	0.024	0.004
stdev	0.036	0.013	0.036	0.093	0.036	0.000
p (t-test)		0.238		0.011		0.437
min	0.004	0.004	0.004	0.004	0.004	0.004
max	0.199	0.041	0.199	0.199	0.199	0.004
n (Samp)	78	8	78	4	78	2
n (Pat)	56	8	56	4	56	2

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.011	0.004	0.011	0.052	0.011	0.004
average	0.023	0.018	0.023	0.052	0.023	0.004
stdev	0.038	na	0.038	0.069	0.038	0.000
p (t-test)		na		0.285		0.478
min	0.004	0.018	0.004	0.004	0.004	0.004
max	0.199	0.018	0.199	0.101	0.199	0.004
n (Samp)	96	1	96	2	96	2
n (Pat)	69	1	69	2	69	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.018	0.004	0.018	0.101	0.018	0.004
average	0.027	0.008	0.027	0.101	0.027	0.004
stdev	0.039	0.013	0.039	0.138	0.039	na
p (t-test)		0.198		0.019		na
min	0.004	0.004	0.004	0.004	0.004	0.004
max	0.199	0.041	0.199	0.199	0.199	0.004
n (Samp)	61	8	61	2	61	1
n (Pat)	43	8	43	2	43	1

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.23	0.072	78	8	0.000
24 hours	0.56	0.153	78	4	0.698
48 hours	0.14	0.092	78	2	0.000

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.67	0.300	96	1	0.567
24 hours	0.57	0.213	96	2	0.760
48 hours	0.17	0.107	96	2	0.002

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.22	0.072	61	8	0.000
24 hours	0.56	0.215	61	2	0.775
48 hours	0.13	0.122	61	1	0.002

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR
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Fig. 2 - 4

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0 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	0.0	0.0	na
	0.01838	13%	77%	4	10.5	0.9	124.6
	0.04136	0%	90%				
	0.04563	0%	91%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	0.0	0.0	na
	0.01838	50%	77%	4	0.9	0.1	8.3
	0.04136	50%	90%				
	0.04563	50%	91%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.01838	0%	77%	4	na	na	na
	0.04136	0%	90%				
	0.04563	0%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	5.2	0.3	79.1
	0.01838	13%	74%	4	3.6	0.2	64.2
	0.04136	0%	90%				
	0.04136	0%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	0.0	0.0	na
	0.01838	50%	74%	4	0.9	0.0	61.7
	0.04136	50%	90%				
	0.04136	50%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.01838	0%	74%	4	na	na	na
	0.04136	0%	90%				
	0.04136	0%	90%				

Fig. 2 - 5

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Erythropoietin

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	7.240	0.664	7.240	0.664	7.240	0.664
average	152.061	53.804	152.061	48.681	152.061	33.237
stdev	584.092	118.970	584.092	121.519	584.092	72.935
p (t-test)		0.384		0.290		0.389
min	0.664	0.664	0.664	0.664	0.664	0.664
max	9340.000	544.000	9340.000	621.000	9340.000	297.000
n (Samp)	419	27	419	36	419	18
n (Pat)	164	27	164	36	164	18

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.664	0.664	0.664	0.664	0.664	0.664
average	132.253	0.664	132.253	40.720	132.253	15.416
stdev	529.043	0.000	529.043	77.820	529.043	36.692
p (t-test)		0.579		0.604		0.560
min	0.664	0.664	0.664	0.664	0.664	0.664
max	9340.000	0.664	9340.000	229.000	9340.000	98.500
n (Samp)	518	5	518	9	518	7
n (Pat)	199	5	199	9	199	7

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	4.840	0.664	4.840	0.664	4.840	0.664
average	166.814	55.848	166.814	46.268	166.814	45.125
stdev	631.497	120.842	631.497	127.923	631.497	89.605
p (t-test)		0.372		0.298		0.442
min	0.664	0.664	0.664	0.664	0.664	0.664
max	9340.000	544.000	9340.000	621.000	9340.000	297.000
n (Samp)	352	26	352	30	352	16
n (Pat)	133	26	133	30	133	16

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.43	0.054	419	27	0.175
24 hours	0.38	0.045	419	36	0.008
48 hours	0.40	0.063	419	18	0.106

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.26	0.091	518	5	0.009
24 hours	0.43	0.092	518	9	0.453
48 hours	0.38	0.097	518	7	0.206

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.43	0.056	352	26	0.239
24 hours	0.36	0.048	352	30	0.003
48 hours	0.41	0.068	352	16	0.180

Fig. 2 - 6

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sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	0.8	0.3	2.0
	0	100%	0%	3	0.2	0.0	2.1
	64.5	22%	70%	4	3.9	2.2	6.7
	126	15%	80%				
	344	4%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.5	0.2	1.3
	0	100%	0%	3	0.5	0.2	1.3
	64.5	22%	70%	4	4.9	3.1	7.6
	126	11%	80%				
	344	3%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	2.1	0.5	9.3
	0	100%	0%	3	0.0	0.0	na
	64.5	17%	70%	4	6.7	2.0	21.8
	126	6%	80%				
	344	0%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	49.5	0%	70%	4	na	na	na
	116	0%	80%				
	302	0%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.5	0.0	9.7
	0	100%	0%	3	0.0	0.0	na
	49.5	22%	70%	4	3.1	0.8	11.9
	116	11%	80%				
	302	0%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	1.0	0.0	52.3
	0	100%	0%	3	0.0	0.0	na
	49.5	14%	70%	4	5.2	0.5	56.3
	116	0%	80%				
	302	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	1.0	0.4	2.3
	0	100%	0%	3	1.9	1.0	3.6
	62.4	23%	70%	4	1.4	0.7	3.0
	135	12%	80%				
	384	4%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.5	0.1	2.2
	0	100%	0%	3	1.3	0.5	3.2

Fig. 2 - 7

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48 hours	62.4	20%	70%	4	5.8	3.0	10.9
	135	10%	80%				
	384	3%	90%				
	0	100%	0%	1			
	0	100%	0%	2	1.5	0.3	8.1
	0	100%	0%	3	0.0	0.0	na
	62.4	19%	70%	4	6.1	1.8	20.4
	135	13%	80%				
	384	0%	90%				

Fig. 2 - 8

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Fractalkine

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1.602	1.496	1.602	1.188	1.602	3.313
average	1.922	1.429	1.922	2.230	1.922	2.874
stdev	1.576	0.840	1.576	2.563	1.576	2.358
p (t-test)		0.354		0.466		0.305
min	0.004	0.313	0.004	0.187	0.004	0.327
max	7.811	2.682	7.811	10.657	7.811	4.981
n (Samp)	163	9	163	18	163	3
n (Pat)	89	9	89	18	89	3

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1.602	0.004	1.602	4.578	1.602	2.332
average	2.021	4.398	2.021	4.118	2.021	2.332
stdev	1.718	na	1.718	2.420	1.718	1.387
p (t-test)		na		0.017		0.799
min	0.004	4.398	0.004	0.889	0.004	1.351
max	10.657	4.398	10.657	6.429	10.657	3.313
n (Samp)	195	1	195	4	195	2
n (Pat)	109	1	109	4	109	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1.602	1.496	1.602	1.188	1.602	4.981
average	1.891	1.429	1.891	2.034	1.891	3.572
stdev	1.546	0.840	1.546	2.542	1.546	2.819
p (t-test)		0.377		0.750		0.070
min	0.004	0.313	0.004	0.187	0.004	0.327
max	7.811	2.682	7.811	10.657	7.811	5.408
n (Samp)	129	9	129	16	129	3
n (Pat)	70	9	70	16	70	3

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.44	0.094	163	9	0.504
24 hours	0.50	0.072	163	18	0.989
48 hours	0.63	0.175	163	3	0.458

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.89	0.213	195	1	0.066
24 hours	0.78	0.137	195	4	0.039
48 hours	0.62	0.214	195	2	0.564

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.44	0.095	129	9	0.528
24 hours	0.47	0.075	129	16	0.686
48 hours	0.69	0.173	129	3	0.278

Fig. 2 - 9

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sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.87652	78%	36%	1			
	0.39106	89%	15%	2	na	na	na
	0.24965	100%	11%	3	na	na	na
	2.69931	0%	71%	4	na	na	na
	3.17568	0%	80%				
	4.18919	0%	90%				
24 hours	0.64433	72%	27%	1			
	0.34392	83%	13%	2	0.3	0.1	1.3
	0.1868	94%	10%	3	1.0	0.5	2.2
	2.69931	33%	71%	4	0.7	0.3	1.6
	3.17568	22%	80%				
	4.18919	11%	90%				
48 hours	0.3125	100%	12%	1			
	0.3125	100%	12%	2	0.0	0.0	na
	0.3125	100%	12%	3	0.0	0.0	na
	2.69931	67%	71%	4	2.0	0.1	41.7
	3.17568	67%	80%				
	4.18919	33%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.87652	78%	36%	1			
	0.3875	89%	15%	2	na	na	na
	0.24965	100%	11%	3	na	na	na
	2.61044	22%	71%	4	na	na	na
	3.19703	0%	81%				
	4.07631	0%	91%				
24 hours	0.6125	75%	26%	1			
	0.34392	81%	14%	2	0.8	0.2	2.6
	0.1868	94%	10%	3	1.3	0.5	3.6
	2.61044	25%	71%	4	1.0	0.3	3.1
	3.19703	13%	81%				
	4.07631	6%	91%				
48 hours	0.3125	100%	12%	1			
	0.3125	100%	12%	2	0.0	0.0	na
	0.3125	100%	12%	3	0.0	0.0	na
	2.61044	67%	71%	4	2.1	0.1	44.2
	3.19703	67%	81%				
	4.07631	67%	91%				

Fig. 2 - 10

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Interleukin-1 receptor, type II

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1013.458	1053.613	1013.458	965.043	1013.458	406.925
average	1947.934	1518.224	1947.934	2611.717	1947.934	1456.124
stdev	2953.653	1427.130	2953.653	6239.267	2953.653	1882.866
p (t-test)		0.521		0.330		0.501
min	74.513	65.754	74.513	42.493	74.513	43.565
max	29514.673	4575.254	29514.673	34543.843	29514.673	5822.436
n (Samp)	211	20	211	31	211	17
n (Pat)	135	20	135	31	135	17

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	983.343	1595.879	983.343	1472.399	983.343	244.708
average	1962.008	1595.879	1962.008	7879.384	1962.008	1247.788
stdev	3361.423	1296.151	3361.423	17091.986	3361.423	2264.950
p (t-test)		0.878		0.000		0.605
min	43.565	679.362	43.565	42.493	43.565	77.362
max	34543.843	2512.397	34543.843	46544.423	34543.843	5822.436
n (Samp)	275	2	275	7	275	6
n (Pat)	160	2	160	7	160	6

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1228.267	1053.613	1228.267	712.138	1228.267	590.665
average	2020.859	1506.585	2020.859	2716.006	2020.859	1445.459
stdev	2565.834	1430.724	2565.834	6678.504	2565.834	1597.178
p (t-test)		0.380		0.318		0.379
min	74.513	65.754	74.513	58.099	74.513	43.565
max	16156.572	4575.254	16156.572	34543.843	16156.572	5017.737
n (Samp)	183	20	183	27	183	16
n (Pat)	110	20	110	27	110	16

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.48	0.067	211	20	0.795
24 hours	0.45	0.054	211	31	0.351
48 hours	0.39	0.066	211	17	0.102

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.58	0.212	275	2	0.706
24 hours	0.55	0.113	275	7	0.685
48 hours	0.29	0.091	275	6	0.024

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.46	0.066	183	20	0.541
24 hours	0.42	0.056	183	27	0.154
48 hours	0.41	0.070	183	16	0.198

Fig. 2 - 11

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sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	659.5	70%	38%	1			
	414.687	80%	22%	2	1.0	0.4	2.4
	179.864	90%	8%	3	1.0	0.4	2.4
	1968.17	25%	70%	4	1.0	0.4	2.4
	2678.52	20%	80%				
	4295	10%	90%				
24 hours	334.433	71%	17%	1			
	265.191	81%	13%	2	0.6	0.3	1.2
	83.2021	90%	1%	3	0.4	0.2	0.9
	1968.17	32%	70%	4	1.4	0.9	2.3
	2678.52	26%	80%				
	4295	10%	90%				
48 hours	334.433	71%	17%	1			
	176.85	82%	8%	2	0.5	0.1	2.3
	74.5128	94%	0%	3	0.5	0.1	2.3
	1968.17	24%	70%	4	2.5	1.1	5.4
	2678.52	24%	80%				
	4295	18%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	661.163	100%	40%	1			
	661.163	100%	40%	2	na	na	na
	661.163	100%	40%	3	na	na	na
	1810.08	50%	70%	4	na	na	na
	2730.24	0%	80%				
	4361.49	0%	90%				
24 hours	1013.46	71%	52%	1			
	115.527	86%	4%	2	0.0	0.0	na
	0	100%	0%	3	1.0	0.1	7.5
	1810.08	43%	70%	4	1.5	0.3	8.1
	2730.24	43%	80%				
	4361.49	14%	90%				
48 hours	125.886	83%	5%	1			
	125.886	83%	5%	2	1.0	0.0	54.1
	74.5128	100%	1%	3	0.0	0.0	na
	1810.08	17%	70%	4	4.2	0.3	52.1
	2730.24	17%	80%				
	4361.49	17%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	594.5	70%	31%	1			
	414.687	80%	21%	2	1.6	0.6	3.9
	179.864	90%	8%	3	1.3	0.5	3.4
	2051.16	25%	70%	4	1.3	0.5	3.4
	3055.75	15%	80%				
	4649.24	0%	90%				
24 hours	334.433	70%	16%	1			
	226.074	85%	12%	2	0.7	0.3	1.6
	83.2021	93%	1%	3	1.0	0.5	2.1

Fig. 2 - 12

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48 hours	2051.16	30%	70%	4	2.1	1.2	3.8
	3055.75	15%	80%				
	4649.24	11%	90%				
	334.433	75%	16%	1			
	226.074	81%	12%	2	0.7	0.2	2.5
	143.544	94%	7%	3	0.2	0.0	3.0
	2051.16	31%	70%	4	2.2	1.0	5.1
	3055.75	13%	80%				
	4649.24	6%	90%				

Fig. 2 - 13

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Lymphotoxin-alpha

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1.920	1.310	1.920	3.275	1.920	1.380
average	2.210	1.626	2.210	2.897	2.210	2.008
stdev	2.011	1.418	2.011	1.929	2.011	2.268
p (t-test)		0.138		0.049		0.678
min	0.182	0.182	0.182	0.182	0.182	0.182
max	13.300	4.040	13.300	9.010	13.300	9.230
n (Samp)	419	27	419	36	419	18
n (Pat)	164	27	164	36	164	18

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1.840	3.400	1.840	3.990	1.840	2.230
average	2.196	5.544	2.196	3.608	2.196	2.261
stdev	2.077	5.582	2.077	1.487	2.077	1.635
p (t-test)		0.000		0.043		0.935
min	0.182	2.490	0.182	0.182	0.182	0.182
max	13.300	15.500	13.300	5.380	13.300	4.350
n (Samp)	518	5	518	9	518	7
n (Pat)	199	5	199	9	199	7

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1.970	1.250	1.970	2.845	1.970	1.540
average	2.245	1.410	2.245	2.835	2.245	2.365
stdev	2.039	1.378	2.039	2.022	2.039	2.373
p (t-test)		0.041		0.129		0.820
min	0.182	0.182	0.182	0.182	0.182	0.182
max	13.300	4.040	13.300	9.010	13.300	9.230
n (Samp)	352	26	352	30	352	16
n (Pat)	133	26	133	30	133	16

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.43	0.054	419	27	0.180
24 hours	0.63	0.052	419	36	0.015
48 hours	0.45	0.067	419	18	0.427

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.79	0.122	518	5	0.019
24 hours	0.76	0.094	518	9	0.006
48 hours	0.55	0.113	518	7	0.678

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.38	0.052	352	26	0.019
24 hours	0.61	0.057	352	30	0.063
48 hours	0.50	0.074	352	16	0.987

Fig. 2 - 14

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sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	1.2	0.6	2.6
	0	100%	0%	3	1.4	0.7	2.9
	2.84	30%	70%	4	1.9	1.0	3.6
	3.52	4%	80%				
	4.61	0%	90%				
24 hours	1.84	72%	48%	1			
	0.846	81%	28%	2	0.8	0.4	1.7
	0	100%	0%	3	1.5	0.9	2.7
	2.84	56%	70%	4	2.9	1.8	4.7
	3.52	31%	80%				
	4.61	11%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	0.8	0.2	2.4
	0	100%	0%	3	1.8	0.8	4.1
	2.84	28%	70%	4	1.0	0.4	2.8
	3.52	17%	80%				
	4.61	6%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	2.76	80%	69%	1			
	2.76	80%	69%	2	na	na	na
	2.47	100%	64%	3	na	na	na
	2.83	60%	70%	4	na	na	na
	3.52	20%	81%				
	4.61	20%	90%				
24 hours	3.37	78%	77%	1			
	2.76	89%	69%	2	na	na	na
	0	100%	0%	3	na	na	na
	2.83	78%	70%	4	na	na	na
	3.52	56%	81%				
	4.61	11%	90%				
48 hours	1.98	71%	52%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	1.5	0.3	8.0
	2.83	43%	70%	4	1.0	0.1	7.3
	3.52	29%	81%				
	4.61	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	1.7	0.6	5.1
	0	100%	0%	3	2.1	0.7	5.8
	2.9	27%	70%	4	4.5	1.9	10.6
	3.52	4%	80%				
	4.61	0%	90%				
24 hours	1.84	70%	48%	1			
	0.768	80%	28%	2	1.0	0.4	2.3
	0	100%	0%	3	1.4	0.7	2.9
	2.9	47%	70%	4	2.8	1.6	5.1
	3.52	27%	80%				

Fig. 2 - 15

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48 hours	4.61	17%	90%				
	0.93	75%	29%	1			
	0	100%	0%	2	0.4	0.1	1.6
	0	100%	0%	3	1.0	0.4	2.3
	2.9	38%	70%	4	0.8	0.3	2.0
	3.52	19%	80%				
	4.61	6%	90%				

Fig. 2 - 16

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Matrix metalloproteinase-3

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.028	0.039	0.028	0.031	0.028	0.047
average	0.137	0.065	0.137	1.442	0.137	0.090
stdev	0.881	0.104	0.881	8.155	0.881	0.119
p (t-test)		0.673		0.002		0.823
min	0.001	0.001	0.001	0.001	0.001	0.001
max	16.700	0.494	16.700	49.000	16.700	0.404
n (Samp)	419	27	419	36	419	18
n (Pat)	164	27	164	36	164	18

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.030	0.014	0.030	0.032	0.030	0.039
average	0.226	0.052	0.226	0.158	0.226	0.070
stdev	2.293	0.075	2.293	0.367	2.293	0.098
p (t-test)		0.865		0.930		0.857
min	0.001	0.001	0.001	0.001	0.001	0.001
max	49.000	0.182	49.000	1.130	49.000	0.286
n (Samp)	518	5	518	9	518	7
n (Pat)	199	5	199	9	199	7

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.027	0.037	0.027	0.031	0.027	0.054
average	0.149	0.066	0.149	1.685	0.149	0.090
stdev	0.957	0.105	0.957	8.937	0.957	0.114
p (t-test)		0.660		0.002		0.805
min	0.001	0.001	0.001	0.001	0.001	0.001
max	16.700	0.494	16.700	49.000	16.700	0.404
n (Samp)	352	26	352	30	352	16
n (Pat)	133	26	133	30	133	16

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.54	0.059	419	27	0.444
24 hours	0.53	0.051	419	36	0.577
48 hours	0.57	0.072	419	18	0.335

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.44	0.124	518	5	0.640
24 hours	0.50	0.097	518	9	0.961
48 hours	0.55	0.113	518	7	0.639

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.55	0.060	352	26	0.431
24 hours	0.53	0.056	352	30	0.613
48 hours	0.58	0.076	352	16	0.278

Fig. 2 - 17

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sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0143	70%	31%	1			
	0.0063	81%	21%	2	0.5	0.2	1.3
	0	100%	0%	3	1.9	1.1	3.3
	0.0489	44%	70%	4	1.2	0.6	2.2
	0.0739	19%	80%				
	0.159	7%	90%				
24 hours	0.0202	72%	39%	1			
	0.00783	81%	22%	2	0.9	0.5	1.5
	0	100%	0%	3	1.5	1.0	2.4
	0.0489	28%	70%	4	1.1	0.7	1.9
	0.0739	22%	80%				
	0.159	14%	90%				
48 hours	0.0143	72%	31%	1			
	0	100%	0%	2	0.4	0.1	1.6
	0	100%	0%	3	0.6	0.2	1.7
	0.0489	44%	70%	4	1.6	0.8	3.2
	0.0739	28%	80%				
	0.159	22%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.00967	80%	24%	1			
	0.00967	80%	24%	2	1.0	0.0	51.9
	0	100%	0%	3	1.0	0.0	51.9
	0.0531	20%	70%	4	2.0	0.1	39.6
	0.0784	20%	80%				
	0.167	20%	90%				
24 hours	0.00783	78%	21%	1			
	0	100%	0%	2	1.5	0.3	8.0
	0	100%	0%	3	0.5	0.0	9.7
	0.0531	22%	70%	4	1.5	0.3	8.0
	0.0784	22%	80%				
	0.167	11%	90%				
48 hours	0.0304	71%	50%	1			
	0.017	86%	32%	2	1.0	0.0	51.9
	0	100%	0%	3	3.0	0.2	42.9
	0.0531	29%	70%	4	2.0	0.1	39.0
	0.0784	14%	80%				
	0.167	14%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0143	73%	32%	1			
	0.0063	81%	22%	2	0.3	0.1	1.2
	0	100%	0%	3	1.9	1.1	3.4
	0.0506	42%	71%	4	1.2	0.6	2.2
	0.0754	19%	80%				
	0.178	8%	90%				
24 hours	0.0202	73%	40%	1			
	0.00967	80%	26%	2	1.2	0.6	2.2
	0	100%	0%	3	1.9	1.1	3.4
	0.0506	30%	71%	4	1.0	0.5	2.0
	0.0754	20%	80%				

Fig. 2 - 18

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48 hours	0.178	10%	90%				
	0.0141	75%	30%	1			
	0.0063	81%	22%	2	0.5	0.1	2.2
	0	100%	0%	3	0.7	0.2	2.4
	0.0506	50%	71%	4	1.8	0.8	4.1
	0.0754	31%	80%				
	0.178	19%	90%				

Fig. 2 - 19

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Thrombospondin-1

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	5.484	8.700	5.484	6.908	5.484	4.790
average	16.192	11.400	16.192	7.298	16.192	4.790
stdev	51.731	7.467	51.731	3.886	51.731	3.848
p (t-test)		0.795		0.768		0.758
min	0.828	3.622	0.828	3.622	0.828	2.070
max	435.086	22.485	435.086	11.364	435.086	7.511
n (Samp)	78	8	78	3	78	2
n (Pat)	56	8	56	3	56	2

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	6.881	0.828	6.881	0.828	6.881	5.550
average	15.643	5.399	15.643	6.908	15.643	5.550
stdev	46.847	na	46.847	na	46.847	2.773
p (t-test)		na		na		0.762
min	0.828	5.399	0.828	6.908	0.828	3.590
max	435.086	5.399	435.086	6.908	435.086	7.511
n (Samp)	96	1	96	1	96	2
n (Pat)	69	1	69	1	69	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	4.494	8.700	4.494	7.493	4.494	0.828
average	8.052	11.400	8.052	7.493	8.052	2.070
stdev	12.651	7.467	12.651	5.474	12.651	na
p (t-test)		0.468		0.951		na
min	0.828	3.622	0.828	3.622	0.828	2.070
max	93.490	22.485	93.490	11.364	93.490	2.070
n (Samp)	61	8	61	2	61	1
n (Pat)	43	8	43	2	43	1

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.65	0.110	78	8	0.173
24 hours	0.56	0.176	78	3	0.715
48 hours	0.35	0.177	78	2	0.405

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.44	0.277	96	1	0.821
24 hours	0.50	0.292	96	1	1.000
48 hours	0.42	0.193	96	2	0.676

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.71	0.108	61	8	0.052
24 hours	0.64	0.216	61	2	0.519
48 hours	0.15	0.134	61	1	0.009

Fig. 2 - 20

ENA-78 (C-X-C chemokine motif 5)

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.018	0.025	0.018	0.025	0.018	0.025
average	0.037	0.143	0.037	0.143	0.037	0.143
stdev	0.083	0.495	0.083	0.495	0.083	0.495
p (t-test)		0.126		0.126		0.126
min	0.000	0.000	0.000	0.000	0.000	0.000
max	0.531	2.350	0.531	2.350	0.531	2.350
n (Samp)	54	22	54	22	54	22
n (Pat)	54	22	54	22	54	22

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.020	0.027	0.020	0.027	0.020	0.027
average	0.024	0.026	0.024	0.026	0.024	0.026
stdev	0.025	0.011	0.025	0.011	0.025	0.011
p (t-test)		0.815		0.815		0.815
min	0.000	0.012	0.000	0.012	0.000	0.012
max	0.107	0.039	0.107	0.039	0.107	0.039
n (Samp)	20	5	20	5	20	5
n (Pat)	20	5	20	5	20	5

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.018	0.024	0.018	0.024	0.018	0.024
average	0.045	0.162	0.045	0.162	0.045	0.162
stdev	0.095	0.564	0.095	0.564	0.095	0.564
p (t-test)		0.184		0.184		0.184
min	0.000	0.000	0.000	0.000	0.000	0.000
max	0.531	2.350	0.531	2.350	0.531	2.350
n (Samp)	44	17	44	17	44	17
n (Pat)	44	17	44	17	44	17

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.66	0.072	54	22	0.030
24 hours	0.66	0.072	54	22	0.030
48 hours	0.66	0.072	54	22	0.030

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.66	0.147	20	5	0.291
24 hours	0.66	0.147	20	5	0.291
48 hours	0.66	0.147	20	5	0.291

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.63	0.083	44	17	0.127
24 hours	0.63	0.083	44	17	0.127
48 hours	0.63	0.083	44	17	0.127

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0178	73%	50%	1			
	0.0143	82%	46%	2	3.9	0.8	18.9

Fig. 3 - 1

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	0.0116	91%	39%	3	3.9	0.8	18.9
	0.0255	50%	70%	4	6.2	1.4	28.2
	0.0348	36%	81%				
	0.0639	14%	91%				
24 hours	0.0178	73%	50%	1			
	0.0143	82%	46%	2	3.9	0.8	18.9
	0.0116	91%	39%	3	3.9	0.8	18.9
	0.0255	50%	70%	4	6.2	1.4	28.2
	0.0348	36%	81%				
	0.0639	14%	91%				
48 hours	0.0178	73%	50%	1			
	0.0143	82%	46%	2	3.9	0.8	18.9
	0.0116	91%	39%	3	3.9	0.8	18.9
	0.0255	50%	70%	4	6.2	1.4	28.2
	0.0348	36%	81%				
	0.0639	14%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0176	80%	50%	1			
	0.0176	80%	50%	2	na	na	na
	0.0107	100%	35%	3	na	na	na
	0.0238	60%	70%	4	na	na	na
	0.0282	40%	80%				
	0.0425	0%	90%				
24 hours	0.0176	80%	50%	1			
	0.0176	80%	50%	2	na	na	na
	0.0107	100%	35%	3	na	na	na
	0.0238	60%	70%	4	na	na	na
	0.0282	40%	80%				
	0.0425	0%	90%				
48 hours	0.0176	80%	50%	1			
	0.0176	80%	50%	2	na	na	na
	0.0107	100%	35%	3	na	na	na
	0.0238	60%	70%	4	na	na	na
	0.0282	40%	80%				
	0.0425	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0184	71%	55%	1			
	0.0168	82%	50%	2	7.0	0.5	102.9
	0.0125	94%	45%	3	7.0	0.5	102.9
	0.0269	35%	70%	4	8.4	0.6	115.7
	0.039	24%	82%				
	0.0894	6%	91%				
24 hours	0.0184	71%	55%	1			
	0.0168	82%	50%	2	7.0	0.5	102.9
	0.0125	94%	45%	3	7.0	0.5	102.9
	0.0269	35%	70%	4	8.4	0.6	115.7
	0.039	24%	82%				
	0.0894	6%	91%				
48 hours	0.0184	71%	55%	1			
	0.0168	82%	50%	2	7.0	0.5	102.9
	0.0125	94%	45%	3	7.0	0.5	102.9
	0.0269	35%	70%	4	8.4	0.6	115.7
	0.039	24%	82%				
	0.0894	6%	91%				

Fig. 3 - 2

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CD44

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	145.766	161.794	145.766	160.907	145.766	161.794
average	191.892	231.164	191.892	240.268	191.892	220.705
stdev	162.949	199.915	162.949	201.063	162.949	210.246
p (t-test)		0.463		0.381		0.674
min	26.660	10.704	26.660	51.399	26.660	51.399
max	792.530	666.214	792.530	666.214	792.530	666.214
n (Samp)	50	13	50	12	50	7
n (Pat)	50	13	50	12	50	7

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	157.371	75.466	157.371	102.358	157.371	75.466
average	216.768	153.002	216.768	176.718	216.768	117.841
stdev	202.518	172.869	202.518	176.453	202.518	95.004
p (t-test)		0.420		0.638		0.403
min	17.617	10.704	17.617	51.399	17.617	51.399
max	1198.603	512.222	1198.603	512.222	1198.603	226.658
n (Samp)	93	7	93	6	93	3
n (Pat)	93	7	93	6	93	3

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	140.047	220.678	140.047	161.794	140.047	161.794
average	162.057	287.084	162.057	271.197	162.057	253.375
stdev	132.738	208.117	132.738	218.039	132.738	240.408
p (t-test)		0.043		0.079		0.198
min	27.849	75.466	27.849	75.466	27.849	75.466
max	727.823	666.214	727.823	666.214	727.823	666.214
n (Samp)	38	7	38	7	38	5
n (Pat)	38	7	38	7	38	5

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.55	0.092	50	13	0.603
24 hours	0.56	0.095	50	12	0.505
48 hours	0.53	0.119	50	7	0.774

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.36	0.098	93	7	0.145
24 hours	0.42	0.114	93	6	0.460
48 hours	0.33	0.141	93	3	0.236

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.73	0.115	38	7	0.042
24 hours	0.67	0.120	38	7	0.169
48 hours	0.62	0.142	38	5	0.394

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	70.9821	77%	22%	1			
	62.8125	85%	18%	2	0.2	0.0	2.9

Fig. 4 - 1

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24 hours	48.75	92%	14%	3	0.9	0.2	3.4
	206.638	46%	70%	4	0.9	0.2	3.4
	252.672	31%	80%				
	358.889	23%	90%				
	98.6486	75%	34%	1			
	70.9821	83%	22%	2	0.6	0.1	4.0
	62.8125	92%	18%	3	1.0	0.2	5.1
	206.638	42%	70%	4	1.3	0.3	5.8
	252.672	33%	80%				
	358.889	25%	90%				
	98.6486	71%	34%	1			
	70.9821	86%	22%	2	0.5	0.0	12.0
	48.75	100%	14%	3	1.0	0.1	9.8
	206.638	43%	70%	4	0.9	0.1	9.0
	252.672	29%	80%				
	358.889	14%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	62.8125	71%	15%	1			
	48.75	86%	12%	2	1.0	0.0	59.3
	0	100%	0%	3	1.0	0.0	59.3
	245.431	14%	71%	4	4.6	0.3	63.1
	329.874	14%	81%				
	471.481	14%	90%				
24 hours	62.8125	83%	15%	1			
	62.8125	83%	15%	2	1.0	0.0	59.3
	48.75	100%	12%	3	1.0	0.0	59.3
	245.431	17%	71%	4	3.4	0.2	55.7
	329.874	17%	81%				
	471.481	17%	90%				
48 hours	48.75	100%	12%	1			
	48.75	100%	12%	2	na	na	na
	48.75	100%	12%	3	na	na	na
	245.431	0%	71%	4	na	na	na
	329.874	0%	81%				
	471.481	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	160.086	71%	63%	1			
	157.371	86%	61%	2	0.0	0.0	na
	70.9821	100%	24%	3	2.2	0.1	63.6
	175.086	57%	71%	4	5.0	0.3	90.1
	206.638	57%	82%				
	252.672	43%	92%				
24 hours	157.371	71%	61%	1			
	98.6486	86%	34%	2	1.0	0.0	74.6
	70.9821	100%	24%	3	2.2	0.1	63.6
	175.086	43%	71%	4	3.3	0.2	68.8
	206.638	43%	82%				
	252.672	43%	92%				
48 hours	98.6486	80%	34%	1			
	98.6486	80%	34%	2	0.9	0.0	68.6
	70.9821	100%	24%	3	0.9	0.0	68.6
	175.086	40%	71%	4	2.0	0.1	58.5
	206.638	40%	82%				
	252.672	40%	92%				

Fig. 4 - 2

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Angiopoietin-1

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	53.759	160.714	53.759	112.149	53.759	185.185
average	80.478	967.589	80.478	1036.661	80.478	236.066
stdev	80.285	2862.475	80.285	2978.333	80.285	248.163
p (t-test)		0.032		0.026		0.001
min	0.548	0.548	0.548	0.548	0.548	0.548
max	292.857	10472.009	292.857	10472.009	292.857	623.874
n (Samp)	48	13	48	12	48	7
n (Pat)	48	13	48	12	48	7

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	42.832	29.808	42.832	34.461	42.832	185.185
average	189.991	131.452	189.991	152.058	189.991	269.869
stdev	1099.724	225.809	1099.724	240.044	1099.724	320.176
p (t-test)		0.889		0.933		0.901
min	0.548	4.650	0.548	4.650	0.548	0.548
max	10472.009	623.874	10472.009	623.874	10472.009	623.874
n (Samp)	90	7	90	6	90	3
n (Pat)	90	7	90	6	90	3

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	51.215	355.655	51.215	355.655	51.215	355.655
average	71.995	1754.623	71.995	1735.922	71.995	293.346
stdev	80.824	3849.406	80.824	3858.746	80.824	271.591
p (t-test)		0.008		0.008		0.000
min	0.548	0.548	0.548	0.548	0.548	0.548
max	292.857	10472.009	292.857	10472.009	292.857	623.874
n (Samp)	37	7	37	7	37	5
n (Pat)	37	7	37	7	37	5

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.61	0.092	48	13	0.233
24 hours	0.61	0.095	48	12	0.246
48 hours	0.61	0.120	48	7	0.361

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.50	0.114	90	7	0.983
24 hours	0.55	0.125	90	6	0.663
48 hours	0.64	0.176	90	3	0.436

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.83	0.099	37	7	0.001
24 hours	0.76	0.111	37	7	0.018
48 hours	0.69	0.139	37	5	0.173

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	21.8818	77%	31%	1			
	4.64989	85%	13%	2	1.0	0.2	5.1

Fig. 4 - 3

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24 hours	3.4965	92%	10%	3	0.0	0.0	na
	99.0385	54%	73%	4	3.1	0.8	11.6
	133.772	54%	81%				
	212.963	31%	92%				
	29.7203	75%	33%	1			
	21.8818	83%	31%	2	2.4	0.4	14.3
	3.4965	92%	10%	3	0.0	0.0	na
	99.0385	50%	73%	4	4.3	0.8	23.1
	133.772	50%	81%				
	212.963	33%	92%				
	29.7203	71%	33%	1			
	0	100%	0%	2	0.4	0.0	11.1
48 hours	0	100%	0%	3	0.0	0.0	na
	99.0385	57%	73%	4	2.2	0.3	13.9
	133.772	57%	81%				
	212.963	43%	92%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	25.1736	71%	39%	1			
	4.64989	86%	17%	2	1.6	0.3	9.7
	3.4965	100%	14%	3	0.0	0.0	na
	77.2569	29%	70%	4	1.0	0.1	8.1
	133.772	29%	80%				
	208.333	14%	90%				
24 hours	25.1736	83%	39%	1			
	25.1736	83%	39%	2	3.3	0.2	53.6
	3.4965	100%	14%	3	0.0	0.0	na
	77.2569	33%	70%	4	2.1	0.1	47.1
	133.772	33%	80%				
	208.333	17%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	0.0	0.0	na
	77.2569	67%	70%	4	2.0	0.1	45.2
	133.772	67%	80%				
	208.333	33%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	177.632	71%	89%	1			
	133.772	86%	86%	2	0.0	0.0	na
	0	100%	0%	3	0.0	0.0	na
	75.7576	86%	70%	4	12.0	0.7	212.6
	113.636	86%	81%				
	231.481	57%	92%				
24 hours	177.632	71%	89%	1			
	29.7203	86%	38%	2	1.0	0.0	74.6
	0	100%	0%	3	0.0	0.0	na
	75.7576	71%	70%	4	8.3	0.5	147.7
	113.636	71%	81%				
	231.481	57%	92%				
48 hours	29.7203	80%	38%	1			
	29.7203	80%	38%	2	0.9	0.0	68.6
	0	100%	0%	3	0.0	0.0	na
	75.7576	60%	70%	4	3.4	0.2	73.1
	113.636	60%	81%				
	231.481	60%	92%				

Fig. 4 - 4

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ENA-78 (C-X-C chemokine motif 5)

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.020	0.044	0.020	0.042	0.020	0.035
average	0.053	0.367	0.053	0.380	0.053	0.048
stdev	0.159	1.241	0.159	1.281	0.159	0.052
p (t-test)		0.014		0.013		0.914
min	0.000	0.008	0.000	0.006	0.000	0.000
max	1.460	5.180	1.460	5.180	1.460	0.184
n (Samp)	104	17	104	16	104	10
n (Pat)	104	17	104	16	104	10

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.022	0.061	0.022	0.051	0.022	0.044
average	0.111	0.077	0.111	0.061	0.111	0.056
stdev	0.468	0.048	0.468	0.037	0.468	0.038
p (t-test)		0.840		0.766		0.794
min	0.000	0.026	0.000	0.022	0.000	0.022
max	5.180	0.162	5.180	0.115	5.180	0.110
n (Samp)	170	8	170	8	170	5
n (Pat)	170	8	170	8	170	5

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.020	0.040	0.020	0.042	0.020	0.039
average	0.059	0.525	0.059	0.575	0.059	0.050
stdev	0.174	1.545	0.174	1.619	0.174	0.061
p (t-test)		0.007		0.005		0.892
min	0.000	0.008	0.000	0.006	0.000	0.000
max	1.460	5.180	1.460	5.180	1.460	0.184
n (Samp)	85	11	85	10	85	7
n (Pat)	85	11	85	10	85	7

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.77	0.069	104	17	0.000
24 hours	0.76	0.073	104	16	0.000
48 hours	0.65	0.098	104	10	0.116

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.80	0.095	170	8	0.001
24 hours	0.76	0.101	170	8	0.011
48 hours	0.72	0.132	170	5	0.099

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.73	0.090	85	11	0.009
24 hours	0.74	0.094	85	10	0.011
48 hours	0.63	0.117	85	7	0.267

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0376	71%	79%	1			
	0.0256	82%	63%	2	1.0	0.0	57.7

Fig. 4 - 5

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24 hours	0.013	94%	31%	3	5.8	0.5	70.5
	0.0299	76%	70%	4	13.8	1.4	140.1
	0.0407	53%	81%				
	0.0581	41%	90%				
	0.0301	75%	71%	1			
	0.0238	81%	63%	2	2.1	0.1	45.0
	0.013	94%	31%	3	4.5	0.3	59.6
	0.0299	75%	70%	4	12.4	1.2	128.9
	0.0407	50%	81%				
	0.0581	38%	90%				
48 hours	0.0238	70%	63%	1			
	0.0213	80%	54%	2	1.0	0.0	56.0
	0.013	90%	31%	3	3.2	0.2	51.4
	0.0299	60%	70%	4	5.6	0.5	69.0
	0.0407	30%	81%				
	0.0581	20%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0299	73%	69%	1			
	0.0246	82%	62%	2	1.0	0.0	59.8
	0.013	91%	32%	3	3.3	0.2	53.6
	0.0327	64%	71%	4	7.7	0.6	91.6
	0.0389	55%	80%				
	0.0757	36%	91%				
24 hours	0.0376	70%	79%	1			
	0.0299	80%	69%	2	1.0	0.0	57.4
	0.013	90%	32%	3	2.0	0.1	45.2
	0.0327	70%	71%	4	7.3	0.6	88.0
	0.0389	60%	80%				
	0.0757	40%	91%				
48 hours	0.0299	71%	69%	1			
	0.013	86%	32%	2	1.0	0.0	60.2
	0	100%	0%	3	1.0	0.0	60.2
	0.0327	57%	71%	4	4.6	0.3	65.0
	0.0389	43%	80%				
	0.0757	14%	91%				

Fig. 4 - 6

Endoglin

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.015	0.011	0.015	0.004	0.015	0.004
average	0.029	0.020	0.029	0.021	0.029	0.007
stdev	0.049	0.031	0.049	0.036	0.049	0.006
p (t-test)		0.603		0.665		0.284
min	0.004	0.004	0.004	0.004	0.004	0.004
max	0.199	0.101	0.199	0.101	0.199	0.018
n (Samp)	36	9	36	7	36	6
n (Pat)	36	9	36	7	36	6

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.011	0.018	0.011	0.018	0.011	0.011
average	0.026	0.032	0.026	0.041	0.026	0.011
stdev	0.045	0.039	0.045	0.052	0.045	0.010
p (t-test)		0.792		0.592		0.636
min	0.004	0.004	0.004	0.004	0.004	0.004
max	0.199	0.101	0.199	0.101	0.199	0.018
n (Samp)	60	5	60	3	60	2
n (Pat)	60	5	60	3	60	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.018	0.004	0.018	0.004	0.018	0.004
average	0.036	0.005	0.036	0.005	0.036	0.005
stdev	0.055	0.004	0.055	0.004	0.055	0.004
p (t-test)		0.285		0.285		0.285
min	0.004	0.004	0.004	0.004	0.004	0.004
max	0.199	0.011	0.199	0.011	0.199	0.011
n (Samp)	26	4	26	4	26	4
n (Pat)	26	4	26	4	26	4

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.42	0.103	36	9	0.411
24 hours	0.35	0.106	36	7	0.161
48 hours	0.26	0.095	36	6	0.011

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.61	0.139	60	5	0.416
24 hours	0.58	0.177	60	3	0.639
48 hours	0.41	0.193	60	2	0.635

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.16	0.088	26	4	0.000
24 hours	0.16	0.088	26	4	0.000
48 hours	0.16	0.088	26	4	0.000

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	6.3	0.3	115.2
	0	100%	0%	3	0.0	0.0	na
	0.01838	11%	78%	4	6.3	0.3	115.2

Fig. 4 - 7

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24 hours	0.04136	11%	86%				
	0.06434	11%	92%				
	0	100%	0%	1			
	0	100%	0%	2	1.0	0.0	74.6
	0	100%	0%	3	1.0	0.0	74.6
	0.01838	14%	78%	4	6.7	0.3	130.3
	0.04136	14%	86%				
48 hours	0.06434	14%	92%				
	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.01838	0%	78%	4	na	na	na
	0.04136	0%	86%				
	0.06434	0%	92%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.01106	80%	55%	1			
	0.01106	80%	55%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.01838	20%	77%	4	na	na	na
	0.0318	20%	80%				
	0.04563	20%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	0.9	0.0	61.7
	0.01838	33%	77%	4	0.9	0.0	61.7
	0.0318	33%	80%				
	0.04563	33%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.01838	0%	77%	4	na	na	na
	0.0318	0%	80%				
	0.04563	0%	90%				

Fig. 4 - 8

Erythropoietin

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	42.800	0.664	42.800	0.664	42.800	0.664
average	155.835	80.249	155.835	78.932	155.835	72.125
stdev	277.860	132.128	277.860	137.072	277.860	141.795
p (t-test)		0.274		0.281		0.350
min	0.664	0.664	0.664	0.664	0.664	0.664
max	1350.000	397.000	1350.000	397.000	1350.000	397.000
n (Samp)	104	17	104	16	104	10
n (Pat)	104	17	104	16	104	10

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	39.500	0.664	39.500	0.664	39.500	0.664
average	212.595	81.003	212.595	78.748	212.595	79.931
stdev	765.889	150.195	765.889	151.395	765.889	177.247
p (t-test)		0.629		0.623		0.700
min	0.664	0.664	0.664	0.664	0.664	0.664
max	9340.000	397.000	9340.000	397.000	9340.000	397.000
n (Samp)	170	8	170	8	170	5
n (Pat)	170	8	170	8	170	5

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	42.700	0.664	42.700	0.664	42.700	0.664
average	193.805	65.232	193.805	63.425	193.805	46.131
stdev	447.414	114.715	447.414	120.755	447.414	100.387
p (t-test)		0.347		0.363		0.388
min	0.664	0.664	0.664	0.664	0.664	0.664
max	3430.000	310.000	3430.000	310.000	3430.000	270.000
n (Samp)	85	11	85	10	85	7
n (Pat)	85	11	85	10	85	7

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.37	0.068	104	17	0.061
24 hours	0.34	0.067	104	16	0.018
48 hours	0.33	0.080	104	10	0.030

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.36	0.091	170	8	0.127
24 hours	0.33	0.086	170	8	0.050
48 hours	0.31	0.103	170	5	0.059

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.35	0.081	85	11	0.071
24 hours	0.33	0.081	85	10	0.032
48 hours	0.31	0.091	85	7	0.034

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	0.5	0.1	2.4

Fig. 4 - 9

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	0	100%	0%	3	1.4	0.5	3.8
	125	24%	70%	4	1.7	0.6	4.5
	240	18%	81%				
	465	0%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.2	0.0	3.0
	0	100%	0%	3	1.6	0.6	4.3
	125	25%	70%	4	1.3	0.5	3.7
	240	19%	81%				
	465	0%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	0.5	0.0	10.9
	0	100%	0%	3	1.0	0.1	8.2
	125	20%	70%	4	2.9	0.6	13.6
	240	20%	81%				
	465	0%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	3.3	0.8	13.4
	125	25%	70%	4	0.0	0.0	na
	240	13%	80%				
	506	0%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	3.3	0.8	13.4
	125	25%	70%	4	0.0	0.0	na
	240	13%	80%				
	506	0%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	4.3	0.3	54.8
	125	20%	70%	4	0.0	0.0	na
	240	20%	80%				
	506	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	1.0	0.1	8.5
	0	100%	0%	3	0.0	0.0	na
	129	18%	71%	4	4.5	1.0	19.6
	240	18%	80%				
	518	0%	91%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.5	0.0	10.8
	0	100%	0%	3	0.0	0.0	na
	129	20%	71%	4	4.8	1.1	21.0
	240	20%	80%				
	518	0%	91%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	1.0	0.0	60.2
	0	100%	0%	3	0.0	0.0	na
	129	14%	71%	4	6.1	0.5	78.3
	240	14%	80%				
	518	0%	91%				

Fig. 4 - 10

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Fractalkine

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2.658	3.290	2.658	3.113	2.658	1.496
average	2.636	3.367	2.636	3.211	2.636	2.388
stdev	1.782	2.044	1.782	2.075	1.782	2.125
p (t-test)		0.206		0.335		0.737
min	0.069	0.250	0.069	0.250	0.069	0.250
max	7.811	6.610	7.811	6.610	7.811	6.610
n (Samp)	50	13	50	12	50	7
n (Pat)	50	13	50	12	50	7

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2.409	3.313	2.409	3.531	2.409	2.681
average	2.550	3.181	2.550	3.638	2.550	2.081
stdev	1.680	2.317	1.680	2.165	1.680	1.617
p (t-test)		0.354		0.134		0.635
min	0.069	0.250	0.069	0.250	0.069	0.250
max	7.811	6.429	7.811	6.429	7.811	3.313
n (Samp)	92	7	92	6	92	3
n (Pat)	92	7	92	6	92	3

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2.556	2.937	2.556	1.496	2.556	1.351
average	2.541	3.107	2.541	2.422	2.541	2.145
stdev	1.645	2.119	1.645	2.131	1.645	2.542
p (t-test)		0.428		0.867		0.638
min	0.069	0.250	0.069	0.250	0.069	0.250
max	7.811	6.610	7.811	6.610	7.811	6.610
n (Samp)	38	7	38	7	38	5
n (Pat)	38	7	38	7	38	5

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.61	0.092	50	13	0.220
24 hours	0.59	0.095	50	12	0.352
48 hours	0.44	0.113	50	7	0.577

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.58	0.117	92	7	0.482
24 hours	0.67	0.125	92	6	0.177
48 hours	0.43	0.162	92	3	0.686

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.58	0.122	38	7	0.499
24 hours	0.45	0.117	38	7	0.675
48 hours	0.35	0.121	38	5	0.224

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	2.3374	77%	46%	1			
	1.1021	85%	26%	2	1.5	0.2	10.4

Fig. 4 - 11

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24 hours	0.3125	92%	10%	3	2.2	0.4	12.9
	3.1982	54%	70%	4	2.2	0.4	12.9
	4.07631	31%	80%				
	5.08606	23%	90%				
	1.45325	75%	30%	1			
	1.1021	83%	26%	2	1.5	0.2	10.4
	0.85401	92%	22%	3	2.4	0.4	14.3
	3.1982	50%	70%	4	1.5	0.2	10.4
	4.07631	25%	80%				
	5.08606	25%	90%				
	1.1021	71%	26%	1			
	0.85401	86%	22%	2	2.3	0.1	59.8
	0.1868	100%	8%	3	2.3	0.1	59.8
	3.1982	29%	70%	4	2.3	0.1	59.8

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	2.61261	71%	54%	1			
	0.3125	86%	7%	2	0.0	0.0	na
	0.1868	100%	4%	3	1.0	0.1	8.1
	3.23293	57%	71%	4	1.5	0.2	9.2
	4.07631	29%	80%				
	5.08606	29%	90%				
24 hours	2.61261	83%	54%	1			
	2.61261	83%	54%	2	0.0	0.0	na
	0.1868	100%	4%	3	2.1	0.1	47.1
	3.23293	67%	71%	4	3.1	0.2	50.9
	4.07631	33%	80%				
	5.08606	33%	90%				
48 hours	0.1868	100%	4%	1			
	0.1868	100%	4%	2	na	na	na
	0.1868	100%	4%	3	na	na	na
	3.23293	33%	71%	4	na	na	na
	4.07631	0%	80%				
	5.08606	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	2.28395	71%	47%	1			
	1.1021	86%	26%	2	2.2	0.1	63.6
	0.15069	100%	5%	3	2.2	0.1	63.6
	3.19703	43%	71%	4	2.0	0.1	56.0
	3.94144	29%	82%				
	4.79554	29%	92%				
24 hours	1.1021	71%	26%	1			
	0.85401	86%	18%	2	0.5	0.0	14.0
	0.15069	100%	5%	3	1.1	0.1	11.9
	3.19703	29%	71%	4	1.1	0.1	11.9
	3.94144	14%	82%				
	4.79554	14%	92%				
48 hours	0.85401	80%	18%	1			
	0.85401	80%	18%	2	0.0	0.0	na
	0.15069	100%	5%	3	2.2	0.1	63.6
	3.19703	20%	71%	4	2.5	0.1	73.5
	3.94144	20%	82%				
	4.79554	20%	92%				

Fig. 4 - 12

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Interleukin-1 receptor, type II

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	966.732	1608.380	966.732	1608.380	966.732	583.915
average	1872.350	8066.896	1872.350	8063.895	1872.350	1600.724
stdev	3537.325	15470.860	3537.325	15472.536	3537.325	1929.798
p (t-test)		0.002		0.002		0.832
min	99.487	42.493	99.487	42.493	99.487	42.493
max	29514.673	46544.423	29514.673	46544.423	29514.673	5017.737
n (Samp)	82	12	82	12	82	8
n (Pat)	82	12	82	12	82	8

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1336.664	583.915	1336.664	583.915	1336.664	235.059
average	2409.661	8441.485	2409.661	8441.485	2409.661	334.073
stdev	4263.706	18692.892	4263.706	18692.892	4263.706	350.306
p (t-test)		0.009		0.009		0.334
min	58.099	42.493	58.099	42.493	58.099	42.493
max	34543.843	46544.423	34543.843	46544.423	34543.843	823.680
n (Samp)	136	6	136	6	136	4
n (Pat)	136	6	136	6	136	4

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	966.732	1608.380	966.732	1608.380	966.732	1608.380
average	1572.454	5892.439	1572.454	5887.937	1572.454	2069.859
stdev	1832.663	11722.903	1832.663	11725.425	1832.663	2036.725
p (t-test)		0.005		0.005		0.529
min	83.202	58.099	83.202	58.099	83.202	43.565
max	11320.965	34543.843	11320.965	34543.843	11320.965	5017.737
n (Samp)	68	8	68	8	68	6
n (Pat)	68	8	68	8	68	6

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.53	0.091	82	12	0.771
24 hours	0.52	0.091	82	12	0.796
48 hours	0.43	0.102	82	8	0.462

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.39	0.109	136	6	0.308
24 hours	0.39	0.109	136	6	0.308
48 hours	0.13	0.062	136	4	0.000

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.55	0.111	68	8	0.678
24 hours	0.54	0.110	68	8	0.702
48 hours	0.55	0.126	68	6	0.698

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	288.07	75%	12%	1			
	153.888	83%	5%	2	0.2	0.0	2.0

Fig. 4 - 13

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	42.4927	92%	0%	3	0.0	0.0	na
	1727.11	50%	71%	4	1.2	0.5	3.1
	2047.76	50%	80%				
	3945.89	25%	90%				
24 hours	288.07	75%	12%	1			
	99.487	83%	1%	2	0.2	0.0	2.0
	42.4927	92%	0%	3	0.0	0.0	na
	1727.11	50%	71%	4	1.2	0.5	3.1
	2047.76	50%	80%				
	3945.89	25%	90%				
48 hours	288.07	75%	12%	1			
	42.4927	88%	0%	2	0.0	0.0	na
	0	100%	0%	3	0.3	0.0	5.0
	1727.11	38%	71%	4	1.5	0.4	5.7
	2047.76	38%	80%				
	3945.89	13%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	153.888	83%	4%	1			
	153.888	83%	4%	2	0.0	0.0	na
	0	100%	0%	3	0.5	0.0	10.3
	2101.42	33%	71%	4	1.6	0.3	9.2
	3055.75	17%	80%				
	4718.2	17%	90%				
24 hours	153.888	83%	4%	1			
	153.888	83%	4%	2	0.0	0.0	na
	0	100%	0%	3	0.5	0.0	10.3
	2101.42	33%	71%	4	1.6	0.3	9.2
	3055.75	17%	80%				
	4718.2	17%	90%				
48 hours	99.487	75%	1%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	2101.42	0%	71%	4	na	na	na
	3055.75	0%	80%				
	4718.2	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	288.07	75%	15%	1			
	153.888	88%	7%	2	0.3	0.0	5.1
	0	100%	0%	3	0.0	0.0	na
	1727.11	50%	71%	4	1.4	0.4	5.7
	2047.76	50%	81%				
	3945.89	25%	91%				
24 hours	288.07	75%	15%	1			
	125.843	88%	4%	2	0.3	0.0	5.1
	0	100%	0%	3	0.0	0.0	na
	1727.11	50%	71%	4	1.4	0.4	5.7
	2047.76	50%	81%				
	3945.89	25%	91%				
48 hours	288.07	83%	15%	1			
	288.07	83%	15%	2	0.4	0.0	10.6
	0	100%	0%	3	0.0	0.0	na
	1727.11	50%	71%	4	1.5	0.2	9.8
	2047.76	50%	81%				
	3945.89	17%	91%				

Fig. 4 - 14

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Lymphotoxin-alpha

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2.595	4.180	2.595	4.265	2.595	3.455
average	2.750	5.421	2.750	5.036	2.750	4.876
stdev	2.126	4.121	2.126	3.070	2.126	3.755
p (t-test)		0.000		0.000		0.006
min	0.182	0.182	0.182	0.883	0.182	0.182
max	13.300	15.500	13.300	13.100	13.300	13.100
n (Samp)	104	17	104	16	104	10
n (Pat)	104	17	104	16	104	10

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2.820	4.510	2.820	4.510	2.820	3.730
average	3.029	5.849	3.029	4.584	3.029	4.106
stdev	2.289	4.082	2.289	1.249	2.289	1.467
p (t-test)		0.001		0.059		0.298
min	0.182	2.810	0.182	2.810	0.182	2.810
max	13.300	15.500	13.300	6.510	13.300	6.510
n (Samp)	170	8	170	8	170	5
n (Pat)	170	8	170	8	170	5

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2.740	3.410	2.740	3.455	2.740	3.410
average	2.802	4.922	2.802	5.267	2.802	5.102
stdev	2.093	3.952	2.093	3.834	2.093	4.440
p (t-test)		0.006		0.002		0.014
min	0.182	0.182	0.182	0.883	0.182	0.182
max	13.300	13.100	13.300	13.100	13.300	13.100
n (Samp)	85	11	85	10	85	7
n (Pat)	85	11	85	10	85	7

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.73	0.073	104	17	0.002
24 hours	0.75	0.073	104	16	0.001
48 hours	0.70	0.096	104	10	0.042

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.78	0.099	170	8	0.005
24 hours	0.76	0.100	170	8	0.009
48 hours	0.68	0.134	170	5	0.172

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.66	0.094	85	11	0.092
24 hours	0.70	0.096	85	10	0.034
48 hours	0.66	0.116	85	7	0.170

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.13	71%	61%	1			
	2.83	82%	58%	2	0.0	0.0	na

Fig. 4 - 15

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	0.1824	94%	18%	3	3.5	0.8	15.0
	3.41	59%	70%	4	5.7	1.5	22.2
	4.35	47%	81%				
	5.06	35%	90%				
24 hours	3.13	75%	61%	1			
	2.96	81%	60%	2	0.0	0.0	na
	2.76	94%	56%	3	8.8	0.8	96.6
	3.41	63%	70%	4	10.5	1.0	111.9
	4.35	44%	81%				
	5.06	31%	90%				
48 hours	3.13	70%	61%	1			
	2.96	80%	60%	2	0.0	0.0	na
	2.76	90%	56%	3	7.4	0.6	85.2
	3.41	50%	70%	4	3.1	0.2	49.3
	4.35	30%	81%				
	5.06	30%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3	73%	58%	1			
	2.83	82%	53%	2	0.5	0.0	10.8
	0.1824	91%	18%	3	2.2	0.4	11.5
	3.52	36%	72%	4	2.2	0.4	11.5
	4.28	36%	80%				
	4.95	36%	91%				
24 hours	3.13	70%	58%	1			
	3	80%	58%	2	0.0	0.0	na
	2.83	90%	53%	3	5.8	0.5	73.7
	3.52	40%	72%	4	4.4	0.3	61.5
	4.28	40%	80%				
	4.95	30%	91%				
48 hours	3.13	71%	58%	1			
	3	86%	58%	2	0.0	0.0	na
	0	100%	0%	3	4.6	0.3	65.0
	3.52	29%	72%	4	2.1	0.1	47.6
	4.28	29%	80%				
	4.95	29%	91%				

Fig. 4 - 16

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Matrix metalloproteinase-3

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.042	0.131	0.042	0.092	0.042	0.065
average	0.311	3.352	0.311	3.541	0.311	0.614
stdev	1.658	11.797	1.658	12.158	1.658	1.139
p (t-test)		0.013		0.010		0.573
min	0.001	0.028	0.001	0.022	0.001	0.007
max	16.700	49.000	16.700	49.000	16.700	2.920
n (Samp)	104	17	104	16	104	10
n (Pat)	104	17	104	16	104	10

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.046	0.174	0.046	0.158	0.046	0.049
average	0.557	0.575	0.557	0.556	0.557	0.600
stdev	3.978	0.895	3.978	0.906	3.978	1.129
p (t-test)		0.990		0.999		0.981
min	0.001	0.030	0.001	0.030	0.001	0.030
max	49.000	2.610	49.000	2.610	49.000	2.610
n (Samp)	170	8	170	8	170	5
n (Pat)	170	8	170	8	170	5

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.041	0.104	0.041	0.092	0.041	0.080
average	0.334	4.803	0.334	5.265	0.334	0.493
stdev	1.826	14.683	1.826	15.393	1.826	1.074
p (t-test)		0.007		0.005		0.821
min	0.001	0.028	0.001	0.022	0.001	0.007
max	16.700	49.000	16.700	49.000	16.700	2.920
n (Samp)	85	11	85	10	85	7
n (Pat)	85	11	85	10	85	7

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.71	0.074	104	17	0.005
24 hours	0.66	0.078	104	16	0.036
48 hours	0.60	0.099	104	10	0.304

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.76	0.101	170	8	0.011
24 hours	0.70	0.106	170	8	0.059
48 hours	0.59	0.136	170	5	0.508

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.71	0.092	85	11	0.025
24 hours	0.67	0.098	85	10	0.083
48 hours	0.60	0.117	85	7	0.383

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0489	71%	57%	1			
	0.0391	82%	45%	2	na	na	na

Fig. 4 - 17

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	0.0296	94%	32%	3	na	na	na
	0.0784	65%	70%	4	na	na	na
	0.18	35%	81%				
	0.406	24%	90%				
24 hours	0.0387	75%	44%	1			
	0.0341	81%	43%	2	5.8	0.5	70.5
	0.0296	94%	32%	3	4.5	0.3	59.6
	0.0784	56%	70%	4	7.3	0.6	82.8
	0.18	31%	81%				
	0.406	25%	90%				
48 hours	0.0391	70%	45%	1			
	0.0296	80%	32%	2	3.1	0.2	49.3
	0.0214	90%	27%	3	3.2	0.2	51.4
	0.0784	50%	70%	4	3.1	0.2	49.3
	0.18	30%	81%				
	0.406	20%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0466	73%	59%	1			
	0.0391	82%	46%	2	na	na	na
	0.0387	91%	45%	3	na	na	na
	0.0703	64%	71%	4	na	na	na
	0.131	36%	80%				
	0.391	18%	91%				
24 hours	0.0391	70%	46%	1			
	0.0387	80%	45%	2	na	na	na
	0.0303	90%	35%	3	na	na	na
	0.0703	60%	71%	4	na	na	na
	0.131	30%	80%				
	0.391	20%	91%				
48 hours	0.0391	71%	46%	1			
	0.0214	86%	28%	2	2.1	0.1	47.6
	0.0008	100%	12%	3	1.0	0.0	60.2
	0.0703	57%	71%	4	3.3	0.2	54.3
	0.131	29%	80%				
	0.391	14%	91%				

Fig. 4 - 18

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MDC (C-C motif chemokine 22)

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.056	5.750	0.056	2.660	0.056	0.056
average	1.799	9.356	1.799	9.106	1.799	1.957
stdev	4.717	21.420	4.717	22.181	4.717	2.632
p (t-test)		0.002		0.003		0.917
min	0.056	0.056	0.056	0.056	0.056	0.056
max	41.000	90.700	41.000	90.700	41.000	6.380
n (Samp)	104	17	104	16	104	10
n (Pat)	104	17	104	16	104	10

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.056	6.030	0.056	5.100	0.056	2.660
average	2.393	6.683	2.393	5.446	2.393	3.115
stdev	8.207	4.439	8.207	4.855	8.207	2.151
p (t-test)		0.144		0.299		0.845
min	0.056	0.056	0.056	0.056	0.056	0.056
max	90.700	15.900	90.700	15.900	90.700	5.750
n (Samp)	170	8	170	8	170	5
n (Pat)	170	8	170	8	170	5

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.056	0.056	0.056	1.358	0.056	0.056
average	2.116	10.553	2.116	11.264	2.116	1.587
stdev	5.201	26.768	5.201	28.072	5.201	2.674
p (t-test)		0.010		0.008		0.791
min	0.056	0.056	0.056	0.056	0.056	0.056
max	41.000	90.700	41.000	90.700	41.000	6.380
n (Samp)	85	11	85	10	85	7
n (Pat)	85	11	85	10	85	7

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.69	0.075	104	17	0.010
24 hours	0.68	0.078	104	16	0.018
48 hours	0.55	0.098	104	10	0.596

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.86	0.085	170	8	0.000
24 hours	0.81	0.094	170	8	0.001
48 hours	0.75	0.128	170	5	0.055

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.59	0.095	85	11	0.354
24 hours	0.60	0.100	85	10	0.304
48 hours	0.47	0.112	85	7	0.793

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR
0 hours	0	100%	0%	1		

Fig. 4 - 19

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	0	100%	0%	2	7.3	0.6	82.8
	0	100%	0%	3	0.0	0.0	na
	1.66	59%	71%	4	13.8	1.4	140.1
	2.51	59%	81%				
	4.6	53%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	1.66	56%	71%	4	na	na	na
	2.51	56%	81%				
48 hours	4.6	38%	90%				
	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	1.66	40%	71%	4	na	na	na
	2.51	40%	81%				
	4.6	20%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	4.6	0.3	64.0
	0	100%	0%	3	1.0	0.0	59.8
	2.16	45%	71%	4	6.1	0.5	76.8
	2.9	45%	80%				
24 hours	4.84	36%	91%				
	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	2.16	50%	71%	4	na	na	na
48 hours	2.9	40%	80%				
	4.84	30%	91%				
	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	2.2	0.4	11.7
	2.16	29%	71%	4	0.5	0.0	10.8
	2.9	29%	80%				
	4.84	14%	91%				

Fig. 4 - 20

Thrombospondin-1

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	8.700	14.807	8.700	12.521	8.700	12.521
average	27.492	21.283	27.492	17.185	27.492	16.926
stdev	74.849	19.308	74.849	16.282	74.849	16.551
p (t-test)		0.818		0.741		0.735
min	0.828	2.685	0.828	3.590	0.828	2.070
max	435.086	48.353	435.086	45.363	435.086	45.363
n (Samp)	36	8	36	6	36	6
n (Pat)	36	8	36	6	36	6

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	7.735	6.455	7.735	26.437	7.735	26.437
average	19.862	15.239	19.862	26.437	19.862	26.437
stdev	58.569	20.179	58.569	26.765	58.569	26.765
p (t-test)		0.876		0.876		0.876
min	0.828	2.685	0.828	7.511	0.828	7.511
max	435.086	45.363	435.086	45.363	435.086	45.363
n (Samp)	60	4	60	2	60	2
n (Pat)	60	4	60	2	60	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	7.780	28.683	7.780	10.576	7.780	10.560
average	10.793	27.327	10.793	12.559	10.793	12.171
stdev	18.236	19.112	18.236	10.837	18.236	11.283
p (t-test)		0.104		0.853		0.885
min	0.828	3.590	0.828	3.590	0.828	2.070
max	93.490	48.353	93.490	25.493	93.490	25.493
n (Samp)	26	4	26	4	26	4
n (Pat)	26	4	26	4	26	4

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.61	0.116	36	8	0.353
24 hours	0.59	0.131	36	6	0.470
48 hours	0.56	0.131	36	6	0.634

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.49	0.150	60	4	0.967
24 hours	0.71	0.210	60	2	0.322
48 hours	0.71	0.210	60	2	0.322

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.81	0.136	26	4	0.022
24 hours	0.66	0.159	26	4	0.318
48 hours	0.59	0.161	26	4	0.571

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	4.55298	75%	39%	1			
	3.28789	88%	31%	2	3.8	0.2	79.5

Fig. 4 - 21

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	2.08132	100%	17%	3	0.0	0.0	na
	11.7188	50%	72%	4	5.7	0.3	106.6
	21.2171	50%	81%				
	46.2416	13%	92%				
24 hours	3.58953	83%	33%	1			
	3.58953	83%	33%	2	na	na	na
	3.28789	100%	31%	3	na	na	na
	11.7188	50%	72%	4	na	na	na
	21.2171	33%	81%				
	46.2416	0%	92%				
48 hours	3.28789	83%	31%	1			
	3.28789	83%	31%	2	2.0	0.1	58.5
	1.47804	100%	14%	3	0.0	0.0	na
	11.7188	50%	72%	4	3.4	0.2	73.1
	21.2171	33%	81%				
	46.2416	0%	92%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	4.55298	75%	38%	1			
	2.08132	100%	13%	2	0.0	0.0	na
	2.08132	100%	13%	3	2.1	0.1	53.1
	11.0085	25%	70%	4	1.0	0.0	65.5
	16.0061	25%	80%				
	25.8224	25%	90%				
24 hours	7.03642	100%	48%	1			
	7.03642	100%	48%	2	na	na	na
	7.03642	100%	48%	3	na	na	na
	11.0085	50%	70%	4	na	na	na
	16.0061	50%	80%				
	25.8224	50%	90%				
48 hours	7.03642	100%	48%	1			
	7.03642	100%	48%	2	na	na	na
	7.03642	100%	48%	3	na	na	na
	11.0085	50%	70%	4	na	na	na
	16.0061	50%	80%				
	25.8224	50%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	21.7226	75%	92%	1			
	3.28789	100%	38%	2	na	na	na
	3.28789	100%	38%	3	na	na	na
	9.0843	75%	73%	4	na	na	na
	10.1744	75%	81%				
	21.7226	75%	92%				
24 hours	3.58953	75%	42%	1			
	3.28789	100%	38%	2	na	na	na
	3.28789	100%	38%	3	na	na	na
	9.0843	50%	73%	4	na	na	na
	10.1744	50%	81%				
	21.7226	25%	92%				
48 hours	3.28789	75%	38%	1			
	1.47804	100%	15%	2	0.9	0.0	79.2
	1.47804	100%	15%	3	0.0	0.0	na
	9.0843	50%	73%	4	2.0	0.1	72.7
	10.1744	50%	81%				
	21.7226	25%	92%				

Fig. 4 - 22

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sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	233.270	239.095	233.270	249.536	233.270	124.024
average	268.353	267.878	268.353	248.401	268.353	205.426
stdev	145.627	121.217	145.627	122.787	145.627	na
p (t-test)		0.989		0.582		na
min	124.024	127.583	124.024	82.500	124.024	205.426
max	1060.922	588.839	1060.922	585.758	1060.922	205.426
n (Samp)	82	21	82	19	82	1
n (Pat)	47	21	47	19	47	1

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	233.013	275.555	233.013	256.589	233.013	294.084
average	258.968	293.506	258.968	266.426	258.968	284.832
stdev	127.266	131.817	127.266	144.684	127.266	74.548
p (t-test)		0.458		0.842		0.727
min	82.500	167.442	82.500	96.750	82.500	206.090
max	1060.922	588.839	1060.922	585.758	1060.922	354.323
n (Samp)	135	8	135	13	135	3
n (Pat)	78	8	78	13	78	3

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	230.072	226.603	230.072	273.643	230.072	205.207
average	249.164	266.140	249.164	261.575	249.164	205.207
stdev	93.909	121.608	93.909	99.651	93.909	0.310
p (t-test)		0.502		0.667		0.513
min	124.024	127.583	124.024	82.500	124.024	204.988
max	639.273	588.839	639.273	403.263	639.273	205.426
n (Samp)	68	21	68	13	68	2
n (Pat)	37	21	37	13	37	2

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.50	0.071	82	21	0.974
24 hours	0.48	0.073	82	19	0.742
48 hours	0.35	0.249	82	1	0.556

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.61	0.109	135	8	0.324
24 hours	0.50	0.084	135	13	0.995
48 hours	0.67	0.174	135	3	0.319

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.51	0.073	68	21	0.931
24 hours	0.57	0.090	68	13	0.467
48 hours	0.35	0.178	68	2	0.409

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	168.217	71%	13%	1			
	166.667	81%	13%	2	0.3	0.1	1.0
	152.713	90%	7%	3	0.5	0.2	1.2

Fig. 5 - 1

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	266.346	38%	71%	4	0.9	0.4	2.1
	307.351	33%	80%				
	383.614	24%	90%				
24 hours	166.667	74%	13%	1			
	124.024	84%	1%	2	0.6	0.2	1.7
	82.5	95%	0%	3	0.5	0.1	1.5
	266.346	47%	71%	4	1.1	0.4	2.5
	307.351	21%	80%				
	383.614	11%	90%				
48 hours	203.876	100%	35%	1			
	203.876	100%	35%	2	na	na	na
	203.876	100%	35%	3	na	na	na
	266.346	0%	71%	4	na	na	na
	307.351	0%	80%				
	383.614	0%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	254.408	75%	62%	1			
	167.442	88%	16%	2	0.0	0.0	na
	166.667	100%	16%	3	1.5	0.3	8.7
	280.162	50%	70%	4	1.5	0.3	8.7
	308.32	25%	80%				
	386.623	13%	90%				
24 hours	155.568	77%	11%	1			
	145.976	85%	8%	2	0.0	0.0	na
	96.75	92%	1%	3	0.8	0.3	2.1
	280.162	38%	70%	4	0.8	0.3	2.1
	308.32	23%	80%				
	386.623	15%	90%				
48 hours	205.426	100%	39%	1			
	205.426	100%	39%	2	na	na	na
	205.426	100%	39%	3	na	na	na
	280.162	67%	70%	4	na	na	na
	308.32	33%	80%				
	386.623	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	181.323	71%	19%	1			
	156.731	81%	10%	2	0.5	0.2	1.3
	145.976	90%	7%	3	0.2	0.0	0.9
	257.372	38%	71%	4	1.1	0.5	2.5
	291.987	33%	81%				
	358.806	24%	91%				
24 hours	198.028	77%	31%	1			
	188.979	85%	24%	2	1.0	0.2	4.7
	124.024	92%	1%	3	0.6	0.1	4.0
	257.372	54%	71%	4	1.8	0.5	6.4
	291.987	38%	81%				
	358.806	23%	91%				
48 hours	203.876	100%	35%	1			
	203.876	100%	35%	2	na	na	na
	203.876	100%	35%	3	na	na	na
	257.372	0%	71%	4	na	na	na
	291.987	0%	81%				
	358.806	0%	91%				

Fig. 5 - 2

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Angiopoietin-1

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1864.239	1507.705	1864.239	1157.895	1864.239	1556.391
average	2521.995	1944.516	2521.995	2096.369	2521.995	2136.533
stdev	2433.927	1657.582	2433.927	2493.312	2433.927	2020.430
p (t-test)		0.108		0.266		0.455
min	192.308	171.053	192.308	144.737	192.308	144.737
max	14800.944	8056.338	14800.944	9428.958	14800.944	8584.574
n (Samp)	150	54	150	57	150	25
n (Pat)	106	54	106	57	106	25

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1614.710	1534.586	1614.710	1152.824	1614.710	1977.444
average	2430.000	2016.082	2430.000	1599.623	2430.000	2527.573
stdev	2408.093	1781.629	2408.093	1643.209	2408.093	2148.769
p (t-test)		0.451		0.098		0.886
min	144.737	294.737	144.737	134.615	144.737	553.030
max	14800.944	8238.160	14800.944	7308.642	14800.944	8660.352
n (Samp)	308	20	308	24	308	13
n (Pat)	171	20	171	24	171	13

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1647.059	1559.084	1647.059	1203.008	1647.059	1556.391
average	2538.222	1910.738	2538.222	2203.885	2538.222	2103.950
stdev	2606.304	1713.256	2606.304	2585.014	2606.304	2132.893
p (t-test)		0.124		0.456		0.470
min	192.308	171.053	192.308	144.737	192.308	144.737
max	14800.944	8056.338	14800.944	9428.958	14800.944	8584.574
n (Samp)	127	48	127	46	127	21
n (Pat)	86	48	86	46	86	21

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.44	0.045	150	54	0.186
24 hours	0.40	0.043	150	57	0.021
48 hours	0.45	0.061	150	25	0.446

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.49	0.066	308	20	0.822
24 hours	0.39	0.056	308	24	0.059
48 hours	0.55	0.084	308	13	0.518

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.44	0.048	127	48	0.196
24 hours	0.42	0.048	127	46	0.109
48 hours	0.45	0.066	127	21	0.485

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	815.217	70%	24%	1			

Fig. 5 - 3

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	651.515	81%	19%	2	1.8	1.1	2.8
	468.75	91%	13%	3	1.9	1.2	3.0
	2862.14	19%	70%	4	2.1	1.4	3.3
	3912.33	13%	80%				
	5391.07	4%	90%				
24 hours	815.217	70%	24%	1			
	559.091	81%	15%	2	0.6	0.3	1.0
	320	91%	5%	3	3.0	2.0	4.3
	2862.14	19%	70%	4	1.7	1.1	2.6
	3912.33	18%	80%				
	5391.07	12%	90%				
48 hours	773.585	72%	23%	1			
	739.13	80%	23%	2	1.2	0.5	2.8
	496.575	92%	15%	3	1.2	0.5	2.8
	2862.14	20%	70%	4	1.8	0.8	3.7
	3912.33	12%	80%				
	5391.07	8%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	1109.97	70%	36%	1			
	818.182	80%	26%	2	3.7	1.0	13.8
	651.515	90%	19%	3	3.7	1.0	13.8
	2600.42	25%	70%	4	2.1	0.4	9.4
	3897.2	10%	80%				
	5649.38	5%	90%				
24 hours	818.182	71%	26%	1			
	511.538	83%	15%	2	3.2	0.8	12.3
	320	96%	7%	3	5.5	1.6	18.9
	2600.42	8%	70%	4	3.2	0.8	12.3
	3897.2	8%	80%				
	5649.38	4%	90%				
48 hours	1263.74	77%	41%	1			
	1030.84	85%	33%	2	1.5	0.3	8.2
	750	92%	23%	3	2.1	0.4	9.4
	2600.42	31%	70%	4	2.0	0.4	9.3
	3897.2	8%	80%				
	5649.38	8%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	713.636	71%	22%	1			
	568.182	81%	16%	2	1.8	1.1	2.9
	375	92%	8%	3	1.1	0.7	1.9
	2710.36	19%	70%	4	2.1	1.3	3.3
	4010.38	13%	80%				
	5572.12	4%	91%				
24 hours	739.13	72%	24%	1			
	493.75	80%	13%	2	0.8	0.4	1.4
	281.25	91%	3%	3	1.8	1.2	2.9
	2710.36	24%	70%	4	1.5	0.9	2.4
	4010.38	20%	80%				
	5572.12	11%	91%				
48 hours	773.585	71%	24%	1			
	695.652	81%	22%	2	2.6	0.9	7.6
	375	90%	8%	3	1.8	0.6	5.7
	2710.36	14%	70%	4	2.2	0.7	6.6
	4010.38	14%	80%				
	5572.12	10%	91%				

Fig. 5 - 4

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Angiotensin-1 receptor

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	20.998	16.862	20.998	16.561	20.998	15.443
average	21.861	20.162	21.861	19.040	21.861	15.443
stdev	7.461	11.892	7.461	9.095	7.461	2.896
p (t-test)		0.548		0.240		0.231
min	0.003	0.081	0.003	0.081	0.003	13.396
max	39.388	39.247	39.388	34.294	39.388	17.491
n (Samp)	77	9	77	12	77	2
n (Pat)	19	9	19	12	19	2

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	20.156	24.021	20.156	24.654	20.156	20.680
average	21.019	26.814	21.019	24.532	21.019	20.152
stdev	7.537	10.461	7.537	6.597	7.537	6.281
p (t-test)		0.100		0.231		0.844
min	0.003	15.207	0.003	15.872	0.003	13.624
max	39.571	39.247	39.571	34.294	39.571	26.153
n (Samp)	117	5	117	7	117	3
n (Pat)	26	5	26	7	26	3

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	20.360	16.475	20.360	15.382	20.360	15.443
average	21.251	15.155	21.251	17.011	21.251	15.443
stdev	6.725	7.491	6.725	8.281	6.725	2.896
p (t-test)		0.029		0.080		0.231
min	10.370	0.081	10.370	0.081	10.370	13.396
max	39.148	24.942	39.148	30.292	39.148	17.491
n (Samp)	58	7	58	10	58	2
n (Pat)	14	7	14	10	14	2

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.41	0.096	77	9	0.370
24 hours	0.40	0.084	77	12	0.245
48 hours	0.19	0.116	77	2	0.007

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.67	0.135	117	5	0.212
24 hours	0.65	0.116	117	7	0.198
48 hours	0.47	0.166	117	3	0.857

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.28	0.089	58	7	0.013
24 hours	0.35	0.087	58	10	0.077
48 hours	0.22	0.130	58	2	0.028

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR
0 hours	14.486	78%	17%	1		

Fig. 5 - 5

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	14.4271	89%	17%	2	0.5	0.0	11.5
	0.00293	100%	1%	3	1.0	0.1	8.6
	25.0487	22%	70%	4	2.4	0.4	12.7
	27.4854	22%	81%				
	33.3466	22%	91%				
24 hours	14.4271	75%	17%	1			
	13.8249	83%	14%	2	0.7	0.1	4.2
	13.076	92%	13%	3	0.3	0.0	5.2
	25.0487	25%	70%	4	2.5	0.8	8.3
	27.4854	17%	81%				
	33.3466	8%	91%				
48 hours	13.076	100%	13%	1			
	13.076	100%	13%	2	na	na	na
	13.076	100%	13%	3	na	na	na
	25.0487	0%	70%	4	na	na	na
	27.4854	0%	81%				
	33.3466	0%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	19.2896	80%	46%	1			
	19.2896	80%	46%	2	1.0	0.0	55.6
	15.1529	100%	21%	3	1.0	0.0	57.7
	23.2464	60%	70%	4	2.0	0.1	43.3
	26.8283	40%	80%				
	31.384	40%	91%				
24 hours	21.8076	71%	60%	1			
	17.5115	86%	32%	2	1.0	0.0	57.4
	15.7824	100%	24%	3	2.1	0.1	44.7
	23.2464	57%	70%	4	3.2	0.2	50.2
	26.8283	43%	80%				
	31.384	14%	91%				
48 hours	13.3956	100%	12%	1			
	13.3956	100%	12%	2	1.0	0.0	57.7
	13.3956	100%	12%	3	0.0	0.0	na
	23.2464	33%	70%	4	1.0	0.0	57.7
	26.8283	0%	80%				
	31.384	0%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	14.486	71%	19%	1			
	14.4271	86%	19%	2	na	na	na
	0	100%	0%	3	na	na	na
	25.0487	0%	71%	4	na	na	na
	26.9873	0%	81%				
	29.849	0%	91%				
24 hours	14.4271	70%	19%	1			
	13.8249	80%	16%	2	0.5	0.0	11.4
	13.076	90%	14%	3	1.0	0.1	9.2
	25.0487	20%	71%	4	3.1	0.6	16.5
	26.9873	20%	81%				
	29.849	10%	91%				
48 hours	13.076	100%	14%	1			
	13.076	100%	14%	2	na	na	na
	13.076	100%	14%	3	na	na	na
	25.0487	0%	71%	4	na	na	na
	26.9873	0%	81%				
	29.849	0%	91%				

Fig. 5 - 6

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ENA-78 (C-X-C chemokine motif 5)

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.713	0.595	0.713	0.501	0.713	0.499
average	1.092	0.792	1.092	0.889	1.092	1.042
stdev	1.186	0.827	1.186	1.722	1.186	1.432
p (t-test)		0.073		0.274		0.842
min	0.022	0.038	0.022	0.001	0.022	0.092
max	8.730	4.170	8.730	12.500	8.730	6.040
n (Samp)	257	56	257	61	257	26
n (Pat)	112	56	112	61	112	26

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.628	0.692	0.628	0.523	0.628	0.461
average	1.107	0.690	1.107	0.770	1.107	0.704
stdev	1.962	0.541	1.962	0.729	1.962	0.608
p (t-test)		0.309		0.383		0.443
min	0.001	0.050	0.001	0.031	0.001	0.122
max	32.500	2.010	32.500	3.110	32.500	1.920
n (Samp)	459	23	459	26	459	14
n (Pat)	180	23	180	26	180	14

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.714	0.495	0.714	0.505	0.714	0.576
average	1.074	0.759	1.074	0.948	1.074	1.075
stdev	1.153	0.843	1.153	1.818	1.153	1.490
p (t-test)		0.067		0.531		0.996
min	0.031	0.038	0.031	0.001	0.031	0.092
max	8.730	4.170	8.730	12.500	8.730	6.040
n (Samp)	213	51	213	53	213	23
n (Pat)	89	51	89	53	89	23

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.41	0.040	257	56	0.019
24 hours	0.37	0.037	257	61	0.001
48 hours	0.42	0.056	257	26	0.148

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.44	0.059	459	23	0.318
24 hours	0.44	0.056	459	26	0.325
48 hours	0.43	0.074	459	14	0.352

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.38	0.041	213	51	0.005
24 hours	0.39	0.041	213	53	0.010
48 hours	0.43	0.060	213	23	0.236

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.278	71%	18%	1			

Fig. 5 - 7

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	0.173	80%	9%	2	1.2	0.8	1.8
	0.0801	91%	3%	3	1.0	0.7	1.5
	1.18	21%	70%	4	2.3	1.6	3.2
	1.61	13%	80%				
	2.41	5%	90%				
24 hours	0.284	70%	19%	1			
	0.176	80%	9%	2	1.4	0.9	2.2
	0.111	90%	5%	3	2.1	1.4	3.1
	1.18	18%	70%	4	3.2	2.2	4.7
	1.61	8%	80%				
	2.41	5%	90%				
48 hours	0.248	73%	16%	1			
	0.204	81%	13%	2	1.2	0.6	2.7
	0.13	92%	5%	3	0.8	0.3	2.0
	1.18	23%	70%	4	2.5	1.3	4.6
	1.61	15%	80%				
	2.41	12%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.284	74%	24%	1			
	0.154	83%	11%	2	2.1	1.0	4.5
	0.0919	91%	5%	3	1.0	0.4	2.8
	1.12	17%	70%	4	1.8	0.8	4.0
	1.52	9%	80%				
	2.28	0%	90%				
24 hours	0.272	73%	23%	1			
	0.173	81%	13%	2	0.7	0.3	1.4
	0.107	92%	6%	3	0.9	0.5	1.6
	1.12	27%	70%	4	1.2	0.7	2.0
	1.52	19%	80%				
	2.28	4%	90%				
48 hours	0.248	71%	20%	1			
	0.18	86%	14%	2	1.0	0.3	3.9
	0.149	93%	10%	3	1.0	0.3	3.9
	1.12	21%	70%	4	1.7	0.6	5.0
	1.52	14%	80%				
	2.28	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.244	71%	16%	1			
	0.15	80%	6%	2	1.1	0.7	1.8
	0.111	90%	4%	3	1.3	0.8	2.0
	1.27	18%	71%	4	3.0	2.0	4.4
	1.61	12%	80%				
	2.23	6%	90%				
24 hours	0.326	72%	22%	1			
	0.264	81%	18%	2	1.5	0.9	2.4
	0.127	91%	5%	3	1.9	1.2	3.1
	1.27	17%	71%	4	3.2	2.1	4.9
	1.61	9%	80%				
	2.23	6%	90%				
48 hours	0.274	74%	19%	1			
	0.244	83%	16%	2	2.5	0.9	6.9
	0.147	91%	6%	3	1.4	0.4	4.6
	1.27	13%	71%	4	3.4	1.3	8.6
	1.61	13%	80%				
	2.23	13%	90%				

Fig. 5 - 8

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Endoglin

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	4.394	3.282	4.394	4.855	4.394	1.904
average	4.196	3.955	4.196	4.855	4.196	2.007
stdev	1.162	2.601	1.162	2.278	1.162	na
p (t-test)		0.607		0.445		na
min	1.904	1.912	1.904	3.245	1.904	2.007
max	7.699	12.339	7.699	6.466	7.699	2.007
n (Samp)	57	13	57	2	57	1
n (Pat)	37	13	37	2	37	1

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	3.952	3.209	3.952	3.463	3.952	4.302
average	4.063	3.182	4.063	4.001	4.063	4.302
stdev	1.374	0.842	1.374	1.739	1.374	1.626
p (t-test)		0.125		0.931		0.809
min	1.904	1.912	1.904	2.613	1.904	3.152
max	12.339	4.287	12.339	6.466	12.339	5.452
n (Samp)	89	6	89	4	89	2
n (Pat)	61	6	61	4	61	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	4.425	3.582	4.425	4.529	4.425	1.912
average	4.167	4.276	4.167	4.529	4.167	2.007
stdev	1.146	2.559	1.146	1.816	1.146	na
p (t-test)		0.826		0.670		na
min	1.912	2.125	1.912	3.245	1.912	2.007
max	6.988	12.339	6.988	5.813	6.988	2.007
n (Samp)	42	14	42	2	42	1
n (Pat)	27	14	27	2	27	1

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.29	0.072	57	13	0.003
24 hours	0.59	0.216	57	2	0.685
48 hours	0.04	0.041	57	1	0.000

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.27	0.089	89	6	0.010
24 hours	0.43	0.141	89	4	0.639
48 hours	0.58	0.214	89	2	0.714

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.38	0.083	42	14	0.134
24 hours	0.57	0.217	42	2	0.742
48 hours	0.02	0.033	42	1	0.000

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	2.91265	77%	18%	1			

Fig. 5 - 9

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	2.60736	85%	11%	2	1.1	0.0	67.9
	2.56967	92%	11%	3	6.5	0.5	89.6
	4.64362	8%	70%	4	9.3	0.7	122.4
	4.86196	8%	81%				
	5.43169	8%	91%				
24 hours	3.18596	100%	21%	1			
	3.18596	100%	21%	2	0.0	0.0	na
	3.18596	100%	21%	3	0.0	0.0	na
	4.64362	50%	70%	4	0.9	0.0	62.6
	4.86196	50%	81%				
	5.43169	50%	91%				
48 hours	1.91176	100%	4%	1			
	1.91176	100%	4%	2	na	na	na
	1.91176	100%	4%	3	na	na	na
	4.64362	0%	70%	4	na	na	na
	4.86196	0%	81%				
	5.43169	0%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	2.60736	83%	9%	1			
	2.60736	83%	9%	2	na	na	na
	1.90441	100%	1%	3	na	na	na
	4.50153	0%	71%	4	na	na	na
	4.71626	0%	81%				
	5.0502	0%	91%				
24 hours	2.93944	75%	17%	1			
	2.60736	100%	9%	2	1.0	0.0	62.7
	2.60736	100%	9%	3	0.0	0.0	na
	4.50153	25%	71%	4	2.2	0.1	49.5
	4.71626	25%	81%				
	5.0502	25%	91%				
48 hours	3.12701	100%	22%	1			
	3.12701	100%	22%	2	0.0	0.0	na
	3.12701	100%	22%	3	0.0	0.0	na
	4.50153	50%	71%	4	1.0	0.0	57.7
	4.71626	50%	81%				
	5.0502	50%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.12701	71%	21%	1			
	2.91265	86%	21%	2	0.5	0.0	12.0
	2.56967	93%	12%	3	4.5	0.8	25.0
	4.64362	14%	71%	4	3.3	0.6	19.2
	4.8773	14%	81%				
	5.43169	14%	90%				
24 hours	3.18596	100%	24%	1			
	3.18596	100%	24%	2	0.0	0.0	na
	3.18596	100%	24%	3	0.0	0.0	na
	4.64362	50%	71%	4	1.0	0.0	74.6
	4.8773	50%	81%				
	5.43169	50%	90%				
48 hours	1.91176	100%	2%	1			
	1.91176	100%	2%	2	na	na	na
	1.91176	100%	2%	3	na	na	na
	4.64362	0%	71%	4	na	na	na
	4.8773	0%	81%				
	5.43169	0%	90%				

Fig. 5 - 10

Epithelial cell-adhesion molecule

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	789.235	1210.037	789.235	3017.017	789.235	na
average	4083.253	2286.898	4083.253	3017.017	4083.253	na
stdev	5914.142	2659.564	5914.142	4264.441	5914.142	na
p (t-test)		0.353		0.803		na
min	1.602	1.602	1.602	1.602	1.602	na
max	17843.902	7751.351	17843.902	6032.432	17843.902	na
n (Samp)	48	10	48	2	48	0
n (Pat)	30	10	30	2	30	0

sCr only

	0 hr prior toAKI stage		24 hr prior toAKI stage		48 hr prior toAKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	822.435	3827.027	822.435	1.602	822.435	4922.752
average	3639.201	4759.755	3639.201	1768.769	3639.201	4922.752
stdev	5239.637	6111.592	5239.637	3534.334	5239.637	6959.557
p (t-test)		0.648		0.484		0.735
min	1.602	1.602	1.602	1.602	1.602	1.602
max	17843.902	14917.073	17843.902	7070.270	17843.902	9843.902
n (Samp)	73	5	73	4	73	2
n (Pat)	48	5	48	4	48	2

UO only

	0 hr prior toAKI stage		24 hr prior toAKI stage		48 hr prior toAKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1137.413	1331.320	1137.413	3017.017	1137.413	na
average	4415.177	2629.981	4415.177	3017.017	4415.177	na
stdev	5813.515	2725.796	5813.515	4264.441	5813.515	na
p (t-test)		0.333		0.741		na
min	1.602	1.602	1.602	1.602	1.602	na
max	15268.293	7751.351	15268.293	6032.432	15268.293	na
n (Samp)	34	11	34	2	34	0
n (Pat)	20	11	20	2	20	0

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.53	0.102	48	10	0.791
24 hours	0.47	0.207	48	2	0.900
48 hours	nd	nd	48	0	nd

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.55	0.137	73	5	0.742
24 hours	0.32	0.122	73	4	0.148
48 hours	0.50	0.208	73	2	0.987

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.50	0.101	34	11	1.000
24 hours	0.45	0.205	34	2	0.802
48 hours	nd	nd	34	0	nd

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR
0 hours	452.55	70%	42%	1		

Fig. 5 - 11

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	1.60233	80%	40%	2	na	na	na
	0	100%	0%	3	na	na	na
	2885.42	40%	71%	4	na	na	na
	12517.1	0%	81%				
	14468.3	0%	92%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	0.0	0.0	na
	2885.42	50%	71%	4	1.1	0.0	77.4
	12517.1	0%	81%				
	14468.3	0%	92%				
48 hours	na	na	na	1			
	na	na	na	2	na	na	na
	na	na	na	3	na	na	na
	na	na	na	4	na	na	na
	na	na	na				
	na	na	na				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	1.0	0.1	8.9
	3904.41	40%	71%	4	0.4	0.0	10.5
	8400	20%	81%				
	13590.2	20%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	0.0	0.0	na
	3904.41	25%	71%	4	3.6	0.2	60.9
	8400	0%	81%				
	13590.2	0%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	0.0	0.0	na
	3904.41	50%	71%	4	1.1	0.0	66.8
	8400	50%	81%				
	13590.2	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	49.6324	73%	32%	1			
	1.60233	82%	32%	2	1.7	0.2	13.7
	0	100%	0%	3	2.6	0.4	18.4
	3904.41	36%	71%	4	0.9	0.1	9.7
	13590.2	0%	85%				
	14468.3	0%	91%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	3904.41	50%	71%	4	na	na	na
	13590.2	0%	85%				
	14468.3	0%	91%				
48 hours	na	na	na	1			
	na	na	na	2	na	na	na
	na	na	na	3	na	na	na
	na	na	na	4	na	na	na
	na	na	na				
	na	na	na				

Fig. 5 - 12

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Heme oxygenase 1

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	3.160	4.644	3.160	2.209	3.160	9.958
average	4.353	7.144	4.353	5.725	4.353	9.958
stdev	4.258	6.373	4.258	8.747	4.258	9.956
p (t-test)		0.015		0.248		0.074
min	0.757	0.905	0.757	0.331	0.757	2.918
max	27.089	25.279	27.089	38.879	27.089	16.998
n (Samp)	107	20	107	26	107	2
n (Pat)	42	20	42	26	42	2

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	3.437	10.883	3.437	3.495	3.437	7.699
average	4.670	12.053	4.670	10.305	4.670	12.227
stdev	4.524	9.671	4.524	13.132	4.524	12.107
p (t-test)		0.000		0.000		0.002
min	0.692	2.478	0.692	0.331	0.692	3.458
max	27.089	32.350	27.089	39.500	27.089	30.051
n (Samp)	178	8	178	15	178	4
n (Pat)	69	8	69	15	69	4

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	3.642	3.994	3.642	2.470	3.642	3.159
average	4.427	6.499	4.427	4.830	4.427	7.692
stdev	3.550	6.106	3.550	6.139	3.550	8.061
p (t-test)		0.051		0.698		0.139
min	0.905	0.905	0.905	0.724	0.905	2.918
max	22.382	25.279	22.382	26.422	22.382	16.998
n (Samp)	83	19	83	20	83	3
n (Pat)	32	19	32	20	32	3

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.66	0.071	107	20	0.024
24 hours	0.44	0.061	107	26	0.288
48 hours	0.71	0.208	107	2	0.301

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.80	0.095	178	8	0.001
24 hours	0.58	0.080	178	15	0.335
48 hours	0.79	0.135	178	4	0.029

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.60	0.075	83	19	0.201
24 hours	0.41	0.068	83	20	0.199
48 hours	0.60	0.177	83	3	0.562

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.32031	70%	54%	1			

Fig. 5 - 13

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	2.52294	80%	41%	2	1.0	0.2	4.1
	1.60924	90%	19%	3	1.3	0.4	4.8
	4.60601	50%	70%	4	4.2	1.5	11.6
	4.95016	50%	80%				
	9.00847	30%	91%				
24 hours	1.41256	73%	16%	1			
	1.19141	81%	10%	2	0.3	0.1	0.9
	0.72428	92%	0%	3	0.6	0.3	1.3
	4.60601	31%	70%	4	1.4	0.8	2.6
	4.95016	31%	80%				
	9.00847	15%	91%				
48 hours	2.90337	100%	46%	1			
	2.90337	100%	46%	2	na	na	na
	2.90337	100%	46%	3	na	na	na
	4.60601	50%	70%	4	na	na	na
	4.95016	50%	80%				
	9.00847	50%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	5.00283	75%	76%	1			
	3.86905	88%	57%	2	na	na	na
	2.39415	100%	35%	3	na	na	na
	4.79434	75%	70%	4	na	na	na
	6.39132	63%	80%				
	9.55164	50%	90%				
24 hours	2.52856	73%	38%	1			
	1.81738	80%	23%	2	0.7	0.2	2.5
	0.72428	93%	2%	3	0.5	0.1	2.3
	4.79434	40%	70%	4	1.5	0.6	3.8
	6.39132	40%	80%				
	9.55164	33%	90%				
48 hours	6.0704	75%	79%	1			
	3.41553	100%	50%	2	na	na	na
	3.41553	100%	50%	3	na	na	na
	4.79434	75%	70%	4	na	na	na
	6.39132	50%	80%				
	9.55164	25%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.17214	74%	46%	1			
	2.39415	84%	33%	2	1.7	0.5	6.0
	1.41256	95%	13%	3	1.0	0.2	4.4
	4.86111	42%	71%	4	3.3	1.1	9.8
	6.26285	42%	81%				
	9.00847	26%	90%				
24 hours	1.55599	70%	14%	1			
	1.28255	80%	11%	2	0.1	0.0	1.6
	1.11328	90%	6%	3	0.8	0.3	2.0
	4.86111	30%	71%	4	1.6	0.7	3.4
	6.26285	25%	81%				
	9.00847	15%	90%				
48 hours	2.90337	100%	39%	1			
	2.90337	100%	39%	2	na	na	na
	2.90337	100%	39%	3	na	na	na
	4.86111	33%	71%	4	na	na	na
	6.26285	33%	81%				
	9.00847	33%	90%				

Fig. 5 - 14

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Interleukin-1 receptor, type II

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	10985.534	11443.237	10985.534	10355.156	10985.534	na
average	13974.069	13261.331	13974.069	15204.798	13974.069	na
stdev	12388.526	6314.468	12388.526	10981.262	12388.526	na
p (t-test)		0.877		0.741		na
min	3061.967	5139.251	3061.967	5981.981	3061.967	na
max	56549.592	23105.619	56549.592	44711.687	56549.592	na
n (Samp)	26	8	26	17	26	0
n (Pat)	25	8	25	17	25	0

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	11554.246	8979.846	11554.246	10355.156	11554.246	2160.038
average	13983.592	8979.846	13983.592	29731.997	13983.592	12731.082
stdev	10628.390	3218.550	10628.390	46953.355	10628.390	na
p (t-test)		0.513		0.040		na
min	2160.038	6703.987	2160.038	7159.935	2160.038	12731.082
max	56549.592	11255.704	56549.592	150973.398	56549.592	12731.082
n (Samp)	47	2	47	9	47	1
n (Pat)	44	2	44	9	44	1

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	10409.535	11630.771	10409.535	10696.109	10409.535	3061.967
average	13837.547	13547.850	13837.547	15151.297	13837.547	9971.162
stdev	12234.719	6764.002	12234.719	9389.527	12234.719	na
p (t-test)		0.953		0.752		na
min	3061.967	5139.251	3061.967	5981.981	3061.967	9971.162
max	56549.592	23105.619	56549.592	36344.165	56549.592	9971.162
n (Samp)	27	7	27	11	27	1
n (Pat)	25	7	25	11	25	1

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.55	0.120	26	8	0.688
24 hours	0.53	0.091	26	17	0.729
48 hours	nd	nd	26	0	nd

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.33	0.174	47	2	0.327
24 hours	0.53	0.107	47	9	0.749
48 hours	0.68	0.301	47	1	0.548

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.57	0.126	27	7	0.600
24 hours	0.56	0.105	27	11	0.554
48 hours	0.44	0.287	27	1	0.846

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	10409.5	75%	50%	1			

Fig. 5 - 15

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	5789.15	88%	15%	2	0.9	0.1	11.2
	5058.64	100%	8%	3	0.4	0.0	14.9
	12577.1	38%	73%	4	1.5	0.2	14.8
	14290	38%	81%				
	25004.5	0%	92%				
24 hours	8843.12	71%	35%	1			
	8442.27	82%	31%	2	7.0	1.0	51.5
	5981.98	94%	15%	3	1.5	0.2	12.5
	12577.1	29%	73%	4	3.3	0.5	23.3
	14290	29%	81%				
	25004.5	18%	92%				
48 hours	na	na	na	1			
	na	na	na	2	na	na	na
	na	na	na	3	na	na	na
	na	na	na	4	na	na	na
	na	na	na				
	na	na	na				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	5981.98	100%	17%	1			
	5981.98	100%	17%	2	na	na	na
	5981.98	100%	17%	3	na	na	na
	14290	0%	70%	4	na	na	na
	18771.6	0%	81%				
	25004.5	0%	91%				
24 hours	8442.27	78%	28%	1			
	7911.48	89%	26%	2	1.6	0.2	11.8
	5981.98	100%	17%	3	0.5	0.0	12.0
	14290	33%	70%	4	1.6	0.2	11.8
	18771.6	22%	81%				
	25004.5	22%	91%				
48 hours	12635.8	100%	68%	1			
	12635.8	100%	68%	2	na	na	na
	12635.8	100%	68%	3	na	na	na
	14290	0%	70%	4	na	na	na
	18771.6	0%	81%				
	25004.5	0%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	10409.5	71%	52%	1			
	5789.15	86%	15%	2	0.4	0.0	12.6
	5058.64	100%	7%	3	0.4	0.0	14.9
	11973.7	43%	70%	4	1.5	0.2	14.8
	14290	43%	81%				
	26525.5	0%	93%				
24 hours	9110.45	73%	41%	1			
	8691.43	82%	33%	2	1.5	0.2	13.4
	7911.48	91%	26%	3	1.0	0.1	12.4
	11973.7	36%	70%	4	2.3	0.3	18.6
	14290	36%	81%				
	26525.5	9%	93%				
48 hours	9862.57	100%	44%	1			
	9862.57	100%	44%	2	na	na	na
	9862.57	100%	44%	3	na	na	na
	11973.7	0%	70%	4	na	na	na
	14290	0%	81%				
	26525.5	0%	93%				

Fig. 5 - 16

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Interleukin-6 receptor subunit-alpha

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	16994.159	17925.774	16994.159	15960.218	16994.159	na
average	17874.200	18940.321	17874.200	16637.415	17874.200	na
stdev	6283.446	6718.643	6283.446	9148.713	6283.446	na
p (t-test)		0.682		0.601		na
min	9297.212	12468.352	9297.212	6579.306	9297.212	na
max	33586.605	33430.243	33586.605	45868.574	33586.605	na
n (Samp)	26	8	26	17	26	0
n (Pat)	25	8	25	17	25	0

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	15723.485	16216.095	15723.485	17864.627	15723.485	6579.306
average	17053.057	16216.095	17053.057	22496.396	17053.057	20413.991
stdev	6433.283	3050.506	6433.283	11811.343	6433.283	na
p (t-test)		0.857		0.050		na
min	6579.306	14059.062	6579.306	8737.351	6579.306	20413.991
max	33586.605	18373.129	33586.605	45868.574	33586.605	20413.991
n (Samp)	47	2	47	9	47	1
n (Pat)	44	2	44	9	44	1

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	14603.356	18373.129	14603.356	13992.231	14603.356	8737.351
average	18118.020	19637.644	18118.020	14094.769	18118.020	9278.343
stdev	8283.974	6937.226	8283.974	5299.964	8283.974	na
p (t-test)		0.659		0.146		na
min	8737.351	12468.352	8737.351	6579.306	8737.351	9278.343
max	45868.574	33430.243	45868.574	25170.902	45868.574	9278.343
n (Samp)	27	7	27	11	27	1
n (Pat)	25	7	25	11	25	1

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.56	0.120	26	8	0.630
24 hours	0.40	0.088	26	17	0.245
48 hours	nd	nd	26	0	nd

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.54	0.215	47	2	0.843
24 hours	0.62	0.108	47	9	0.267
48 hours	0.77	0.283	47	1	0.347

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.62	0.125	27	7	0.342
24 hours	0.34	0.094	27	11	0.095
48 hours	0.04	0.050	27	1	0.000

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	13902.4	75%	35%	1			

Fig. 5 - 17

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	13152.5	88%	23%	2	0.4	0.0	12.6
	12324.9	100%	15%	3	1.8	0.2	18.9
	19487.1	38%	73%	4	0.9	0.1	11.2
	23927.6	13%	81%				
	25365.5	13%	92%				
24 hours	10715.1	71%	8%	1			
	8969.67	82%	0%	2	2.2	0.4	11.2
	6579.31	94%	0%	3	1.0	0.2	6.0
	19487.1	18%	73%	4	4.0	0.7	22.2
	23927.6	12%	81%				
	25365.5	6%	92%				
48 hours	na	na	na	1			
	na	na	na	2	na	na	na
	na	na	na	3	na	na	na
	na	na	na	4	na	na	na
	na	na	na				
	na	na	na				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	13992.2	100%	43%	1			
	13992.2	100%	43%	2	na	na	na
	13992.2	100%	43%	3	na	na	na
	18720.5	0%	70%	4	na	na	na
	22123.8	0%	81%				
	25365.5	0%	91%				
24 hours	15723.5	78%	51%	1			
	10364	89%	13%	2	0.5	0.0	12.0
	6579.31	100%	2%	3	1.0	0.1	9.8
	18720.5	44%	70%	4	2.4	0.4	15.0
	22123.8	44%	81%				
	25365.5	33%	91%				
48 hours	20308.4	100%	77%	1			
	20308.4	100%	77%	2	na	na	na
	20308.4	100%	77%	3	na	na	na
	18720.5	100%	70%	4	na	na	na
	22123.8	0%	81%				
	25365.5	0%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	17389.5	71%	70%	1			
	13152.5	86%	26%	2	0.9	0.0	74.5
	12324.9	100%	19%	3	2.3	0.1	81.0
	17389.5	71%	70%	4	3.5	0.1	87.6
	24925.1	14%	81%				
	31200	14%	93%				
24 hours	10364	73%	7%	1			
	8969.67	82%	4%	2	2.0	0.2	18.1
	8737.35	91%	4%	3	1.0	0.1	11.6
	17389.5	18%	70%	4	3.2	0.4	26.3
	24925.1	9%	81%				
	31200	0%	93%				
48 hours	8737.35	100%	4%	1			
	8737.35	100%	4%	2	na	na	na
	8737.35	100%	4%	3	na	na	na
	17389.5	0%	70%	4	na	na	na
	24925.1	0%	81%				
	31200	0%	93%				

Fig. 5 - 18

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Lymphotactin

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.004	0.004	0.004	0.004	0.004	0.004
average	0.068	0.008	0.068	0.009	0.068	0.011
stdev	0.211	0.023	0.211	0.016	0.211	0.026
p (t-test)		0.036		0.031		0.172
min	0.004	0.004	0.004	0.004	0.004	0.004
max	1.710	0.155	1.710	0.082	1.710	0.118
n (Samp)	257	56	257	61	257	26
n (Pat)	112	56	112	61	112	26

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.004	0.004	0.004	0.004	0.004	0.004
average	0.050	0.017	0.050	0.024	0.050	0.012
stdev	0.179	0.061	0.179	0.067	0.179	0.031
p (t-test)		0.368		0.464		0.424
min	0.004	0.004	0.004	0.004	0.004	0.004
max	1.710	0.297	1.710	0.339	1.710	0.118
n (Samp)	459	23	459	26	459	14
n (Pat)	180	23	180	26	180	14

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.004	0.004	0.004	0.004	0.004	0.004
average	0.076	0.008	0.076	0.020	0.076	0.007
stdev	0.224	0.024	0.224	0.053	0.224	0.014
p (t-test)		0.032		0.070		0.140
min	0.004	0.004	0.004	0.004	0.004	0.004
max	1.710	0.155	1.710	0.309	1.710	0.073
n (Samp)	213	51	213	53	213	23
n (Pat)	89	51	89	53	89	23

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.42	0.040	257	56	0.047
24 hours	0.44	0.040	257	61	0.157
48 hours	0.44	0.057	257	26	0.273

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.44	0.059	459	23	0.351
24 hours	0.51	0.059	459	26	0.882
48 hours	0.46	0.076	459	14	0.567

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.42	0.043	213	51	0.060
24 hours	0.46	0.044	213	53	0.359
48 hours	0.42	0.060	213	23	0.177

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			

Fig. 5 - 19

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	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	58.4	19.2	177.2
	0.00378	4%	81%	4	3.8	1.0	14.1
	0.00378	4%	81%				
	0.144	2%	90%				
	0	100%	0%	1			
24 hours	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	17.6	11.2	27.7
	0.00378	10%	81%	4	1.4	0.7	2.6
	0.00378	10%	81%				
	0.144	0%	90%				
	0	100%	0%	1			
48 hours	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	11.7	3.7	37.2
	0.00378	8%	81%	4	3.2	0.8	12.7
	0.00378	8%	81%				
	0.144	0%	90%				
	0	100%	0%	1			

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	26.7	3.3	214.6
	0.00378	4%	84%	4	0.0	0.0	na
	0.00378	4%	84%				
	0.104	4%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	23.8	2.9	192.8
	0	100%	0%	3	0.0	0.0	na
	0.00378	19%	84%	4	5.1	0.5	55.7
	0.00378	19%	84%				
	0.104	4%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	14.6	1.7	124.9
	0.00378	7%	84%	4	0.0	0.0	na
	0.00378	7%	84%				
	0.104	7%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	3.1	1.5	6.5
	0	100%	0%	3	5.4	2.7	10.6
	0.00378	4%	80%	4	6.3	3.2	12.2
	0.00378	4%	80%				
	0.189	0%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	11.2	7.3	17.3
	0.00378	13%	80%	4	1.2	0.7	2.1
	0.00378	13%	80%				
	0.189	4%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	0.0	0.0	na
	0	100%	0%	3	19.8	2.3	173.0
	0.00378	4%	80%	4	7.8	0.8	78.8
	0.00378	4%	80%				
	0.189	0%	90%				

Fig. 5 - 20

Lymphotoxin-alpha

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.456	0.456	0.456	0.456	0.456	0.456
average	1.984	0.828	1.984	2.169	1.984	1.443
stdev	4.826	1.087	4.826	4.324	4.826	1.675
p (t-test)		0.076		0.785		0.571
min	0.456	0.456	0.456	0.456	0.456	0.456
max	42.200	5.990	42.200	23.200	42.200	5.990
n (Samp)	257	56	257	61	257	26
n (Pat)	112	56	112	61	112	26

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.456	0.456	0.456	0.456	0.456	0.456
average	2.339	3.208	2.339	2.173	2.339	1.504
stdev	15.808	8.353	15.808	4.019	15.808	2.430
p (t-test)		0.794		0.958		0.844
min	0.456	0.456	0.456	0.456	0.456	0.456
max	330.000	40.700	330.000	18.700	330.000	9.480
n (Samp)	459	23	459	26	459	14
n (Pat)	180	23	180	26	180	14

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.456	0.456	0.456	0.456	0.456	0.456
average	1.940	0.780	1.940	2.079	1.940	1.520
stdev	4.467	1.075	4.467	4.007	4.467	1.768
p (t-test)		0.067		0.836		0.656
min	0.456	0.456	0.456	0.456	0.456	0.456
max	34.100	5.990	34.100	23.200	34.100	5.990
n (Samp)	213	51	213	53	213	23
n (Pat)	89	51	89	53	89	23

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.45	0.041	257	56	0.188
24 hours	0.51	0.041	257	61	0.742
48 hours	0.53	0.060	257	26	0.575

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.57	0.064	459	23	0.248
24 hours	0.54	0.059	459	26	0.533
48 hours	0.53	0.080	459	14	0.680

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.44	0.044	213	51	0.182
24 hours	0.52	0.045	213	53	0.642
48 hours	0.54	0.065	213	23	0.507

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	1.0	0.7	1.5
	0	100%	0%	3	1.9	1.3	2.6

Fig. 5 - 21

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	0.456	13%	77%	4	1.6	1.1	2.3
	2.14	13%	81%				
	4.44	4%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	1.4	1.1	1.9
	0	100%	0%	3	0.6	0.4	0.9
	0.456	25%	77%	4	1.1	0.8	1.5
	2.14	23%	81%				
	4.44	15%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	6.0	2.6	14.0
	0	100%	0%	3	0.0	0.0	na
	0.456	31%	77%	4	2.8	1.1	7.4
	2.14	27%	81%				
	4.44	8%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	1.0	0.5	1.9
	0	100%	0%	3	4.5	2.9	7.0
	0.456	10%	79%	4	2.3	1.4	3.7
	1.73	10%	81%				
	4.44	4%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	3.3	2.3	4.9
	0	100%	0%	3	0.8	0.4	1.3
	0.456	25%	79%	4	1.7	1.1	2.6
	1.73	25%	81%				
	4.44	15%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	4.5	1.2	16.4
	0	100%	0%	3	2.1	0.4	9.7
	0.456	30%	79%	4	5.1	1.4	18.3
	1.73	30%	81%				
	4.44	9%	90%				

Fig. 5 - 22

Matrix metalloproteinase-3

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.040	0.059	0.040	0.055	0.040	0.052
average	0.124	0.143	0.124	0.138	0.124	0.199
stdev	0.214	0.246	0.214	0.296	0.214	0.448
p (t-test)		0.561		0.678		0.140
min	0.002	0.002	0.002	0.002	0.002	0.002
max	1.490	1.390	1.490	2.100	1.490	2.160
n (Samp)	257	56	257	61	257	26
n (Pat)	112	56	112	61	112	26

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.055	0.058	0.055	0.045	0.055	0.057
average	0.162	0.162	0.162	0.101	0.162	0.150
stdev	0.303	0.212	0.303	0.183	0.303	0.250
p (t-test)		0.997		0.313		0.883
min	0.002	0.002	0.002	0.002	0.002	0.002
max	2.160	0.732	2.160	0.927	2.160	0.853
n (Samp)	459	23	459	26	459	14
n (Pat)	180	23	180	26	180	14

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.043	0.062	0.043	0.055	0.043	0.039
average	0.111	0.142	0.111	0.148	0.111	0.194
stdev	0.181	0.244	0.181	0.317	0.181	0.470
p (t-test)		0.310		0.263		0.092
min	0.002	0.002	0.002	0.002	0.002	0.002
max	1.190	1.390	1.190	2.100	1.190	2.160
n (Samp)	213	51	213	53	213	23
n (Pat)	89	51	89	53	89	23

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.55	0.043	257	56	0.272
24 hours	0.55	0.042	257	61	0.257
48 hours	0.54	0.061	257	26	0.484

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.53	0.063	459	23	0.614
24 hours	0.48	0.058	459	26	0.736
48 hours	0.51	0.079	459	14	0.946

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.56	0.046	213	51	0.202
24 hours	0.54	0.045	213	53	0.352
48 hours	0.52	0.064	213	23	0.734

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0228	71%	44%	1			
	0	100%	0%	2	1.1	0.7	1.7
	0	100%	0%	3	2.0	1.4	2.8

Fig. 5 - 23

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	0.105	34%	70%	4	1.3	0.9	1.9
	0.188	23%	81%				
	0.315	9%	90%				
24 hours	0.0337	70%	47%	1			
	0	100%	0%	2	1.7	1.2	2.5
	0	100%	0%	3	2.3	1.6	3.3
	0.105	33%	70%	4	1.6	1.1	2.3
	0.188	16%	81%				
	0.315	7%	90%				
48 hours	0.0165	73%	42%	1			
	0	100%	0%	2	12.7	1.4	114.1
	0	100%	0%	3	8.8	0.9	84.3
	0.105	35%	70%	4	6.4	0.6	66.5
	0.188	19%	81%				
	0.315	12%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	10.7	1.2	95.8
	0	100%	0%	3	5.2	0.5	56.2
	0.135	35%	70%	4	7.3	0.8	71.0
	0.22	30%	80%				
	0.422	9%	90%				
24 hours	0.0238	73%	37%	1			
	0	100%	0%	2	2.8	1.1	7.1
	0	100%	0%	3	4.8	2.1	11.0
	0.135	19%	70%	4	0.7	0.1	3.5
	0.22	8%	80%				
	0.422	4%	90%				
48 hours	0.0296	71%	41%	1			
	0	100%	0%	2	6.3	0.6	63.8
	0	100%	0%	3	4.1	0.3	49.2
	0.135	29%	70%	4	3.0	0.2	42.7
	0.22	14%	80%				
	0.422	14%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0238	73%	42%	1			
	0	100%	0%	2	4.2	2.4	7.6
	0	100%	0%	3	3.9	2.2	7.0
	0.104	33%	70%	4	3.0	1.6	5.5
	0.182	24%	80%				
	0.302	10%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	8.9	3.9	20.4
	0	100%	0%	3	6.7	2.9	15.7
	0.104	34%	70%	4	5.5	2.3	13.1
	0.182	19%	80%				
	0.302	13%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	0.7	0.3	1.5
	0	100%	0%	3	0.8	0.4	1.7
	0.104	35%	70%	4	0.7	0.3	1.5
	0.182	17%	80%				
	0.302	9%	90%				

Fig. 5 - 24

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Rantes (C-C motif chemokine 5)

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	10.100	7.210	10.100	6.870	10.100	6.450
average	13.834	10.469	13.834	10.217	13.834	10.827
stdev	13.443	8.619	13.443	11.762	13.443	11.965
p (t-test)		0.074		0.054		0.273
min	0.254	0.146	0.254	0.165	0.254	1.260
max	83.000	31.500	83.000	74.600	83.000	53.400
n (Samp)	257	56	257	61	257	26
n (Pat)	112	56	112	61	112	26

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	8.890	6.450	8.890	6.735	8.890	7.630
average	12.850	10.627	12.850	9.849	12.850	9.918
stdev	13.265	11.763	13.265	9.539	13.265	6.951
p (t-test)		0.431		0.256		0.411
min	0.146	0.312	0.146	0.601	0.146	1.580
max	83.000	52.000	83.000	39.000	83.000	22.600
n (Samp)	459	23	459	26	459	14
n (Pat)	180	23	180	26	180	14

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	9.730	7.330	9.730	7.600	9.730	6.110
average	14.083	9.819	14.083	10.871	14.083	10.710
stdev	13.819	8.326	13.819	12.068	13.819	12.553
p (t-test)		0.036		0.122		0.263
min	0.438	0.146	0.438	0.165	0.438	1.260
max	83.000	31.500	83.000	74.600	83.000	53.400
n (Samp)	213	51	213	53	213	23
n (Pat)	89	51	89	53	89	23

sCr or UO

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.43	0.041	257	56	0.069
24 hours	0.39	0.038	257	61	0.004
48 hours	0.40	0.055	257	26	0.068

sCr only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.44	0.059	459	23	0.281
24 hours	0.43	0.055	459	26	0.205
48 hours	0.48	0.077	459	14	0.764

UO only

Time prior AKI stage	AUC	SE	n _{Cohort 1}	n _{Cohort 2}	p
0 hours	0.40	0.042	213	51	0.015
24 hours	0.41	0.042	213	53	0.025
48 hours	0.38	0.057	213	23	0.030

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	4.64	71%	23%	1			

Fig. 5 - 25

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	2.84	80%	11%	2	1.1	0.8	1.7
	1.1	91%	4%	3	1.5	1.0	2.1
	16.5	21%	70%	4	1.9	1.3	2.6
	20.5	16%	80%				
	28.5	4%	90%				
24 hours	3.54	70%	18%	1			
	2.19	80%	9%	2	1.1	0.7	1.7
	1.72	90%	8%	3	2.2	1.5	3.1
	16.5	16%	70%	4	2.5	1.8	3.6
	20.5	13%	80%				
	28.5	5%	90%				
48 hours	3.31	73%	15%	1			
	3.24	81%	15%	2	0.8	0.3	2.0
	2.04	92%	9%	3	1.4	0.7	3.0
	16.5	19%	70%	4	2.2	1.1	4.2
	20.5	12%	80%				
	28.5	8%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	4.48	74%	26%	1			
	4.08	83%	25%	2	1.3	0.5	3.2
	1.43	91%	8%	3	2.4	1.1	4.9
	15.3	17%	70%	4	1.3	0.5	3.2
	19.4	17%	80%				
	28.5	4%	90%				
24 hours	2.65	73%	15%	1			
	2.19	81%	13%	2	0.7	0.3	1.5
	1.76	92%	10%	3	1.2	0.6	2.3
	15.3	27%	70%	4	1.6	0.9	2.8
	19.4	8%	80%				
	28.5	8%	90%				
48 hours	4.08	71%	25%	1			
	3.31	86%	20%	2	1.0	0.3	3.9
	3.25	93%	20%	3	1.4	0.4	4.4
	15.3	21%	70%	4	1.4	0.4	4.4
	19.4	14%	80%				
	28.5	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.08	71%	10%	1			
	2	80%	5%	2	1.3	0.8	2.0
	1.29	90%	4%	3	1.6	1.0	2.4
	17	18%	71%	4	2.4	1.6	3.5
	20.8	12%	80%				
	29	2%	91%				
24 hours	4.33	72%	19%	1			
	2.66	81%	9%	2	0.8	0.5	1.3
	1.55	91%	5%	3	1.5	1.0	2.2
	17	21%	71%	4	1.9	1.3	2.7
	20.8	13%	80%				
	29	4%	91%				
48 hours	3.24	74%	13%	1			
	2.93	83%	10%	2	0.7	0.2	2.5
	2.19	91%	6%	3	1.9	0.8	4.3
	17	17%	71%	4	2.5	1.1	5.4
	20.8	13%	80%				
	29	9%	91%				

Fig. 5 - 26

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Thrombospondin-1

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2300.310	1372.807	2300.310	537.606	2300.310	177.557
average	2923.396	2015.930	2923.396	537.606	2923.396	426.377
stdev	2268.480	1919.081	2268.480	44.943	2268.480	na
p (t-test)		0.187		0.146		na
min	177.557	455.607	177.557	505.826	177.557	426.377
max	9514.803	7179.276	9514.803	569.386	9514.803	426.377
n (Samp)	56	13	56	2	56	1
n (Pat)	37	13	37	2	37	1

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2124.613	1368.421	2124.613	692.808	2124.613	1667.552
average	2716.908	1465.473	2716.908	638.674	2716.908	1667.552
stdev	2265.338	1036.558	2265.338	331.072	2265.338	854.354
p (t-test)		0.184		0.072		0.517
min	177.557	338.785	177.557	205.966	177.557	1063.433
max	9514.803	3315.549	9514.803	963.115	9514.803	2271.672
n (Samp)	85	6	85	4	85	2
n (Pat)	60	6	60	4	60	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2346.491	939.463	2346.491	3168.209	2346.491	473.131
average	3218.642	1586.047	3218.642	3168.209	3218.642	426.377
stdev	2405.965	1927.197	2405.965	3765.178	2405.965	na
p (t-test)		0.026		0.977		na
min	473.131	286.458	473.131	505.826	473.131	426.377
max	9514.803	7179.276	9514.803	5830.592	9514.803	426.377
n (Samp)	41	14	41	2	41	1
n (Pat)	27	14	27	2	27	1

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.36	0.080	56	13	0.082
24 hours	0.09	0.066	56	2	0.000
48 hours	0.07	0.074	56	1	0.000

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.35	0.104	85	6	0.137
24 hours	0.14	0.068	85	4	0.000
48 hours	0.40	0.189	85	2	0.585

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.22	0.065	41	14	0.000
24 hours	0.41	0.197	41	2	0.665
48 hours	0.00	0.000	41	1	nd

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	694.963	77%	16%	1			

Fig. 5 - 27

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	508.178	85%	9%	2	1.1	0.1	9.8
	473.131	92%	9%	3	3.3	0.6	17.5
	3681.4	15%	71%	4	2.5	0.4	14.1
	4629.93	8%	80%				
	6307.57	8%	91%				
24 hours	473.131	100%	9%	1			
	473.131	100%	9%	2	na	na	na
	473.131	100%	9%	3	na	na	na
	3681.4	0%	71%	4	na	na	na
	4629.93	0%	80%				
	6307.57	0%	91%				
48 hours	373.411	100%	7%	1			
	373.411	100%	7%	2	na	na	na
	373.411	100%	7%	3	na	na	na
	3681.4	0%	71%	4	na	na	na
	4629.93	0%	80%				
	6307.57	0%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	473.131	71%	2%	1			
	315.148	86%	0%	2	0.5	0.0	12.0
	286.458	93%	0%	3	2.4	0.4	15.0
	3741.78	14%	71%	4	7.0	1.2	40.3
	5693.6	7%	80%				
	6486.28	7%	90%				
24 hours	473.131	100%	2%	1			
	473.131	100%	2%	2	0.0	0.0	na
	473.131	100%	2%	3	0.0	0.0	na
	3741.78	50%	71%	4	1.1	0.0	84.7
	5693.6	50%	80%				
	6486.28	0%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	3741.78	0%	71%	4	na	na	na
	5693.6	0%	80%				
	6486.28	0%	90%				

Fig. 5 - 28

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ENA-78 (C-X-C chemokine motif 5)

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.640	0.365	0.640	0.389	0.640	0.351
average	1.120	0.969	1.120	0.741	1.120	0.784
stdev	1.987	1.192	1.987	0.945	1.987	1.383
p (t-test)		0.691		0.258		0.479
min	0.001	0.031	0.001	0.091	0.001	0.033
max	32.500	4.240	32.500	5.380	32.500	6.040
n (Samp)	434	28	434	36	434	18
n (Pat)	173	28	173	36	173	18

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.628	0.328	0.628	0.431	0.628	0.363
average	1.065	1.119	1.065	0.568	1.065	0.651
stdev	1.836	1.617	1.836	0.467	1.836	0.544
p (t-test)		0.944		0.392		0.551
min	0.001	0.130	0.001	0.147	0.001	0.092
max	32.500	4.240	32.500	1.600	32.500	1.450
n (Samp)	542	6	542	10	542	7
n (Pat)	208	6	208	10	208	7

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.643	0.360	0.643	0.389	0.643	0.352
average	1.123	0.819	1.123	0.798	1.123	0.864
stdev	2.119	1.022	2.119	1.027	2.119	1.456
p (t-test)		0.461		0.391		0.629
min	0.001	0.031	0.001	0.091	0.001	0.033
max	32.500	4.170	32.500	5.380	32.500	6.040
n (Samp)	356	27	356	32	356	16
n (Pat)	138	27	138	32	138	16

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.43	0.053	434	28	0.177
24 hours	0.41	0.046	434	36	0.045
48 hours	0.35	0.059	434	18	0.012

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.43	0.112	542	6	0.528
24 hours	0.39	0.083	542	10	0.200
48 hours	0.43	0.103	542	7	0.468

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.40	0.053	356	27	0.047
24 hours	0.41	0.050	356	32	0.081
48 hours	0.38	0.066	356	16	0.068

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.227	71%	17%	1			
	0.128	82%	8%	2	0.6	0.3	1.3
	0.0944	93%	5%	3	0.6	0.2	1.2

Fig. 6 - 1

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	1.12	25%	70%	4	2.0	1.2	3.2
	1.56	18%	80%				
	2.28	18%	90%				
24 hours	0.269	72%	21%	1			
	0.176	81%	13%	2	1.0	0.6	1.8
	0.137	92%	9%	3	1.6	1.0	2.7
	1.12	19%	70%	4	1.6	1.0	2.7
	1.56	11%	80%				
	2.28	3%	90%				
48 hours	0.227	72%	17%	1			
	0.0848	83%	4%	2	1.0	0.3	3.8
	0.0585	94%	3%	3	1.7	0.6	5.0
	1.12	17%	70%	4	2.4	0.9	6.4
	1.56	6%	80%				
	2.28	6%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.154	83%	12%	1			
	0.154	83%	12%	2	0.0	0.0	na
	0.128	100%	9%	3	1.0	0.1	7.3
	1.1	33%	70%	4	1.0	0.1	7.3
	1.49	33%	80%				
	2.2	17%	90%				
24 hours	0.3	70%	27%	1			
	0.176	80%	14%	2	3.0	0.2	42.8
	0.149	90%	11%	3	3.0	0.2	42.8
	1.1	10%	70%	4	3.0	0.2	42.8
	1.49	10%	80%				
	2.2	0%	90%				
48 hours	0.287	71%	26%	1			
	0.244	86%	21%	2	0.5	0.0	9.7
	0.0919	100%	5%	3	1.0	0.1	7.4
	1.1	29%	70%	4	1.0	0.1	7.4
	1.49	0%	80%				
	2.2	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.182	70%	13%	1			
	0.122	81%	6%	2	1.0	0.4	2.3
	0.0688	93%	2%	3	0.8	0.3	2.0
	1.12	19%	71%	4	2.9	1.6	5.2
	1.48	19%	80%				
	2.2	15%	90%				
24 hours	0.269	72%	21%	1			
	0.175	81%	13%	2	0.8	0.4	1.6
	0.132	91%	8%	3	1.2	0.7	2.0
	1.12	22%	71%	4	1.6	1.0	2.7
	1.48	16%	80%				
	2.2	6%	90%				
48 hours	0.227	75%	17%	1			
	0.0848	81%	3%	2	1.0	0.3	3.9
	0.0558	94%	2%	3	1.7	0.6	5.1
	1.12	19%	71%	4	1.7	0.6	5.1
	1.48	13%	80%				
	2.2	6%	90%				

Fig. 6 - 2

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Endoglin

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	3.980	3.958	3.980	4.855	3.980	3.532
average	4.015	3.896	4.015	6.320	4.015	3.532
stdev	1.122	1.207	1.122	4.292	1.122	0.798
p (t-test)		0.765		0.001		0.548
min	1.904	2.646	1.904	3.229	1.904	2.968
max	7.699	6.760	7.699	12.339	7.699	4.097
n (Samp)	82	9	82	4	82	2
n (Pat)	59	9	59	4	59	2

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	3.899	3.738	3.899	4.847	3.899	4.210
average	4.033	3.738	4.033	4.847	4.033	4.210
stdev	1.421	0.775	1.421	2.289	1.421	1.756
p (t-test)		0.771		0.428		0.863
min	1.904	3.190	1.904	3.229	1.904	2.968
max	12.339	4.287	12.339	6.466	12.339	5.452
n (Samp)	101	2	101	2	101	2
n (Pat)	71	2	71	2	71	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	3.980	3.958	3.980	7.792	3.980	1.912
average	4.010	3.896	4.010	7.792	4.010	4.097
stdev	1.076	1.207	1.076	6.431	1.076	na
p (t-test)		0.769		0.000		na
min	1.912	2.646	1.912	3.245	1.912	4.097
max	6.988	6.760	6.988	12.339	6.988	4.097
n (Samp)	64	9	64	2	64	1
n (Pat)	46	9	46	2	46	1

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.43	0.097	82	9	0.462
24 hours	0.62	0.154	82	4	0.427
48 hours	0.36	0.179	82	2	0.433

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.44	0.197	101	2	0.763
24 hours	0.61	0.215	101	2	0.596
48 hours	0.55	0.213	101	2	0.798

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.43	0.098	64	9	0.464
24 hours	0.63	0.216	64	2	0.539
48 hours	0.52	0.296	64	1	0.958

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR
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Fig. 6 - 3

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0 hours	3.2592	78%	27%	1			
	2.67149	89%	13%	2	3.3	0.2	54.3
	2.64469	100%	12%	3	3.3	0.2	54.3
	4.60123	11%	71%	4	2.2	0.1	50.2
	4.76227	11%	80%				
	5.0502	11%	90%				
24 hours	3.22853	75%	26%	1			
	3.18596	100%	26%	2	na	na	na
	3.18596	100%	26%	3	na	na	na
	4.60123	50%	71%	4	na	na	na
	4.76227	50%	80%				
	5.0502	50%	90%				
48 hours	2.93944	100%	18%	1			
	2.93944	100%	18%	2	na	na	na
	2.93944	100%	18%	3	na	na	na
	4.60123	0%	71%	4	na	na	na
	4.76227	0%	80%				
	5.0502	0%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.18596	100%	28%	1			
	3.18596	100%	28%	2	na	na	na
	3.18596	100%	28%	3	na	na	na
	4.47853	0%	70%	4	na	na	na
	4.71626	0%	80%				
	5.3012	0%	90%				
24 hours	3.18596	100%	28%	1			
	3.18596	100%	28%	2	na	na	na
	3.18596	100%	28%	3	na	na	na
	4.47853	50%	70%	4	na	na	na
	4.71626	50%	80%				
	5.3012	50%	90%				
48 hours	2.93944	100%	20%	1			
	2.93944	100%	20%	2	0.0	0.0	na
	2.93944	100%	20%	3	0.0	0.0	na
	4.47853	50%	70%	4	1.0	0.0	56.8
	4.71626	50%	80%				
	5.3012	50%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.2592	78%	28%	1			
	2.67149	89%	13%	2	3.6	0.2	62.4
	2.56967	100%	11%	3	3.6	0.2	62.4
	4.60123	11%	70%	4	2.3	0.1	53.6
	4.76227	11%	81%				
	5.3012	11%	91%				
24 hours	3.18596	100%	27%	1			
	3.18596	100%	27%	2	na	na	na
	3.18596	100%	27%	3	na	na	na
	4.60123	50%	70%	4	na	na	na
	4.76227	50%	81%				
	5.3012	50%	91%				
48 hours	3.9954	100%	52%	1			
	3.9954	100%	52%	2	na	na	na
	3.9954	100%	52%	3	na	na	na
	4.60123	0%	70%	4	na	na	na
	4.76227	0%	81%				
	5.3012	0%	91%				

Fig. 6 - 4

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Erythropoietin

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	219.000	374.000	219.000	299.000	219.000	161.000
average	489.633	620.336	489.633	460.760	489.633	478.387
stdev	985.760	806.904	985.760	584.786	985.760	992.783
p (t-test)		0.493		0.863		0.962
min	1.660	1.660	1.660	1.660	1.660	1.660
max	11600.000	3710.000	11600.000	2580.000	11600.000	4320.000
n (Samp)	434	28	434	36	434	18
n (Pat)	173	28	173	36	173	18

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	225.000	129.850	225.000	214.000	225.000	173.000
average	494.826	5873.793	494.826	396.220	494.826	487.671
stdev	944.786	13545.581	944.786	531.073	944.786	655.452
p (t-test)		0.000		0.742		0.984
min	1.660	1.660	1.660	24.000	1.660	46.400
max	11600.000	33500.000	11600.000	1820.000	11600.000	1780.000
n (Samp)	542	6	542	10	542	7
n (Pat)	208	6	208	10	208	7

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	219.500	370.000	219.500	302.500	219.500	173.000
average	518.475	607.247	518.475	522.536	518.475	494.620
stdev	1050.182	794.588	1050.182	632.671	1050.182	1041.147
p (t-test)		0.668		0.983		0.929
min	1.660	1.660	1.660	1.660	1.660	1.660
max	11600.000	3710.000	11600.000	2580.000	11600.000	4320.000
n (Samp)	356	27	356	32	356	16
n (Pat)	138	27	138	32	138	16

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.58	0.058	434	28	0.179
24 hours	0.54	0.051	434	36	0.441
48 hours	0.47	0.068	434	18	0.670

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.46	0.115	542	6	0.743
24 hours	0.51	0.093	542	10	0.933
48 hours	0.51	0.111	542	7	0.937

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.59	0.059	356	27	0.138
24 hours	0.55	0.055	356	32	0.338
48 hours	0.46	0.072	356	16	0.600

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR
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Fig. 6 - 5

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0 hours	123	71%	36%	1			
	70.9	82%	26%	2	1.2	0.6	2.6
	19.8	93%	11%	3	1.4	0.7	2.9
	416	43%	70%	4	2.1	1.1	3.9
	609	32%	80%				
	1050	21%	90%				
24 hours	93	72%	30%	1			
	81.1	81%	29%	2	1.7	1.0	3.0
	24	92%	15%	3	2.1	1.2	3.6
	416	36%	70%	4	1.3	0.7	2.5
	609	17%	80%				
	1050	17%	90%				
48 hours	94.2	72%	31%	1			
	44.7	83%	20%	2	0.7	0.2	2.4
	15.7	94%	11%	3	1.5	0.7	3.6
	416	28%	70%	4	1.3	0.5	3.2
	609	11%	80%				
	1050	6%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	19.8	83%	11%	1			
	19.8	83%	11%	2	0.0	0.0	na
	0	100%	0%	3	1.0	0.1	7.3
	422	33%	70%	4	1.0	0.1	7.3
	630	33%	80%				
	1120	33%	90%				
24 hours	123	70%	35%	1			
	93	80%	30%	2	4.1	0.3	48.8
	75	90%	26%	3	3.0	0.2	42.8
	422	30%	70%	4	2.0	0.1	39.2
	630	10%	80%				
	1120	10%	90%				
48 hours	148	71%	39%	1			
	60.6	86%	24%	2	1.5	0.3	8.0
	44.7	100%	19%	3	0.0	0.0	na
	422	29%	70%	4	1.0	0.1	7.3
	630	29%	80%				
	1120	14%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	147	70%	40%	1			
	112	81%	33%	2	2.4	0.9	6.4
	32.5	93%	15%	3	3.2	1.3	7.9
	466	37%	71%	4	2.8	1.1	7.2
	651	26%	80%				
	1120	19%	90%				
24 hours	147	72%	40%	1			
	84	81%	28%	2	1.7	0.8	3.3
	30.5	91%	15%	3	2.6	1.4	4.7
	466	25%	71%	4	1.4	0.7	2.9
	651	22%	80%				
	1120	19%	90%				
48 hours	94.2	75%	30%	1			
	32.5	81%	15%	2	2.6	0.6	10.7
	0	100%	0%	3	2.6	0.6	10.7
	466	31%	71%	4	2.0	0.5	9.3
	651	6%	80%				
	1120	6%	90%				

Fig. 6 - 6

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Fractalkine

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.554	0.745	0.554	0.591	0.554	0.525
average	0.711	0.836	0.711	0.789	0.711	0.640
stdev	0.735	0.517	0.735	0.606	0.735	0.461
p (t-test)		0.531		0.575		0.787
min	0.002	0.066	0.002	0.066	0.002	0.254
max	7.305	1.848	7.305	2.556	7.305	1.712
n (Samp)	225	14	225	30	225	8
n (Pat)	147	14	147	30	147	8

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.567	3.842	0.567	1.587	0.567	0.683
average	0.714	3.842	0.714	1.566	0.714	0.963
stdev	0.691	0.041	0.691	1.049	0.691	0.872
p (t-test)		0.000		0.001		0.476
min	0.002	3.813	0.002	0.293	0.002	0.254
max	7.305	3.871	7.305	2.709	7.305	2.233
n (Samp)	283	2	283	8	283	4
n (Pat)	178	2	178	8	178	4

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.566	0.745	0.566	0.516	0.566	0.483
average	0.670	0.836	0.670	0.677	0.670	0.700
stdev	0.632	0.517	0.632	0.434	0.632	0.572
p (t-test)		0.340		0.959		0.917
min	0.002	0.066	0.002	0.066	0.002	0.344
max	7.305	1.848	7.305	2.036	7.305	1.712
n (Samp)	183	14	183	25	183	5
n (Pat)	120	14	120	25	120	5

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.62	0.082	225	14	0.147
24 hours	0.55	0.057	225	30	0.390
48 hours	0.49	0.103	225	8	0.906

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.99	0.042	283	2	0.000
24 hours	0.74	0.102	283	8	0.016
48 hours	0.59	0.151	283	4	0.546

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.62	0.083	183	14	0.141
24 hours	0.51	0.062	183	25	0.838
48 hours	0.48	0.130	183	5	0.896

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR
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Fig. 6 - 7

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0 hours	0.58382	71%	55%	1			
	0.46512	86%	38%	2	0.5	0.0	9.8
	0.24414	93%	18%	3	3.8	1.0	14.3
	0.78	36%	70%	4	2.0	0.4	9.5
	0.99038	29%	80%				
	1.34	14%	90%				
24 hours	0.42969	70%	34%	1			
	0.42151	80%	34%	2	2.1	1.1	4.1
	0.24414	93%	18%	3	1.4	0.7	3.0
	0.78	37%	70%	4	1.7	0.8	3.4
	0.99038	23%	80%				
	1.34	13%	90%				
48 hours	0.38281	75%	32%	1			
	0.34198	88%	27%	2	3.2	0.2	46.3
	0.24414	100%	18%	3	3.2	0.2	46.3
	0.78	13%	70%	4	1.0	0.0	54.9
	0.99038	13%	80%				
	1.34	13%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.74782	100%	99%	1			
	3.74782	100%	99%	2	na	na	na
	3.74782	100%	99%	3	na	na	na
	0.79	100%	71%	4	na	na	na
	1.00578	100%	80%				
	1.34	100%	90%				
24 hours	0.79808	75%	71%	1			
	0.4717	88%	39%	2	1.0	0.0	52.5
	0.2873	100%	20%	3	2.0	0.1	40.0
	0.79	75%	71%	4	4.1	0.3	50.4
	1.00578	50%	80%				
	1.34	50%	90%				
48 hours	0.62258	75%	55%	1			
	0.24698	100%	17%	2	0.0	0.0	na
	0.24698	100%	17%	3	2.0	0.1	40.0
	0.79	25%	71%	4	1.0	0.0	52.5
	1.00578	25%	80%				
	1.34	25%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.58382	71%	54%	1			
	0.46512	86%	36%	2	0.5	0.0	10.1
	0.24414	93%	15%	3	3.3	0.8	13.2
	0.78	36%	70%	4	2.6	0.6	11.2
	0.94275	29%	80%				
	1.20192	14%	90%				
24 hours	0.42453	72%	32%	1			
	0.42151	80%	31%	2	2.9	1.3	6.2
	0.24414	92%	15%	3	1.3	0.5	3.3
	0.78	28%	70%	4	1.6	0.6	3.9
	0.94275	20%	80%				
	1.20192	8%	90%				
48 hours	0.38281	80%	29%	1			
	0.38281	80%	29%	2	1.0	0.0	54.9
	0.33594	100%	23%	3	2.0	0.1	42.2
	0.78	20%	70%	4	1.0	0.0	54.9
	0.94275	20%	80%				
	1.20192	20%	90%				

Fig. 6 - 8

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Interleukin-1 receptor, type II

sCr or UO

	0 hr prior to AKI stage			24 hr prior to AKI stage			48 hr prior to AKI stage		
	Cohort 1	Cohort 2		Cohort 1	Cohort 2		Cohort 1	Cohort 2	
median	10382.346	na		10382.346	12731.082		10382.346	3061.967	
average	13243.107	na		13243.107	16725.373		13243.107	9971.162	
stdev	10029.455	na		10029.455	12373.037		10029.455	na	
p (t-test)		na			0.299			na	
min	3061.967	na		3061.967	2160.038		3061.967	9971.162	
max	56549.592	na		56549.592	44711.687		56549.592	9971.162	
n (Samp)	46	0		46	13		46	1	
n (Pat)	43	0		43	13		43	1	

sCr only

	0 hr prior to AKI stage			24 hr prior to AKI stage			48 hr prior to AKI stage		
	Cohort 1	Cohort 2		Cohort 1	Cohort 2		Cohort 1	Cohort 2	
median	10772.340	na		10772.340	44711.687		10772.340	na	
average	13600.425	na		13600.425	67876.354		13600.425	na	
stdev	9798.214	na		9798.214	74275.199		9798.214	na	
p (t-test)		na			0.000			na	
min	2160.038	na		2160.038	7943.978		2160.038	na	
max	56549.592	na		56549.592	150973.398		56549.592	na	
n (Samp)	59	0		59	3		59	0	
n (Pat)	54	0		54	3		54	0	

UO only

	0 hr prior to AKI stage			24 hr prior to AKI stage			48 hr prior to AKI stage		
	Cohort 1	Cohort 2		Cohort 1	Cohort 2		Cohort 1	Cohort 2	
median	10193.935	na		10193.935	12731.082		10193.935	3061.967	
average	13202.150	na		13202.150	14876.615		13202.150	9971.162	
stdev	10511.533	na		10511.533	9242.384		10511.533	na	
p (t-test)		na			0.610			na	
min	3061.967	na		3061.967	2160.038		3061.967	9971.162	
max	56549.592	na		56549.592	36344.165		56549.592	9971.162	
n (Samp)	40	0		40	13		40	1	
n (Pat)	37	0		37	13		37	1	

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	nd	nd	46	0	nd
24 hours	0.60	0.092	46	13	0.278
48 hours	0.46	0.285	46	1	0.879

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	nd	nd	59	0	nd
24 hours	0.73	0.169	59	3	0.166
48 hours	nd	nd	59	0	nd

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	nd	nd	40	0	nd
24 hours	0.61	0.094	40	13	0.250
48 hours	0.48	0.291	40	1	0.931

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR
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Fig. 6 - 9

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0 hours	na	na	na	1			
	na	na	na	2	na	na	na
	na	na	na	3	na	na	na
	na	na	na	4	na	na	na
	na	na	na				
	na	na	na				
24 hours	10696.1	77%	54%	1			
	5139.25	85%	4%	2	0.3	0.0	4.9
	5058.64	92%	4%	3	1.3	0.3	6.0
	12350.1	54%	72%	4	1.8	0.4	7.6
	16362.7	38%	80%				
	25004.5	15%	91%				
48 hours	9927.72	100%	46%	1			
	9927.72	100%	46%	2	na	na	na
	9927.72	100%	46%	3	na	na	na
	12350.1	0%	72%	4	na	na	na
	16362.7	0%	80%				
	25004.5	0%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	na	na	na	1			
	na	na	na	2	na	na	na
	na	na	na	3	na	na	na
	na	na	na	4	na	na	na
	na	na	na				
	na	na	na				
24 hours	7911.48	100%	24%	1			
	7911.48	100%	24%	2	0.0	0.0	na
	7911.48	100%	24%	3	0.0	0.0	na
	14290	67%	71%	4	2.0	0.1	50.1
	18360.7	67%	81%				
	25004.5	67%	92%				
48 hours	na	na	na	1			
	na	na	na	2	na	na	na
	na	na	na	3	na	na	na
	na	na	na	4	na	na	na
	na	na	na				
	na	na	na				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	na	na	na	1			
	na	na	na	2	na	na	na
	na	na	na	3	na	na	na
	na	na	na	4	na	na	na
	na	na	na				
	na	na	na				
24 hours	10696.1	77%	58%	1			
	5139.25	85%	5%	2	0.0	0.0	na
	5058.64	92%	5%	3	1.5	0.3	7.0
	11758.4	54%	70%	4	2.5	0.6	10.4
	14290	46%	80%				
	19122.3	31%	90%				
48 hours	9927.72	100%	48%	1			
	9927.72	100%	48%	2	na	na	na
	9927.72	100%	48%	3	na	na	na
	11758.4	0%	70%	4	na	na	na
	14290	0%	80%				
	19122.3	0%	90%				

Fig. 6 - 10

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Lymphotoxin-alpha

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.456	0.456	0.456	0.456	0.456	0.456
average	2.359	2.533	2.359	2.094	2.359	1.732
stdev	16.238	7.735	16.238	3.553	16.238	2.077
p (t-test)		0.955		0.922		0.870
min	0.456	0.456	0.456	0.456	0.456	0.456
max	330.000	40.700	330.000	18.700	330.000	6.220
n (Samp)	434	28	434	36	434	18
n (Pat)	173	28	173	36	173	18

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.456	0.456	0.456	0.456	0.456	2.140
average	2.127	7.926	2.127	3.500	2.127	2.814
stdev	14.562	16.160	14.562	5.729	14.562	2.919
p (t-test)		0.333		0.766		0.901
min	0.456	0.456	0.456	0.456	0.456	0.456
max	330.000	40.700	330.000	18.700	330.000	7.530
n (Samp)	542	6	542	10	542	7
n (Pat)	208	6	208	10	208	7

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.456	0.456	0.456	0.456	0.456	0.456
average	2.543	1.120	2.543	1.549	2.543	3.818
stdev	17.791	2.008	17.791	2.080	17.791	10.005
p (t-test)		0.678		0.753		0.776
min	0.456	0.456	0.456	0.456	0.456	0.456
max	330.000	8.820	330.000	7.530	330.000	40.700
n (Samp)	356	27	356	32	356	16
n (Pat)	138	27	138	32	138	16

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.48	0.056	434	28	0.690
24 hours	0.54	0.051	434	36	0.382
48 hours	0.57	0.072	434	18	0.359

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.59	0.123	542	6	0.466
24 hours	0.61	0.096	542	10	0.233
48 hours	0.68	0.112	542	7	0.100

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.46	0.056	356	27	0.495
24 hours	0.53	0.054	356	32	0.593
48 hours	0.54	0.075	356	16	0.621

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			

Fig. 6 - 11

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	0	100%	0%	2	3.9	2.0	7.6
	0	100%	0%	3	1.8	0.8	4.0
	0.456	14%	79%	4	0.8	0.2	2.4
	1.73	14%	81%				
	3.18	14%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	2.8	1.1	7.0
	0	100%	0%	3	4.3	1.9	10.2
	0.456	28%	79%	4	4.7	2.0	10.9
	1.73	28%	81%				
	3.18	22%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	12.1	1.4	106.3
	0	100%	0%	3	0.0	0.0	na
	0.456	33%	79%	4	6.3	0.6	64.1
	1.73	33%	81%				
	3.18	22%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	3.0	0.2	42.8
	0	100%	0%	3	0.0	0.0	na
	0.456	33%	80%	4	2.0	0.1	39.2
	0.456	33%	80%				
	3.18	33%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.456	40%	80%	4	na	na	na
	0.456	40%	80%				
	3.18	30%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.456	57%	80%	4	na	na	na
	0.456	57%	80%				
	3.18	29%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	1.9	1.0	3.6
	0	100%	0%	3	1.7	0.8	3.3
	0.456	11%	80%	4	1.0	0.4	2.3
	0.456	11%	80%				
	4.33	11%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	1.2	0.6	2.3
	0	100%	0%	3	1.2	0.6	2.3
	0.456	25%	80%	4	2.1	1.3	3.7
	0.456	25%	80%				
	4.33	19%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	12.3	1.4	109.5
	0	100%	0%	3	0.0	0.0	na
	0.456	25%	80%	4	4.1	0.3	50.0
	0.456	25%	80%				
	4.33	25%	90%				

Fig. 6 - 12

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Matrix metalloproteinase-3

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.043	0.063	0.043	0.050	0.043	0.061
average	0.126	0.203	0.126	0.159	0.126	0.246
stdev	0.241	0.315	0.241	0.279	0.241	0.472
p (t-test)		0.109		0.445		0.050
min	0.002	0.002	0.002	0.002	0.002	0.002
max	2.160	1.180	2.160	1.150	2.160	1.880
n (Samp)	434	28	434	36	434	18
n (Pat)	173	28	173	36	173	18

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.050	0.384	0.050	0.090	0.050	0.150
average	0.149	0.343	0.149	0.169	0.149	0.302
stdev	0.284	0.231	0.284	0.221	0.284	0.325
p (t-test)		0.098		0.827		0.160
min	0.002	0.058	0.002	0.002	0.002	0.062
max	2.160	0.654	2.160	0.732	2.160	0.927
n (Samp)	542	6	542	10	542	7
n (Pat)	208	6	208	10	208	7

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.049	0.059	0.049	0.045	0.049	0.041
average	0.121	0.186	0.121	0.150	0.121	0.174
stdev	0.235	0.304	0.235	0.278	0.235	0.462
p (t-test)		0.182		0.516		0.406
min	0.002	0.002	0.002	0.002	0.002	0.002
max	2.160	1.180	2.160	1.150	2.160	1.880
n (Samp)	356	27	356	32	356	16
n (Pat)	138	27	138	32	138	16

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.57	0.058	434	28	0.254
24 hours	0.51	0.050	434	36	0.791
48 hours	0.56	0.071	434	18	0.434

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.80	0.109	542	6	0.005
24 hours	0.58	0.095	542	10	0.397
48 hours	0.75	0.107	542	7	0.018

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.55	0.059	356	27	0.399
24 hours	0.49	0.053	356	32	0.857
48 hours	0.46	0.072	356	16	0.562

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR
0 hours	0	100%	0%	1		

Fig. 6 - 13

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	0	100%	0%	2	10.8	1.2	96.3
	0	100%	0%	3	6.3	0.6	64.0
	0.109	39%	70%	4	11.9	1.4	105.0
	0.182	32%	80%				
	0.315	18%	91%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	1.0	0.6	1.7
	0	100%	0%	3	1.1	0.7	1.9
	0.109	31%	70%	4	1.4	0.9	2.2
	0.182	19%	80%				
	0.315	11%	91%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	1.3	0.4	4.4
	0	100%	0%	3	1.3	0.4	4.4
	0.109	39%	70%	4	2.4	0.9	6.4
	0.182	22%	80%				
	0.315	17%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	0.3	0.1	0.8
	0	100%	0%	3	0.4	0.2	0.9
	0.105	41%	70%	4	1.2	0.8	1.9
	0.164	33%	80%				
	0.306	19%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	0.6	0.4	1.2
	0	100%	0%	3	0.9	0.5	1.5
	0.105	28%	70%	4	1.0	0.6	1.6
	0.164	19%	80%				
	0.306	16%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	1.0	0.4	2.8
	0	100%	0%	3	1.8	0.8	4.1
	0.105	25%	70%	4	0.2	0.0	2.9
	0.164	25%	80%				
	0.306	6%	90%				

Fig. 6 - 14

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Thrombospondin-1

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2166.151	881.530	2166.151	636.838	2166.151	674.270
average	2765.880	1612.846	2765.880	1511.899	2765.880	674.270
stdev	2251.508	2488.238	2251.508	1839.325	2251.508	200.763
p (t-test)		0.154		0.278		0.196
min	177.557	286.458	177.557	505.826	177.557	532.309
max	9514.803	8182.566	9514.803	4268.092	9514.803	816.231
n (Samp)	78	9	78	4	78	2
n (Pat)	58	9	58	4	58	2

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2031.734	794.393	2031.734	636.838	2031.734	939.832
average	2587.165	794.393	2587.165	636.838	2587.165	939.832
stdev	2218.935	644.326	2218.935	95.393	2218.935	174.798
p (t-test)		0.259		0.219		0.299
min	177.557	338.785	177.557	569.386	177.557	816.231
max	9514.803	1250.000	9514.803	704.291	9514.803	1063.433
n (Samp)	97	2	97	2	97	2
n (Pat)	70	2	70	2	70	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2271.672	881.530	2271.672	2386.959	2271.672	315.148
average	2958.509	1612.846	2958.509	2386.959	2958.509	532.309
stdev	2402.385	2488.238	2402.385	2660.324	2402.385	na
p (t-test)		0.123		0.742		na
min	315.148	286.458	315.148	505.826	315.148	532.309
max	9514.803	8182.566	9514.803	4268.092	9514.803	532.309
n (Samp)	60	9	60	2	60	1
n (Pat)	45	9	45	2	45	1

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.26	0.075	78	9	0.001
24 hours	0.30	0.117	78	4	0.095
48 hours	0.15	0.099	78	2	0.000

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.20	0.118	97	2	0.010
24 hours	0.19	0.116	97	2	0.008
48 hours	0.25	0.142	97	2	0.082

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.24	0.074	60	9	0.000
24 hours	0.41	0.193	60	2	0.635
48 hours	0.08	0.084	60	1	0.000

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	473.131	78%	10%	1			

Fig. 6 - 15

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	373.411	89%	6%	2	0.0	0.0	na
	229.64	100%	3%	3	3.3	0.2	55.1
	3116.78	11%	71%	4	6.6	0.5	85.6
	4629.93	11%	81%				
	6307.57	11%	91%				
24 hours	542.903	75%	13%	1			
	473.131	100%	10%	2	0.0	0.0	na
	473.131	100%	10%	3	0.0	0.0	na
	3116.78	25%	71%	4	3.5	0.2	59.6
	4629.93	0%	81%				
	6307.57	0%	91%				
48 hours	531.542	100%	12%	1			
	531.542	100%	12%	2	na	na	na
	531.542	100%	12%	3	na	na	na
	3116.78	0%	71%	4	na	na	na
	4629.93	0%	81%				
	6307.57	0%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	473.131	78%	7%	1			
	315.148	89%	2%	2	0.0	0.0	na
	0	100%	0%	3	3.6	0.2	64.2
	3116.78	11%	70%	4	7.1	0.5	98.3
	5266.77	11%	80%				
	6486.28	11%	90%				
24 hours	473.131	100%	7%	1			
	473.131	100%	7%	2	0.0	0.0	na
	473.131	100%	7%	3	0.0	0.0	na
	3116.78	50%	70%	4	1.1	0.0	70.8
	5266.77	0%	80%				
	6486.28	0%	90%				
48 hours	531.542	100%	8%	1			
	531.542	100%	8%	2	na	na	na
	531.542	100%	8%	3	na	na	na
	3116.78	0%	70%	4	na	na	na
	5266.77	0%	80%				
	6486.28	0%	90%				

Fig. 6 - 16

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ENA-78 (C-X-C chemokine motif 5)

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.670	0.361	0.670	0.361	0.670	0.361
average	1.530	0.564	1.530	0.564	1.530	0.564
stdev	4.335	0.424	4.335	0.424	4.335	0.424
p (t-test)		0.313		0.313		0.313
min	0.038	0.091	0.038	0.091	0.038	0.091
max	32.500	1.560	32.500	1.560	32.500	1.560
n (Samp)	56	21	56	21	56	21
n (Pat)	56	21	56	21	56	21

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.692	0.327	0.692	0.327	0.692	0.327
average	0.717	0.515	0.717	0.515	0.717	0.515
stdev	0.500	0.395	0.500	0.395	0.500	0.395
p (t-test)		0.410		0.410		0.410
min	0.050	0.094	0.050	0.094	0.050	0.094
max	2.010	1.040	2.010	1.040	2.010	1.040
n (Samp)	21	5	21	5	21	5
n (Pat)	21	5	21	5	21	5

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.606	0.353	0.606	0.353	0.606	0.353
average	1.691	0.531	1.691	0.531	1.691	0.531
stdev	4.769	0.455	4.769	0.455	4.769	0.455
p (t-test)		0.323		0.323		0.323
min	0.038	0.091	0.038	0.091	0.038	0.091
max	32.500	1.560	32.500	1.560	32.500	1.560
n (Samp)	46	17	46	17	46	17
n (Pat)	46	17	46	17	46	17

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.42	0.071	56	21	0.239
24 hours	0.42	0.071	56	21	0.239
48 hours	0.42	0.071	56	21	0.239

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.39	0.136	21	5	0.420
24 hours	0.39	0.136	21	5	0.420
48 hours	0.39	0.136	21	5	0.420

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.38	0.077	46	17	0.133
24 hours	0.38	0.077	46	17	0.133
48 hours	0.38	0.077	46	17	0.133

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.299	71%	34%	1			
	0.232	81%	23%	2	2.0	0.6	7.4

Fig. 7 - 1

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	0.144	90%	18%	3	4.1	1.3	13.6
	1.24	10%	71%	4	2.0	0.6	7.4
	1.66	0%	80%				
	2.78	0%	91%				
24 hours	0.299	71%	34%	1			
	0.232	81%	23%	2	2.0	0.6	7.4
	0.144	90%	18%	3	4.1	1.3	13.6
	1.24	10%	71%	4	2.0	0.6	7.4
	1.66	0%	80%				
	2.78	0%	91%				
48 hours	0.299	71%	34%	1			
	0.232	81%	23%	2	2.0	0.6	7.4
	0.144	90%	18%	3	4.1	1.3	13.6
	1.24	10%	71%	4	2.0	0.6	7.4
	1.66	0%	80%				
	2.78	0%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.232	80%	19%	1			
	0.232	80%	19%	2	1.2	0.0	124.1
	0.0688	100%	10%	3	1.0	0.0	96.9
	0.911	20%	71%	4	3.0	0.1	128.4
	1	20%	81%				
	1.44	0%	90%				
24 hours	0.232	80%	19%	1			
	0.232	80%	19%	2	1.2	0.0	124.1
	0.0688	100%	10%	3	1.0	0.0	96.9
	0.911	20%	71%	4	3.0	0.1	128.4
	1	20%	81%				
	1.44	0%	90%				
48 hours	0.232	80%	19%	1			
	0.232	80%	19%	2	1.2	0.0	124.1
	0.0688	100%	10%	3	1.0	0.0	96.9
	0.911	20%	71%	4	3.0	0.1	128.4
	1	20%	81%				
	1.44	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.251	71%	24%	1			
	0.144	82%	15%	2	3.2	0.6	17.2
	0.112	94%	13%	3	3.2	0.6	17.2
	1.35	12%	72%	4	3.5	0.6	19.3
	1.68	0%	80%				
	2.81	0%	91%				
24 hours	0.251	71%	24%	1			
	0.144	82%	15%	2	3.2	0.6	17.2
	0.112	94%	13%	3	3.2	0.6	17.2
	1.35	12%	72%	4	3.5	0.6	19.3
	1.68	0%	80%				
	2.81	0%	91%				
48 hours	0.251	71%	24%	1			
	0.144	82%	15%	2	3.2	0.6	17.2
	0.112	94%	13%	3	3.2	0.6	17.2
	1.35	12%	72%	4	3.5	0.6	19.3
	1.68	0%	80%				
	2.81	0%	91%				

Fig. 7 - 2

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CD44

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	251.624	269.551	251.624	281.817	251.624	259.544
average	306.077	294.432	306.077	307.596	306.077	248.869
stdev	177.805	138.410	177.805	138.448	177.805	70.999
p (t-test)		0.840		0.980		0.376
Min	124.024	148.063	124.024	148.063	124.024	148.063
max	1060.922	585.758	1060.922	585.758	1060.922	354.323
n (Samp)	47	11	47	10	47	8
n (Pat)	47	11	47	10	47	8

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	251.006	259.544	251.006	259.544	251.006	220.302
average	286.752	326.022	286.752	326.022	286.752	222.170
stdev	151.701	167.752	151.701	167.752	151.701	44.219
p (t-test)		0.546		0.546		0.401
min	124.024	178.526	124.024	178.526	124.024	178.526
max	1060.922	585.758	1060.922	585.758	1060.922	269.551
n (Samp)	78	6	78	6	78	4
n (Pat)	78	6	78	6	78	4

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	251.624	242.575	251.624	294.084	251.624	294.084
average	276.555	245.614	276.555	262.178	276.555	258.668
stdev	110.596	90.846	110.596	90.876	110.596	85.775
p (t-test)		0.520		0.783		0.731
min	124.024	148.063	124.024	148.063	124.024	148.063
max	639.273	371.875	639.273	371.875	639.273	354.323
n (Samp)	37	6	37	5	37	5
n (Pat)	37	6	37	5	37	5

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.50	0.097	47	11	0.992
24 hours	0.54	0.103	47	10	0.679
48 hours	0.45	0.108	47	8	0.622

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.56	0.126	78	6	0.629
24 hours	0.56	0.126	78	6	0.629
48 hours	0.37	0.130	78	4	0.308

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.44	0.124	37	6	0.636
24 hours	0.51	0.140	37	5	0.923
48 hours	0.51	0.140	37	5	0.954

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	181.323	73%	17%	1			
	176.603	82%	13%	2	1.1	0.2	5.7
	159.936	91%	6%	3	0.3	0.0	5.3
	293.798	45%	70%	4	1.6	0.4	7.2

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	358.806	27%	81%				
	469.985	18%	91%				
24 hours	248.84	70%	45%	1			
	181.323	80%	17%	2	0.3	0.0	5.3
	176.603	90%	13%	3	1.0	0.2	5.3
	293.798	50%	70%	4	0.9	0.2	4.8
	358.806	30%	81%				
	469.985	20%	91%				
48 hours	181.323	75%	17%	1			
	176.603	88%	13%	2	3.5	0.2	67.2
	124.024	100%	2%	3	1.0	0.0	68.1
	293.798	38%	70%	4	3.9	0.2	75.3
	358.806	0%	81%				
	469.985	0%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	182.019	83%	22%	1			
	182.019	83%	22%	2	0.5	0.0	11.0
	176.603	100%	17%	3	0.5	0.0	11.0
	308.32	33%	71%	4	1.0	0.1	8.7
	358.806	33%	81%				
	422.768	33%	91%				
24 hours	182.019	83%	22%	1			
	182.019	83%	22%	2	0.5	0.0	11.0
	176.603	100%	17%	3	0.5	0.0	11.0
	308.32	33%	71%	4	1.0	0.1	8.7
	358.806	33%	81%				
	422.768	33%	91%				
48 hours	182.019	75%	22%	1			
	176.603	100%	17%	2	na	na	na
	176.603	100%	17%	3	na	na	na
	308.32	0%	71%	4	na	na	na
	358.806	0%	81%				
	422.768	0%	91%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	159.936	83%	8%	1			
	159.936	83%	8%	2	0.5	0.0	12.9
	124.024	100%	3%	3	0.0	0.0	na
	291.987	50%	70%	4	1.9	0.2	16.2
	341.599	17%	81%				
	422.768	0%	92%				
24 hours	181.323	80%	16%	1			
	181.323	80%	16%	2	0.0	0.0	na
	124.024	100%	3%	3	0.4	0.0	13.4
	291.987	60%	70%	4	0.9	0.1	10.0
	341.599	20%	81%				
	422.768	0%	92%				
48 hours	181.323	80%	16%	1			
	181.323	80%	16%	2	0.0	0.0	na
	124.024	100%	3%	3	0.4	0.0	13.4
	291.987	60%	70%	4	0.9	0.1	10.0
	341.599	20%	81%				
	422.768	0%	92%				

Angiopoietin-1

Fig. 8 - 2

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sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1722.948	2046.729	1722.948	1090.554	1722.948	1544.026
average	2552.209	2720.067	2552.209	2263.841	2552.209	2879.031
stdev	2544.293	2867.490	2544.293	2944.741	2544.293	3305.810
p (t-test)		0.814		0.696		0.706
min	192.308	294.737	192.308	134.615	192.308	355.469
max	14800.944	11276.161	14800.944	11276.161	14800.944	11276.161
n (Samp)	106	15	106	14	106	10
n (Pat)	106	15	106	14	106	10

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1841.410	1174.729	1841.410	953.039	1841.410	1228.070
average	2847.163	2672.378	2847.163	2857.308	2847.163	3266.837
stdev	2697.239	3664.030	2697.239	3920.145	2697.239	4502.372
p (t-test)		0.860		0.992		0.737
min	171.053	294.737	171.053	134.615	171.053	830.189
max	14800.944	11276.161	14800.944	11276.161	14800.944	11276.161
n (Samp)	171	8	171	7	171	5
n (Pat)	171	8	171	7	171	5

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	1600.644	2887.671	1600.644	1351.852	1600.644	2046.729
average	2605.373	2826.741	2605.373	1967.923	2605.373	2247.275
stdev	2769.536	1697.025	2769.536	1590.424	2769.536	1690.296
p (t-test)		0.815		0.500		0.738
min	192.308	394.531	192.308	355.469	192.308	355.469
max	14800.944	5089.494	14800.944	4622.222	14800.944	4622.222
n (Samp)	86	9	86	9	86	7
n (Pat)	86	9	86	9	86	7

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.49	0.080	106	15	0.921
24 hours	0.41	0.077	106	14	0.237
48 hours	0.50	0.096	106	10	0.984

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.41	0.097	171	8	0.360
24 hours	0.42	0.104	171	7	0.429
48 hours	0.47	0.128	171	5	0.788

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.59	0.104	86	9	0.393
24 hours	0.45	0.098	86	9	0.618
48 hours	0.50	0.114	86	7	0.977

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	728.261	73%	23%	1			
	650	80%	19%	2	0.6	0.2	1.9
	384.259	93%	8%	3	0.4	0.1	1.7
	2710.36	40%	71%	4	1.0	0.4	2.7

Fig. 8 - 3

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	4010.38	20%	80%				
	5570.37	7%	91%				
24 hours	815.217	71%	24%	1			
	384.259	86%	8%	2	0.6	0.1	3.8
	331.25	93%	7%	3	1.4	0.4	5.0
	2710.36	21%	71%	4	1.8	0.5	6.0
	4010.38	21%	80%				
	5570.37	7%	91%				
48 hours	933.962	70%	29%	1			
	913.043	80%	29%	2	0.6	0.1	3.8
	815.217	90%	24%	3	1.0	0.2	4.3
	2710.36	30%	71%	4	0.6	0.1	3.8
	4010.38	30%	80%				
	5570.37	10%	91%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	750	75%	20%	1			
	650	88%	16%	2	2.0	0.1	42.4
	284.247	100%	4%	3	2.0	0.1	42.4
	3479.45	25%	70%	4	3.2	0.2	48.2
	4665.76	13%	80%				
	6612.75	13%	90%				
24 hours	818.182	71%	22%	1			
	750	86%	20%	2	2.1	0.1	43.4
	0	100%	0%	3	1.0	0.0	55.1
	3479.45	29%	70%	4	3.2	0.2	48.2
	4665.76	14%	80%				
	6612.75	14%	90%				
48 hours	941.989	80%	27%	1			
	941.989	80%	27%	2	1.0	0.0	55.2
	818.182	100%	22%	3	2.0	0.1	42.5
	3479.45	20%	70%	4	1.0	0.0	55.2
	4665.76	20%	80%				
	6612.75	20%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	2009.35	78%	56%	1			
	394.531	89%	8%	2	0.0	0.0	na
	375	100%	8%	3	1.5	0.2	9.3
	2607.48	56%	71%	4	2.1	0.4	11.1
	4088.89	22%	80%				
	5863.1	0%	91%				
24 hours	913.043	78%	30%	1			
	375	89%	8%	2	1.0	0.1	8.5
	331.25	100%	7%	3	1.6	0.3	9.7
	2607.48	22%	71%	4	1.0	0.1	8.9
	4088.89	22%	80%				
	5863.1	0%	91%				
48 hours	990.566	71%	33%	1			
	913.043	86%	30%	2	2.1	0.1	47.6
	331.25	100%	7%	3	2.1	0.1	47.6
	2607.48	29%	71%	4	2.0	0.1	45.2
	4088.89	29%	80%				
	5863.1	0%	91%				

ENA-78 (C-X-C chemokine motif 5)

sCr or UO

0 hr prior to AKI stage

24 hr prior to AKI stage

48 hr prior to AKI stage

Fig. 8 - 4

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	Cohort 1 Cohort 2		Cohort 1 Cohort 2		Cohort 1 Cohort 2	
median	0.905	0.815	0.905	0.815	0.905	1.123
average	1.331	1.542	1.331	1.466	1.331	1.969
stdev	1.443	1.706	1.443	1.616	1.443	1.867
p (t-test)		0.585		0.725		0.194
min	0.022	0.103	0.022	0.103	0.022	0.270
max	8.730	6.040	8.730	6.040	8.730	6.040
n (Samp)	112	17	112	17	112	10
n (Pat)	112	17	112	17	112	10

sCr only

	0 hr prior toAKI stage Cohort 1 Cohort 2		24 hr prior toAKI stage Cohort 1 Cohort 2		48 hr prior toAKI stage Cohort 1 Cohort 2	
median	0.905	1.121	0.905	1.121	0.905	1.880
average	1.530	1.629	1.530	1.490	1.530	2.216
stdev	2.811	1.660	2.811	1.444	2.811	1.334
p (t-test)		0.922		0.968		0.588
min	0.022	0.155	0.022	0.150	0.022	0.762
max	32.500	4.240	32.500	4.010	32.500	4.010
n (Samp)	180	8	180	8	180	5
n (Pat)	180	8	180	8	180	5

UO only

	0 hr prior toAKI stage Cohort 1 Cohort 2		24 hr prior toAKI stage Cohort 1 Cohort 2		48 hr prior toAKI stage Cohort 1 Cohort 2	
median	0.880	0.875	0.880	0.875	0.880	0.875
average	1.326	1.503	1.326	1.487	1.326	1.684
stdev	1.400	1.653	1.400	1.654	1.400	1.993
p (t-test)		0.698		0.724		0.529
min	0.048	0.103	0.048	0.103	0.048	0.270
max	8.730	6.040	8.730	6.040	8.730	6.040
n (Samp)	89	11	89	11	89	7
n (Pat)	89	11	89	11	89	7

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.50	0.076	112	17	0.950
24 hours	0.50	0.075	112	17	0.981
48 hours	0.62	0.098	112	10	0.227

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.52	0.106	180	8	0.872
24 hours	0.51	0.105	180	8	0.913
48 hours	0.74	0.129	180	5	0.057

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.53	0.094	89	11	0.781
24 hours	0.52	0.094	89	11	0.836
48 hours	0.55	0.116	89	7	0.694

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.579	71%	32%	1			
	0.251	82%	18%	2	1.0	0.4	2.5
	0.154	94%	7%	3	0.4	0.1	1.6
	1.56	29%	71%	4	1.0	0.4	2.4
	1.81	29%	80%				
	2.88	18%	90%				

Fig. 8 - 5

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24 hours	0.579	71%	32%	1			
	0.251	82%	18%	2	0.4	0.1	1.7
	0.13	94%	6%	3	1.0	0.4	2.6
	1.56	29%	71%	4	1.0	0.4	2.6
	1.81	29%	80%				
	2.88	18%	90%				
48 hours	0.801	70%	46%	1			
	0.746	80%	44%	2	4.3	0.3	57.3
	0.535	90%	31%	3	1.0	0.0	57.7
	1.56	40%	71%	4	4.3	0.3	57.3
	1.81	40%	80%				
	2.88	30%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.315	75%	19%	1			
	0.168	88%	7%	2	0.3	0.0	4.7
	0.154	100%	6%	3	0.3	0.0	4.7
	1.57	38%	71%	4	1.0	0.2	4.0
	1.87	38%	80%				
	2.88	25%	90%				
24 hours	0.315	75%	19%	1			
	0.168	88%	7%	2	0.3	0.0	4.7
	0.13	100%	6%	3	0.3	0.0	4.7
	1.57	38%	71%	4	1.0	0.2	4.0
	1.87	38%	80%				
	2.88	25%	90%				
48 hours	1.28	80%	63%	1			
	1.28	80%	63%	2	na	na	na
	0.746	100%	44%	3	na	na	na
	1.57	60%	71%	4	na	na	na
	1.87	60%	80%				
	2.88	40%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.714	73%	38%	1			
	0.579	82%	29%	2	2.2	0.4	11.4
	0.243	91%	17%	3	1.0	0.1	8.4
	1.61	27%	72%	4	1.6	0.3	9.6
	1.9	18%	81%				
	2.66	9%	91%				
24 hours	0.714	73%	38%	1			
	0.579	82%	29%	2	2.2	0.4	11.4
	0.243	91%	17%	3	1.0	0.1	8.4
	1.61	27%	72%	4	1.6	0.3	9.6
	1.9	18%	81%				
	2.66	9%	91%				
48 hours	0.801	71%	45%	1			
	0.535	86%	28%	2	3.3	0.2	53.6
	0.243	100%	17%	3	1.0	0.0	59.8
	1.61	29%	72%	4	2.1	0.1	47.1
	1.9	14%	81%				
	2.66	14%	91%				

Endoglin

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	4.456	3.462	4.456	3.420	4.456	3.351

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average	4.367	3.832	4.367	4.080	4.367	3.639
stdev	1.261	1.235	1.261	1.386	1.261	1.017
p (t-test)		0.238		0.589		0.187
min	1.904	2.586	1.904	2.613	1.904	2.613
max	7.699	6.466	7.699	6.466	7.699	5.452
n (Samp)	37	10	37	7	37	6
n (Pat)	37	10	37	7	37	6

sCr only

	0 hr prior toAKI stage		24 hr prior toAKI stage		48 hr prior toAKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	3.972	3.420	3.972	3.420	3.972	3.194
average	4.217	3.962	4.217	4.372	4.217	3.194
stdev	1.545	1.406	1.545	1.816	1.545	0.320
p (t-test)		0.722		0.867		0.357
min	1.904	3.190	1.904	3.229	1.904	2.968
max	12.339	6.466	12.339	6.466	12.339	3.420
n (Samp)	61	5	61	3	61	2
n (Pat)	61	5	61	3	61	2

UO only

	0 hr prior toAKI stage		24 hr prior toAKI stage		48 hr prior toAKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	4.456	3.765	4.456	3.690	4.456	3.690
average	4.356	3.702	4.356	3.861	4.356	3.861
stdev	1.194	1.189	1.194	1.222	1.194	1.222
p (t-test)		0.270		0.446		0.446
min	2.309	2.586	2.309	2.613	2.309	2.613
max	6.988	5.452	6.988	5.452	6.988	5.452
n (Samp)	27	5	27	4	27	4
n (Pat)	27	5	27	4	27	4

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.36	0.093	37	10	0.124
24 hours	0.42	0.115	37	7	0.511
48 hours	0.33	0.109	37	6	0.116

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.41	0.125	61	5	0.456
24 hours	0.50	0.172	61	3	0.987
48 hours	0.21	0.128	61	2	0.025

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.33	0.121	27	5	0.150
24 hours	0.38	0.142	27	4	0.398
48 hours	0.38	0.142	27	4	0.398

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.19018	70%	22%	1			
	3.18596	80%	22%	2	0.0	0.0	na
	2.58574	90%	8%	3	3.6	0.6	22.7
	4.80975	20%	70%	4	1.9	0.2	14.9
	5.0502	20%	81%				
	6.0743	10%	92%				
24 hours	3.22853	71%	22%	1			
	3.18596	86%	22%	2	0.0	0.0	na

Fig. 8 - 7

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	2.56967	100%	8%	3	1.0	0.1	11.0
	4.80975	29%	70%	4	1.7	0.2	13.7
	5.0502	29%	81%				
	6.0743	14%	92%				
48 hours	2.91265	83%	16%	1			
	2.91265	83%	16%	2	0.0	0.0	na
	2.56967	100%	8%	3	3.8	0.2	79.5
	4.80975	17%	70%	4	2.5	0.1	73.5
	5.0502	17%	81%				
	6.0743	0%	92%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	3.19018	80%	26%	1			
	3.19018	80%	26%	2	0.0	0.0	na
	3.18596	100%	26%	3	4.9	0.3	75.0
	4.63957	20%	70%	4	0.0	0.0	na
	4.82362	20%	80%				
	5.43169	20%	90%				
24 hours	3.18596	100%	26%	1			
	3.18596	100%	26%	2	0.0	0.0	na
	3.18596	100%	26%	3	2.1	0.1	53.1
	4.63957	33%	70%	4	0.0	0.0	na
	4.82362	33%	80%				
	5.43169	33%	90%				
48 hours	2.91265	100%	15%	1			
	2.91265	100%	15%	2	na	na	na
	2.91265	100%	15%	3	na	na	na
	4.63957	0%	70%	4	na	na	na
	4.82362	0%	80%				
	5.43169	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	2.58574	80%	7%	1			
	2.58574	80%	7%	2	0.0	0.0	na
	2.56967	100%	7%	3	2.3	0.1	81.0
	4.69325	20%	70%	4	2.3	0.1	81.0
	5.3012	20%	81%				
	6.0743	0%	93%				
24 hours	3.18596	75%	22%	1			
	2.56967	100%	7%	2	0.0	0.0	na
	2.56967	100%	7%	3	2.3	0.1	81.0
	4.69325	25%	70%	4	1.2	0.0	107.9
	5.3012	25%	81%				
	6.0743	0%	93%				
48 hours	3.18596	75%	22%	1			
	2.56967	100%	7%	2	0.0	0.0	na
	2.56967	100%	7%	3	2.3	0.1	81.0
	4.69325	25%	70%	4	1.2	0.0	107.9
	5.3012	25%	81%				
	6.0743	0%	93%				

Erythropoietin
sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	319.500	535.000	319.500	442.000	319.500	513.000
average	512.317	2719.541	512.317	713.724	512.317	780.590
stdev	670.858	7957.845	670.858	680.991	670.858	713.599
p (t-test)		0.004		0.252		0.230

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min	1.660	82.200	1.660	75.100	1.660	19.800
max	3430.000	33500.000	3430.000	2100.000	3430.000	2050.000
n (Samp)	112	17	112	17	112	10
n (Pat)	112	17	112	17	112	10

sCr only

	0 hr prior toAKI stage		24 hr prior toAKI stage		48 hr prior toAKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	339.500	375.000	339.500	375.000	339.500	277.000
average	647.548	632.500	647.548	514.763	647.548	564.820
stdev	1136.425	526.384	1136.425	410.565	1136.425	528.191
p (t-test)		0.970		0.743		0.872
min	1.660	101.000	1.660	75.100	1.660	75.100
max	11600.000	1460.000	11600.000	1270.000	11600.000	1270.000
n (Samp)	180	8	180	8	180	5
n (Pat)	180	8	180	8	180	5

UO only

	0 hr prior toAKI stage		24 hr prior toAKI stage		48 hr prior toAKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	323.000	977.000	323.000	442.000	323.000	584.000
average	595.076	3878.200	595.076	863.927	595.076	924.257
stdev	875.340	9849.075	875.340	789.327	875.340	779.512
p (t-test)		0.002		0.334		0.337
min	1.660	82.200	1.660	82.200	1.660	19.800
max	5380.000	33500.000	5380.000	2100.000	5380.000	2050.000
n (Samp)	89	11	89	11	89	7
n (Pat)	89	11	89	11	89	7

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.68	0.075	112	17	0.014
24 hours	0.62	0.077	112	17	0.109
48 hours	0.63	0.098	112	10	0.189

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.60	0.108	180	8	0.375
24 hours	0.56	0.107	180	8	0.580
48 hours	0.56	0.135	180	5	0.680

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.72	0.091	89	11	0.018
24 hours	0.65	0.094	89	11	0.120
48 hours	0.65	0.116	89	7	0.183

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	292	71%	48%	1			
	248	82%	45%	2	5.7	0.5	69.1
	84.3	94%	28%	3	3.2	0.2	49.9
	591	47%	71%	4	9.9	0.9	103.7
	741	47%	80%				
	1040	35%	90%				
24 hours	285	71%	46%	1			
	218	82%	43%	2	2.8	0.6	12.6
	79.8	94%	27%	3	2.8	0.6	12.6
	591	29%	71%	4	2.7	0.6	12.1
	741	29%	80%				

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	1040	24%	90%				
48 hours	323	70%	51%	1			
	248	80%	45%	2	3.1	0.2	48.6
	74.1	90%	26%	3	2.1	0.1	45.0
	591	40%	71%	4	4.3	0.3	57.3
	741	40%	80%				
	1040	30%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	272	75%	44%	1			
	211	88%	42%	2	na	na	na
	98	100%	27%	3	na	na	na
	601	38%	70%	4	na	na	na
	869	38%	80%				
	1460	0%	90%				
24 hours	272	75%	44%	1			
	211	88%	42%	2	3.1	0.2	46.7
	74.1	100%	23%	3	2.0	0.1	42.2
	601	25%	70%	4	2.0	0.1	42.2
	869	25%	80%				
	1460	0%	90%				
48 hours	211	80%	42%	1			
	211	80%	42%	2	2.0	0.1	42.3
	74.1	100%	23%	3	0.0	0.0	na
	601	40%	70%	4	2.0	0.1	41.3
	869	40%	80%				
	1460	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	412	73%	60%	1			
	248	82%	45%	2	2.1	0.1	46.6
	211	91%	43%	3	2.1	0.1	46.6
	601	55%	71%	4	7.6	0.6	89.7
	815	55%	81%				
	1480	27%	91%				
24 hours	248	73%	45%	1			
	218	82%	43%	2	3.3	0.2	53.0
	211	91%	43%	3	3.3	0.2	53.0
	601	36%	71%	4	4.6	0.3	63.1
	815	36%	81%				
	1480	27%	91%				
48 hours	412	71%	60%	1			
	323	86%	51%	2	1.0	0.0	59.8
	15.7	100%	7%	3	2.1	0.1	47.1
	601	43%	71%	4	3.3	0.2	53.6
	815	43%	81%				
	1480	29%	91%				

Fractalkine

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.586	1.892	0.586	1.844	0.586	0.801
average	0.790	2.035	0.790	1.499	0.790	1.220
stdev	0.708	1.503	0.708	0.907	0.708	0.808
p (t-test)		0.000		0.001		0.089
min	0.021	0.318	0.021	0.318	0.021	0.318
max	5.115	5.673	5.115	2.709	5.115	2.338
n (Samp)	93	15	93	13	93	9

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n (Pat)	93	15	93	13	93	9
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sCr only

	0 hr prior toAKI stage		24 hr prior toAKI stage		48 hr prior toAKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.634	1.550	0.634	1.550	0.634	0.552
average	0.797	2.162	0.797	1.519	0.797	0.940
stdev	0.822	2.011	0.822	1.038	0.822	0.951
p (t-test)		0.000		0.026		0.732
min	0.021	0.318	0.021	0.318	0.021	0.318
max	7.305	5.673	7.305	2.709	7.305	2.338
n (Samp)	152	7	152	7	152	4
n (Pat)	152	7	152	7	152	4

UO only

	0 hr prior toAKI stage		24 hr prior toAKI stage		48 hr prior toAKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.590	1.832	0.590	1.322	0.590	1.256
average	0.702	1.731	0.702	1.346	0.702	1.264
stdev	0.463	1.020	0.463	0.803	0.463	0.764
p (t-test)		0.000		0.001		0.008
min	0.082	0.363	0.082	0.363	0.082	0.363
max	2.449	3.813	2.449	2.517	2.449	2.233
n (Samp)	77	10	77	8	77	6
n (Pat)	77	10	77	8	77	6

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.79	0.072	93	15	0.000
24 hours	0.74	0.082	93	13	0.004
48 hours	0.67	0.103	93	9	0.091

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.71	0.112	152	7	0.055
24 hours	0.71	0.112	152	7	0.061
48 hours	0.51	0.148	152	4	0.933

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.82	0.083	77	10	0.000
24 hours	0.75	0.103	77	8	0.016
48 hours	0.73	0.120	77	6	0.052

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.79808	73%	63%	1			
	0.72115	80%	57%	2	2.1	0.1	45.9
	0.35156	93%	29%	3	2.1	0.1	45.9
	0.97952	67%	71%	4	15.3	1.5	159.8
	1.15	67%	81%				
	1.58784	60%	90%				
24 hours	0.72115	77%	57%	1			
	0.58594	85%	51%	2	2.0	0.1	44.3
	0.35156	92%	29%	3	3.3	0.2	52.4
	0.97952	54%	71%	4	8.8	0.8	98.0
	1.15	54%	81%				
	1.58784	54%	90%				
48 hours	0.58594	78%	51%	1			
	0.35156	89%	29%	2	2.0	0.1	44.5

Fig. 8 - 11

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	0.30273	100%	22%	3	2.1	0.1	46.6
	0.97952	44%	71%	4	4.4	0.3	60.0
	1.15	44%	81%				
	1.58784	44%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.79808	71%	64%	1			
	0.35156	86%	27%	2	1.0	0.0	54.4
	0.30273	100%	22%	3	1.0	0.0	54.4
	0.92	57%	70%	4	4.2	0.3	54.4
	1.1	57%	80%				
	1.38889	57%	90%				
24 hours	0.79808	71%	64%	1			
	0.35156	86%	27%	2	1.0	0.0	54.4
	0.30273	100%	22%	3	1.0	0.0	54.4
	0.92	57%	70%	4	4.2	0.3	54.4
	1.1	57%	80%				
	1.38889	57%	90%				
48 hours	0.35156	75%	27%	1			
	0.30273	100%	22%	2	1.0	0.0	55.9
	0.30273	100%	22%	3	1.0	0.0	55.9
	0.92	25%	70%	4	1.0	0.0	55.9
	1.1	25%	80%				
	1.38889	25%	90%				

Fig. 8 - 12

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Interleukin-1 receptor, type II

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	11561.532	26780.525	11561.532	26780.525	11561.532	26780.525
average	14131.723	44733.694	14131.723	44733.694	14131.723	27371.197
stdev	12617.339	54021.511	12617.339	54021.511	12617.339	15763.194
p (t-test)		0.012		0.012		0.069
min	3061.967	7943.978	3061.967	7943.978	3061.967	11212.050
max	56549.592	150973.398	56549.592	150973.398	56549.592	44711.687
n (Samp)	25	6	25	6	25	4
n (Pat)	25	6	25	6	25	4

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	11557.889	44711.687	11557.889	44711.687	11557.889	27961.868
average	14136.838	68965.712	14136.838	68965.712	14136.838	27961.868
stdev	10963.563	72969.185	10963.563	72969.185	10963.563	23687.821
p (t-test)		0.000		0.000		0.101
min	2160.038	11212.050	2160.038	11212.050	2160.038	11212.050
max	56549.592	150973.398	56549.592	150973.398	56549.592	44711.687
n (Samp)	44	3	44	3	44	2
n (Pat)	44	3	44	3	44	2

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	11255.704	14214.467	11255.704	14214.467	11255.704	17216.885
average	14181.425	18179.269	14181.425	18179.269	14181.425	21591.033
stdev	12668.036	12704.237	12668.036	12704.237	12668.036	13124.621
p (t-test)		0.563		0.563		0.349
min	3061.967	7943.978	3061.967	7943.978	3061.967	11212.050
max	56549.592	36344.165	56549.592	36344.165	56549.592	36344.165
n (Samp)	25	4	25	4	25	3
n (Pat)	25	4	25	4	25	3

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.75	0.124	25	6	0.047
24 hours	0.75	0.124	25	6	0.047
48 hours	0.79	0.142	25	4	0.041

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.81	0.155	44	3	0.045
24 hours	0.81	0.155	44	3	0.045
48 hours	0.72	0.210	44	2	0.305

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.63	0.161	25	4	0.419
24 hours	0.63	0.161	25	4	0.419
48 hours	0.75	0.172	25	3	0.150

Fig. 8 - 13

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Lymphotoxin-alpha

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.456	5.020	0.456	4.000	0.456	3.575
average	2.966	7.587	2.966	6.094	2.966	5.928
stdev	6.398	9.262	6.398	6.957	6.398	7.702
p (t-test)		0.010		0.066		0.170
min	0.456	0.456	0.456	0.456	0.456	0.456
max	42.200	31.600	42.200	23.200	42.200	23.200
n (Samp)	112	17	112	17	112	10
n (Pat)	112	17	112	17	112	10

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.456	5.025	0.456	4.510	0.456	5.020
average	4.347	8.049	4.347	7.778	4.347	8.041
stdev	24.989	8.394	24.989	8.540	24.989	8.847
p (t-test)		0.677		0.700		0.742
min	0.456	0.456	0.456	0.456	0.456	0.456
max	330.000	23.200	330.000	23.200	330.000	23.200
n (Samp)	180	8	180	8	180	5
n (Pat)	180	8	180	8	180	5

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.456	5.020	0.456	5.020	0.456	3.150
average	2.813	7.013	2.813	4.903	2.813	4.518
stdev	5.751	9.383	5.751	4.784	5.751	5.597
p (t-test)		0.037		0.251		0.451
min	0.456	0.456	0.456	0.456	0.456	0.456
max	34.100	31.600	34.100	16.100	34.100	16.100
n (Samp)	89	11	89	11	89	7
n (Pat)	89	11	89	11	89	7

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.70	0.075	112	17	0.008
24 hours	0.69	0.075	112	17	0.012
48 hours	0.66	0.098	112	10	0.103

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.76	0.100	180	8	0.008
24 hours	0.75	0.101	180	8	0.014
48 hours	0.79	0.122	180	5	0.018

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.70	0.092	89	11	0.034
24 hours	0.69	0.093	89	11	0.040
48 hours	0.64	0.117	89	7	0.219

Fig. 8 - 14

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sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	2.32	65%	71%	4	na	na	na
	2.94	65%	81%				
	5.9	41%	90%				
24 hours	0	100%	0%	1			
	0	100%	0%	2	na	na	na
	0	100%	0%	3	na	na	na
	2.32	65%	71%	4	na	na	na
	2.94	59%	81%				
	5.9	41%	90%				
48 hours	0	100%	0%	1			
	0	100%	0%	2	3.1	0.2	48.6
	0	100%	0%	3	0.0	0.0	na
	2.32	60%	71%	4	7.0	0.6	79.3
	2.94	60%	81%				
	5.9	30%	90%				

Fig. 8 - 15

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Matrix metalloproteinase-3

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.075	0.360	0.075	0.169	0.075	0.166
average	0.164	0.381	0.164	0.290	0.164	0.238
stdev	0.254	0.332	0.254	0.300	0.254	0.264
p (t-test)		0.002		0.065		0.380
min	0.002	0.002	0.002	0.002	0.002	0.002
max	1.490	0.996	1.490	0.927	1.490	0.927
n (Samp)	112	17	112	17	112	10
n (Pat)	112	17	112	17	112	10

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.086	0.205	0.086	0.120	0.086	0.150
average	0.195	0.373	0.195	0.268	0.195	0.274
stdev	0.319	0.381	0.319	0.341	0.319	0.368
p (t-test)		0.128		0.528		0.590
min	0.002	0.062	0.002	0.002	0.002	0.062
max	2.160	0.996	2.160	0.927	2.160	0.927
n (Samp)	180	8	180	8	180	5
n (Pat)	180	8	180	8	180	5

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	0.068	0.360	0.068	0.194	0.068	0.169
average	0.148	0.355	0.148	0.290	0.148	0.176
stdev	0.217	0.285	0.217	0.254	0.217	0.122
p (t-test)		0.005		0.048		0.743
min	0.002	0.002	0.002	0.002	0.002	0.002
max	1.190	0.872	1.190	0.872	1.190	0.366
n (Samp)	89	11	89	11	89	7
n (Pat)	89	11	89	11	89	7

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.75	0.072	112	17	0.001
24 hours	0.65	0.076	112	17	0.051
48 hours	0.66	0.097	112	10	0.093

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.71	0.105	180	8	0.041
24 hours	0.57	0.108	180	8	0.542
48 hours	0.63	0.136	180	5	0.332

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.76	0.087	89	11	0.002
24 hours	0.72	0.091	89	11	0.015
48 hours	0.65	0.117	89	7	0.195

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.145	71%	68%	1			

Fig. 8 - 16

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24 hours	0.0898	82%	54%	2	3.2	0.2	49.9
	0.0591	94%	46%	3	3.2	0.2	49.9
	0.161	65%	71%	4	13.5	1.3	135.0
	0.222	59%	80%				
	0.407	29%	90%				
	0.0678	71%	49%	1			
	0.0591	82%	46%	2	1.0	0.2	4.2
	0	100%	0%	3	1.4	0.4	5.0
	0.161	53%	71%	4	2.6	0.9	7.6
	0.222	41%	80%				
48 hours	0.407	24%	90%				
	0.145	70%	68%	1			
	0.0678	80%	49%	2	2.0	0.1	43.3
	0.0591	90%	46%	3	3.2	0.2	50.6
	0.161	60%	71%	4	4.3	0.3	57.3
	0.222	30%	80%				
	0.407	10%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.0912	75%	53%	1			
	0.0898	88%	52%	2	na	na	na
	0.0591	100%	42%	3	na	na	na
	0.183	50%	70%	4	na	na	na
	0.282	38%	80%				
24 hours	0.518	25%	90%				
	0.0591	75%	42%	1			
	0	100%	0%	2	0.5	0.0	10.1
	0	100%	0%	3	1.0	0.1	7.7
	0.183	38%	70%	4	1.5	0.3	8.6
	0.282	25%	80%				
48 hours	0.518	25%	90%				
	0.0657	80%	43%	1			
	0.0657	80%	43%	2	na	na	na
	0.0591	100%	42%	3	na	na	na
	0.183	20%	70%	4	na	na	na
	0.282	20%	80%				
	0.518	20%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	0.161	73%	72%	1			
	0.145	82%	70%	2	1.0	0.0	59.3
	0.0678	91%	51%	3	2.1	0.1	46.6
	0.159	73%	71%	4	9.3	0.8	106.1
	0.222	64%	81%				
	0.383	27%	91%				
24 hours	0.145	73%	70%	1			
	0.0678	82%	51%	2	2.1	0.1	46.6
	0.0591	91%	48%	3	3.3	0.2	53.0
	0.159	64%	71%	4	6.0	0.5	75.4
	0.222	45%	81%				
	0.383	27%	91%				
48 hours	0.145	71%	70%	1			
	0.0678	86%	51%	2	na	na	na
	0	100%	0%	3	na	na	na
	0.159	57%	71%	4	na	na	na
	0.222	29%	81%				
	0.383	0%	91%				

Fig. 8 - 17

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MDC (C-C motif chemokine 22)

sCr or UO

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	306.500	252.000	306.500	252.000	306.500	291.000
average	343.004	263.435	343.004	258.376	343.004	286.800
stdev	203.248	129.525	203.248	124.923	203.248	145.899
p (t-test)		0.120		0.098		0.395
min	39.200	56.700	39.200	56.700	39.200	47.000
max	1170.000	489.000	1170.000	489.000	1170.000	489.000
n (Samp)	112	17	112	17	112	10
n (Pat)	112	17	112	17	112	10

sCr only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	303.500	233.500	303.500	233.500	303.500	311.000
average	334.333	284.125	334.333	276.000	334.333	316.000
stdev	207.841	116.726	207.841	107.237	207.841	117.235
p (t-test)		0.499		0.432		0.845
min	39.200	161.000	39.200	161.000	39.200	207.000
max	1560.000	489.000	1560.000	489.000	1560.000	489.000
n (Samp)	180	8	180	8	180	5
n (Pat)	180	8	180	8	180	5

UO only

	0 hr prior to AKI stage		24 hr prior to AKI stage		48 hr prior to AKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	312.000	283.000	312.000	283.000	312.000	271.000
average	355.057	264.127	355.057	262.218	355.057	284.000
stdev	211.789	149.417	211.789	148.990	211.789	172.682
p (t-test)		0.171		0.162		0.390
min	56.100	56.700	56.100	56.700	56.100	47.000
max	1170.000	489.000	1170.000	489.000	1170.000	489.000
n (Samp)	89	11	89	11	89	7
n (Pat)	89	11	89	11	89	7

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.38	0.069	112	17	0.092
24 hours	0.37	0.068	112	17	0.062
48 hours	0.43	0.091	112	10	0.452

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.43	0.099	180	8	0.508
24 hours	0.42	0.098	180	8	0.408
48 hours	0.51	0.132	180	5	0.970

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.38	0.083	89	11	0.140
24 hours	0.37	0.082	89	11	0.111
48 hours	0.41	0.106	89	7	0.382

sCr or UO

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	205	71%	23%	1			
	156	82%	15%	2	2.9	0.6	13.0
	67.6	94%	4%	3	2.2	0.4	11.0
	412	18%	71%	4	3.6	0.8	15.2
	480	6%	80%				

Fig. 8 - 18

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	572	0%	90%				
24 hours	205	71%	23%	1			
	156	82%	15%	2	2.2	0.4	11.0
	67.6	94%	4%	3	2.9	0.6	13.0
	412	12%	71%	4	3.6	0.8	15.2
	480	6%	80%				
	572	0%	90%				
48 hours	205	70%	23%	1			
	176	80%	20%	2	1.6	0.3	9.5
	112	90%	11%	3	0.5	0.0	10.4
	412	20%	71%	4	2.2	0.4	11.2
	480	10%	80%				
	572	0%	90%				

sCr only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	209	75%	28%	1			
	205	88%	26%	2	0.5	0.0	10.1
	156	100%	16%	3	2.1	0.4	10.0
	401	25%	70%	4	0.5	0.0	10.1
	469	13%	80%				
	534	0%	90%				
24 hours	209	75%	28%	1			
	205	88%	26%	2	2.0	0.1	42.2
	156	100%	16%	3	4.3	0.3	54.2
	401	13%	70%	4	1.0	0.0	54.9
	469	13%	80%				
	534	0%	90%				
48 hours	209	80%	28%	1			
	209	80%	28%	2	na	na	na
	205	100%	26%	3	na	na	na
	401	20%	70%	4	na	na	na
	469	20%	80%				
	534	0%	90%				

UO only

Time prior AKI stage	Cutoff value	sens	spec	Quartile	OR	95% CI of OR	
0 hours	176	73%	18%	1			
	112	82%	10%	2	1.6	0.3	9.6
	67.6	91%	2%	3	1.0	0.1	8.4
	427	18%	71%	4	2.2	0.4	11.4
	491	0%	81%				
	576	0%	91%				
24 hours	176	73%	18%	1			
	112	82%	10%	2	1.0	0.1	8.4
	67.6	91%	2%	3	1.6	0.3	9.6
	427	18%	71%	4	2.2	0.4	11.4
	491	0%	81%				
	576	0%	91%				
48 hours	176	71%	18%	1			
	112	86%	10%	2	0.5	0.0	10.8
	0	100%	0%	3	0.5	0.0	10.8
	427	29%	71%	4	1.6	0.3	9.7
	491	0%	81%				
	576	0%	91%				

Thrombospondin-1

sCr or UO

0 hr prior to AKI stage

24 hr prior to AKI stage

48 hr prior to AKI stage

Fig. 8 - 19

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	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2346.491	1056.437	2346.491	816.231	2346.491	674.270
average	3228.079	1204.766	3228.079	780.207	3228.079	743.543
stdev	2512.665	876.922	2512.665	381.033	2512.665	411.486
p (t-test)		0.017		0.015		0.021
min	177.557	338.785	177.557	205.966	177.557	205.966
max	9514.803	3314.145	9514.803	1335.139	9514.803	1335.139
n (Samp)	37	10	37	7	37	6
n (Pat)	37	10	37	7	37	6

sCr only

	0 hr prior toAKI stage		24 hr prior toAKI stage		48 hr prior toAKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2300.310	816.231	2300.310	816.231	2300.310	1075.685
average	2961.527	784.483	2961.527	906.919	2961.527	1075.685
stdev	2469.791	372.589	2469.791	390.849	2469.791	366.923
p (t-test)		0.055		0.158		0.288
min	177.557	338.785	177.557	569.386	177.557	816.231
max	9514.803	1335.139	9514.803	1335.139	9514.803	1335.139
n (Samp)	60	5	60	3	60	2
n (Pat)	60	5	60	3	60	2

UO only

	0 hr prior toAKI stage		24 hr prior toAKI stage		48 hr prior toAKI stage	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
median	2346.491	1486.842	2346.491	735.646	2346.491	520.243
average	3534.326	1625.048	3534.326	685.173	3534.326	577.471
stdev	2670.174	1072.295	2670.174	400.541	2670.174	356.378
p (t-test)		0.130		0.044		0.037
min	606.462	368.114	606.462	205.966	606.462	205.966
max	9514.803	3314.145	9514.803	1063.433	9514.803	1063.433
n (Samp)	27	5	27	4	27	4
n (Pat)	27	5	27	4	27	4

sCr or UO

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.21	0.072	37	10	0.000
24 hours	0.13	0.058	37	7	0.000
48 hours	0.13	0.060	37	6	0.000

sCr only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.17	0.073	60	5	0.000
24 hours	0.21	0.106	60	3	0.006
48 hours	0.26	0.147	60	2	0.100

UO only

Time prior AKI stage	AUC	SE	nCohort 1	nCohort 2	p
0 hours	0.27	0.110	27	5	0.041
24 hours	0.06	0.043	27	4	0.000
48 hours	0.04	0.034	27	4	0.000

Fig. 8 - 20