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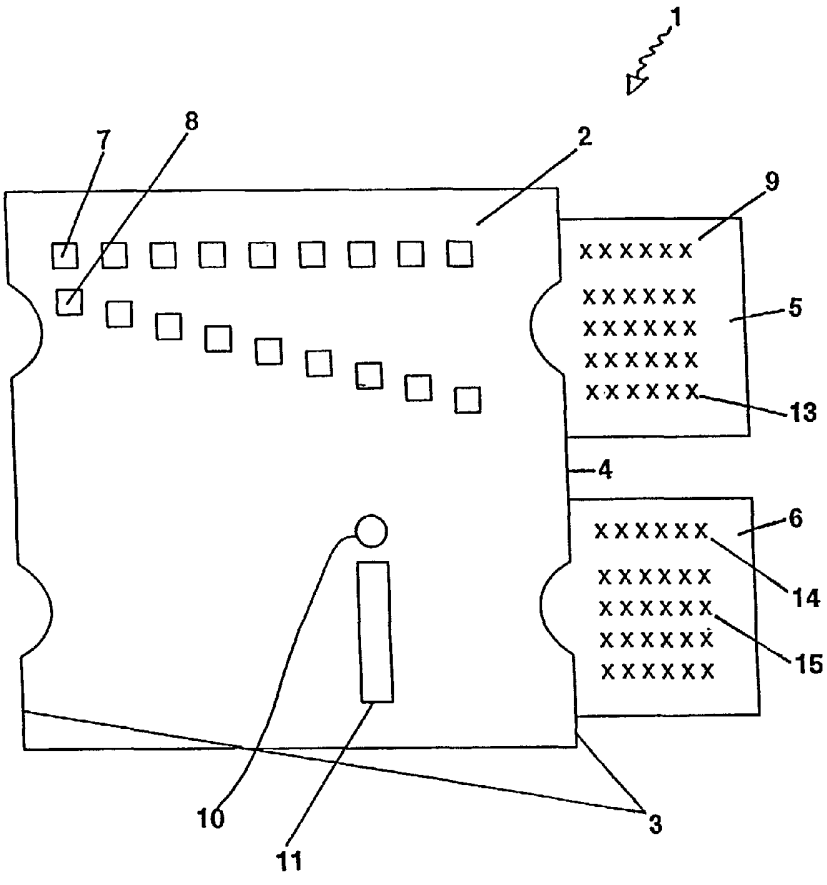

(57) Abstract: A device for performing a calculation derived from a predetermined value, the device including: at least one sleeve with printed indicia, andat least two moveable assemblies, each with at least two sets of numerical data,wherein the sleeve has at least two means of displaying the numerical data,characterised in thatthe device is configured so it can be operated by the steps of v) aligning the predetermined value in the first set of numerical data on the first moveable assembly with a first display location on the sleeve so that an intermediate number in a second set of numerical data on the first moveable assembly is displayed at the second display location, and vi) aligning an approximate intermediate value from the first set of numerical data on the second moveable assembly with a third display location on the sleeve, so that the appropriate numerical result in the second set of numerical data on the second moveable assembly is displayed in the fourth display location of the sleeve.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

CALCULATOR DEVICE

TECHNICAL FIELD

This invention relates to a calculating device.

In particular, this invention relates to a device for calculating the creatinine clearance rate as an indication of renal function.

Reference throughout this specification shall now be made to use of the present invention for use in calculating the creatinine clearance level in humans. However, this should not be seen as a limitation on the present invention in any way.

BACKGROUND ART

Slide rules have existed for many years, being devices used for the mechanical performance of mathematical processes such as addition, multiplication and so forth.

A slide rule consists of one rule sliding within or adjacent to another, so that their similar logarithmic scales permit the performance of mathematical processes of the numbers engraved thereon.

A basic slide rule thus only permits simple mathematical calculations to be carried out and the advent of electronic calculators have now rendered slide rules largely obsolete.

Other variations upon the slide rule have been developed.

NZ Patent No. 162226 discloses a combination of scale disks for teaching music theory.

This device consists of a set of five disks joined at their central point on a common axis, and marked in such a way that they can be rotated with respect to each other in

order to indicate each type of scale, major and harmonic minor for use in teaching music theory.

No calculations are taught in on NZ 162226; the disks merely indicate the relationship between particular notes and scales.

A wide range of slide rule like devices have previously been used, but generally these all suffered from similar problems, being initially hard to use and understand, and limited in the number of possible calculations able to be performed.

While slide rules did provide a good visual representation of the mathematical processes, they have been largely superseded by electronic calculators.

Because however the bulk of calculations are today done electronically, when complex formulae are used and a number of calculations are required, it is easy for mistakes to be made during data entry.

Because only an output answer is given in most cases, it is not always immediately obvious that a mistake has been made, or where in the process the mistake occurred.

Creatinine clearance levels in a body can be calculated using the 'Cockroft and Gault' equation. This equation estimates the creatinine clearance level (CC), by:

$$CC\ (ml/min) = \frac{(140\text{-age}) \times \text{lean body weight (kg)}}{815 \times \text{serum creatinine (mmol/L)}}.$$

The calculated number is then multiplied by a factor of 0.85 for females.

This calculation thus requires a measure of serum creatinine and a number of calculation steps, which may take some time to carry out. It also is not gender specific, and a further step must be used when measuring the clearance level for females.

Whilst computer programmes have been developed to calculate creatinine clearance, health workers may not have the time to find a suitable computer to access these, especially when carrying out routine checks on patients.

Further, such programmes typically generate the result without a user being able to observe how the calculations were carried out, making the user totally reliant on the background programming. As such, any errors may not be discovered, wherein incorrect indications of renal function may impact greatly on patient health and safety.

One alternative method of estimating the creatinine clearance rate is to collect all urine from an individual over a 24-hour period and analyse the fluid to determine the amount of creatinine excreted. Because this method is both very labour intensive and impractical, it is rarely used, if at all.

Serum creatinine concentration alone can be used as an indicator of renal function but this can be misleading as it fails to take into account other factors such as age and weight of the patient.

It would thus be preferable to have a calculating device which could determine creatinine clearance levels based on serum creatinine concentration simply and quickly, and provide a clear representation of the result.

All references, including any patents or patent applications cited in this specification are hereby incorporated by reference. No admission is made that any reference constitutes prior art. The discussion of the references states what their authors assert, and the applicants reserve the right to challenge the accuracy and pertinency of the cited documents. It will be clearly understood that, although a number of prior art publications are referred to herein, this reference does not constitute an admission that any of these documents form part of the common general knowledge in the art, in New

Zealand or in any other country.

It is acknowledged that the term 'comprise' may, under varying jurisdictions, be attributed with either an exclusive or an inclusive meaning. For the purpose of this specification, and unless otherwise noted, the term 'comprise' shall have an inclusive meaning - i.e. that it will be taken to mean an inclusion of not only the listed components it directly references, but also other non-specified components or elements. This rationale will also be used when the term 'comprised' or 'comprising' is used in relation to one or more steps in a method or process.

It is an object of the present invention to address the foregoing problems or at least to provide the public with a useful choice.

Further aspects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

DISCLOSURE OF INVENTION

According to one aspect of the present invention there is provided a device for performing a calculation derived from a predetermined value, the device including:

at least one sleeve with printed indicia, and

at least two moveable assemblies, each with at least two sets of numerical data,

wherein the sleeve has at least two means of displaying the numerical data,

characterised in that

the device is configured so it can be operated by the steps of

i) aligning the predetermined value in the first set of numerical data on the

first moveable assembly with a first display location on the sleeve so that an intermediate number in a second set of numerical data on the first moveable assembly is displayed at the second display location, and

ii) aligning an approximate intermediate value from the first set of numerical data on the second moveable assembly with a third display location on the sleeve, so that the appropriate numerical result in the second set of numerical data on the second moveable assembly is displayed in the fourth display location of the sleeve.

According to another aspect of the present invention there is provided a method for performing a calculation, using a device which includes

at least one sleeve with printed indicia, and

at least two moveable assemblies, each with at least two sets of numerical data,

wherein the sleeve has at least two means of displaying the numerical data,

characterised by the steps of

i) aligning the predetermined value in the first set of numerical data on the first moveable assembly with a first display location on the sleeve so that an intermediate number in a second set of numerical data on the first moveable assembly is displayed at the second display location, and

ii) aligning an approximate intermediate value from the first set of numerical data on the second moveable assembly with a third display location on the sleeve, so that the appropriate numerical result in the second set of numerical data on the second moveable assembly is displayed in the fourth display location of the sleeve.

The term "predetermined value" used within the present specification should be understood to mean the initial value on which the calculation is to be based.

In preferred embodiments of the present invention the predetermined value is a measure of serum creatinine (mmol/l) with the device used to calculate the creatinine clearance rate of an individual.

The term "numerical result" used within the present specification should be understood to be the result generated by performing the calculation.

Preferably, the numerical result is the creatinine clearance rate (ml/min) of an individual.

However, these should not be seen as limiting for it is anticipated that the present invention could be used to rapidly perform a range of complex calculations, and not being limited solely to clinical situations, or the calculation of creatinine clearance.

It should be appreciated that the term "approximate intermediate value" may include the exact number, or may be rounded to the closest 0.05 decimal number for the purposes of simplicity. For example, the number of 1.09 will preferably be rounded to 1.10, which will not significantly alter the end result. This significantly reduces the number of data sets required.

The term "intermediate number" used within the present specification should be understood to mean any number produced as an intermediate step during a calculation.

It should also be appreciated that while in other circumstances a single moveable assembly could theoretically be used to carry all the required information, the applicant has found that for the present invention one moveable assembly cannot provide sufficient information to perform the calculation without significant rounding.

The use of two moveable assemblies has been found by the applicant to be much superior in terms of ease of use and the validity of the final result – as significant rounding is not required due to the second moveable assembly being able to display further data sets.

The sleeve may be of any material, but preferably is of a durable material such as thick paper card.

The term "moveable assemblies" used within the present specification should be understood to be constructed of a durable material such as paper card or plastic that can be slid in relation to the sleeve.

Reference throughout the present specification shall now be made to the moveable assemblies as being cards.

This should not be seen to be a limitation on the present invention in any way as this is by way of example only and the moveable assemblies could just as easily be constructed of any other suitable material.

The term "printed indicia" used within the present specification should be understood to encompass all printing that may be printed upon the card for use in the present invention. These may include clinical information such as suggested dosage adjustments, numerical data, or alternatively markings which help to display appropriate areas of the moveable assemblies.

In preferred embodiments the printed indicia includes numerical data for at least one factor known to affect renal function, such as the age of the individual, lean body weight or so forth. These data can be used when estimating the creatinine clearance for an individual.

In preferred embodiments of the present invention the sleeve and cards are designed to accept one or both of printed indicia or sets of numbers.

The sleeve may be made of a single layer of card, folded to create two layers and forming a sleeve between which the cards may slide.

However, this should not be seen as limiting as in other embodiments the sleeve may consist of a single layer, with rails affixed to the underside along which the cards may slide.

In other embodiments the layer of card may be folded to create at least two distinct sleeves, one for each card. This can allow further data sets to be used to provide more information, or the provision of gender-specific cards.

In preferred embodiments the sleeve will be substantially opaque to mask the cards beneath, with at least two means provided for allowing the display of the numbers printed upon the cards.

These display means may be apertures cut from the sleeve through which portions of the underlying cards may be viewed. However, this should not be seen as limiting as the display means may be any arrangement that allows the display of portions of the underlying cards, such as transparent windows.

In other embodiments of the present invention the sleeve may be substantially transparent, wherein the appropriate numbers on the underlying cards may be chosen by an arrangement of printed indicia upon the sleeve.

In preferred embodiments of the present invention the sleeve will be separated into two distinct sleeves by an internal dividing means, so that each card may slide independently and without interference on the other card.

Reference shall now be made to the sleeve as having two portions; a first and second portion which overlie a first and second card respectively.

However, it should be appreciated this is given by way of example only for the purposes of clarity. For example, the sleeve may be divided into two sleeves by an internal dividing means, with the exterior surface of the sleeve appearing to be a single entity; or alternatively the sleeve may be externally divided into two distinct sleeves.

In preferred embodiments of the present invention, the first card will have two sets of numerical data; a first and second set. However, this should not been seen as limiting, and a different number of data sets may be required for other aspects of the present invention.

In a further preferred embodiment of the present invention the second card is printed four sets of numerical data. Two sets of the data may be printed on one side of the card, while the other two sets may be printed on the alternate side. This eliminates the need for a third card, and allows differences due to gender to be easily factored into the calculation by placing gender specific information on each side of the card.

However, this should not be seen as limiting for in other embodiments of the present invention the four data sets may be printed onto the same side of the card, and displayed alongside each other.

In further preferred embodiments the arrangement of the cards may be reversed, with the first card having four sets of numerical data and the second card having two sets.

Other embodiments may provide a number of gender- or age-specific cards, with the data sets printed on one side of the card only, for the purposes of clarity.

Reference shall now be made to the two data sets on the first card as being the first and

second data sets, and the data sets of the second card as being the third and forth data sets of the present invention, respectively.

Additionally, the range of numerical data comprising the second data set of the first card are substantially the same (or rounded within 0.05) to those of the third set of numerical data shown on the second card.

In another aspect of the present invention the first portion of the sleeve has two series of apertures by which the underlying card can be viewed. These match the position of the first and second data sets printed on the underlying cards, respectively.

However this should not been seen as limiting as in other embodiments there may be provided only a single series of apertures, and the appropriate number of the second data series displayed by means of indicia printed on the sleeve.

On the second portion of the sleeve there is preferably a single long aperture by which the third and fourth data sets of the present invention may be viewed.

By lining up the appropriate number of the third data series with the corresponding aperture, the numerical result can be chosen from the forth data set by reading the number beside further printed indicia on the sleeve.

Estimation of patient renal function is important in a number of clinical situations and is often calculated by health workers when a potentially toxic drug is predominantly cleared by renal function.

If a patient's renal function is found to be abnormal, the drug dosage may need to be adjusted either by reducing the size of the dose or the interval between doses, relative to the extent of renal impairment.

Creatinine clearance is a measure of the volume of blood plasma that is cleared of creatinine in a fixed time period, often measured in units of milliliters/minute (ml/min).

Creatinine is normally present in the body and thus typically has stable plasma concentrations, is freely filtered by the kidneys with little reabsorbtion and is minimally secreted by the kidneys. These unique properties make creatinine useful for estimating glomerluar filtration rate (GFR) and thus providing an indication of renal function.

Creatinine clearance in an individual is however also effected by gender, age and lean body weight, requiring many factors to be taken into account when performing any calculation.

Creatinine clearance levels can be calculated using the 'Cockroft and Gault' equation. This equation estimates the creatinine clearance level (CC), by:

$$CC\ (ml/min) = \frac{(140\text{-age}) \times \text{lean body weight (kg)}}{815 \times \text{serum creatinine (mmol/L)}}.$$

The calculated number is then multiplied by a factor of 0.85 for females.

As this calculation requires a number of steps it is easy for errors to inadvertently be introduced into the calculation and give an incorrect estimation of renal function.

Computer programmes have also been developed to calculate creatinine clearance, based on the above equation. However, health workers may not always have ready access to a computer, especially when carrying out routine checks on patients.

Further, such computer programmes typically do not allow a user to observe the calculation steps, making the user totally reliant on the background programming. As such, any errors in the programme may not be discovered, with incorrect indications of

renal function possibly impacting greatly on patient health and well-being as a result of incorrect drug dosing.

The alternative method of estimating the creatinine clearance rate is to collect all urine from an individual over a 24-hr time period and analyse the fluid to determine the amount of creatinine excreted. As this method is however both very labour intensive and impractical, it is rarely used, if at all.

The present invention overcomes many of the above problems, allowing the rapid calculation of creatinine clearance without the requirement for many calculation steps or computer programmes. As the intermediate values have all been precalculated, there is a much reduced risk of errors being made when calculating creatinine clearance.

The ability of the sleeve to preferentially display portions of the underlying data sets and align these with printed indicia corresponding to age, lean body weight etc of an individual allows a user to ensure these factors are taken into account when calculating performing calculations of creatinine clearance.

The visual representation of the calculation steps and associated values also allows a user to determine where a mistake in the calculation has been made, (such as by incorrect alignment of intermediate values and display portions), meaning such errors can be readily corrected, thus reducing the chances on incorrect estimations of renal function impacting on patient health.

The simplicity of construction and the ease of use of the present invention allow it to be manufactured cheaply and find use in a variety of clinical situations. Further, the compact, lightweight nature of the present invention allow it to be easily carried by health workers, such as in a coat pocket when conducting routine patient checks.

It should be appreciated that although reference throughout this specification has been

made to the present invention as a calculating device for use calculating creatinine clearance rates and a method therefore, the calculating device and method may find use in other areas, where a complex calculation is required to be quickly and accurately performed.

BRIEF DESCRIPTION OF DRAWINGS

Further aspects of the present invention will become apparent from the following description which is given by way of example only and with reference to the accompanying drawings in which:

Figure 1 is a diagrammatic representation of one preferred embodiment of the present invention, and

Figure 2 is a representation showing one opened aspect of the present invention, and

Figure 3 is a representation showing another aspect of the present invention.

BEST MODES FOR CARRYING OUT THE INVENTION

With respect to the drawings, there is provided a calculating device for use in a number of clinical situations as indicated by arrow 1. In the present invention the calculating device uses the steps of the 'Cockroft and Gault' equation to determine the creatinine clearance level of the individual as an indication of renal function.

The calculating device (1) is preferably made from a single layer of card, folded to form two layers and joined top and bottom, forming a sleeve (2).

The sleeve (2) is open on either side (3), forming a sleeve which allows a card slide from side to side between the layers of the sleeve (2).

Preferably, the sleeve has a central divider (4) which allows a first card (5) and second card (6) to slide through the sleeve (2) independently of each other.

In the first portion of the sleeve (2) are preferably cut two series of apertures (7 & 8). The first series of apertures (7) allows the first set of numbers (9) on the top card (5) to be viewed.

The first series of apertures (7) is marked with numbers corresponding to the age of the person being tested.

The first set of numbers (9) on the top card (5) correspond to the serum creatinine level of the person.

By matching the serum creatinine level number (9) to the aperture (7) corresponding to an individual's age, a second number (13) can be read through the corresponding aperture of the second aperture series (8). The second number (13) is thus an intermediate number, required for the second stage of the calculation.

The second portion of the sleeve (2) preferably has a further two apertures (10 & 11) with which to view the second card (6). The third aperture (10) of the sleeve (2) is circular, and the forth aperture (11) is a long, thin aperture through which a series of numbers of the card (6) can be viewed.

The second card (6) has two sets of numbers (14 & 15) printed on either side (not shown), each side corresponding to either male or female patients.

The intermediate number (13) from the second aperture (8) is then transposed to the same number (14) (within 0.05 units) on the second card (6) as viewed through the third aperture (10). A fourth set of numbers (15) seen through the fourth aperture (12) can then be compared to the lean body weight (kg) of the individual, which is printed

(not shown) onto the sleeve (2) beside the fourth aperture (11) to determine the creatinine clearance level of the individual.

This level can then be interpreted to give an indication of renal function, dependent on the age of the individual.

Figures 2 and 3 show another preferred embodiment of the present invention, which functions substantially as described above.

The sleeve (2) may display further printed indicia (16) such as clinical data and suggested dose adjustments for use once creatinine clearance and renal function have been estimated.

In these embodiments, the sleeve (2) is separated into two distinct sleeves (17 and 18) by a central dividing strip (4), allowing gender-specific information to be displayed on separate cards for improved clarity.

Aspects of the present invention have been described by way of example only and it should be appreciated that modifications and additions may be made thereto without departing from the scope thereof as defined in the appended claims.

WHAT WE CLAIM IS:

1. A device for performing a calculation derived from a predetermined value, the device including:

at least one sleeve with printed indicia, and

at least two moveable assemblies, each with at least two sets of numerical data,

wherein the sleeve has at least two means of displaying the numerical data,

characterised in that

the device is configured so it can be operated by the steps of

iii) aligning the predetermined value in the first set of numerical data on the first moveable assembly with a first display location on the sleeve so that an intermediate number in a second set of numerical data on the first moveable assembly is displayed at the second display location, and

iv) aligning an approximate intermediate value from the first set of numerical data on the second moveable assembly with a third display location on the sleeve, so that the appropriate numerical result in the second set of numerical data on the second moveable assembly is displayed in the fourth display location of the sleeve.

2. A device as claimed in claim 1 wherein the predetermined value is a measure of serum creatinine (mmol/l).

3. A device as claimed in claim 1 or claim 2 wherein the numerical result is the creatinine clearance rate of an individual.

4. A device as claimed in any one of claims 1 to 3 wherein the moveable assemblies can be slid in relation to the sleeve.

5. A device as claimed in any one of claims 1 to 4 wherein the moveable assemblies are cards.

6. A device as claimed in any one of claims 1 to 5 wherein the printed indicia include numerical data for at least one factor known to affect renal function.

7. A device as claimed in any one of claims 1 to 6 wherein the means of displaying the numerical data are apertures cut from the sleeve through which portions of the underlying moveable assemblies may be viewed.

8. A device as claimed in any one of claims 1 to 7 wherein the sleeve is separated into two distinct sleeves by a dividing means which enables each card to slide independently.

9. A device as claimed in any one of claims 1 to 8 wherein one card is printed with at least one set of numerical data on each side.

10. A device as claimed in any one of claims 1 to 9 wherein gender-specific information is printed on separate cards.

11. A device as claimed in any one of claims 1 to 10 wherein the range of numerical data comprising the second data set of the first card are substantially the same to those of the first set of numerical data shown on the second card.

12. A method for performing a calculation derived from a predetermined value, using a device which includes

at least one sleeve with printed indicia, and

at least two moveable assemblies, each with at least two sets of numerical data,

wherein the sleeve has at least two means of displaying the numerical data,

characterised by the steps of

i) aligning the predetermined value in the first set of numerical data on the first moveable assembly with a first display location on the sleeve so that an intermediate number in a second set of numerical data on the first moveable assembly is displayed at the second display location, and

ii) aligning an approximate intermediate value from the first set of numerical data on the second moveable assembly with a third display location on the sleeve, so that the appropriate numerical result in the second set of numerical data on the second moveable assembly is displayed in the fourth display location of the sleeve.

13. A method as claimed in claim 12 wherein the predetermined value is a measure of serum creatinine (mmol/l).

14. A method as claimed in claim 12 or claim 13 wherein the numerical result is the creatinine clearance rate of an individual.

15. A method as claimed in any one of claims 12 to 14 wherein the moveable assemblies can be slid in relation to the sleeve.

16. A method as claimed in any one of claims 12 to 15 wherein the moveable assemblies are cards.

17. A method as claimed in any one of claims 12 to 16 wherein the printed indicia include numerical data for at least one factor known to affect renal function.

18. A method as claimed in any one of claims 12 to 17 wherein the means of displaying the numerical data are apertures cut from the sleeve through which portions of the underlying moveable assemblies may be viewed.

19. A method as claimed in any one of claims 12 to 18 wherein the sleeve is separated into two distinct sleeves by a dividing means which enables each card to slide independently.

20. A method as claimed in any one of claims 12 to 19 wherein one card is printed with at least one set of numerical data on each side.

21. A method as claimed in any one of claims 12 to 20 wherein gender-specific information is printed on separate cards.

22. A method as claimed in any one of claims 12 to 21 wherein the range of numerical data comprising the second data set of the first card are substantially the same to those of the first set of numerical data shown on the second card.

23. A method of estimating the renal function of an individual using a device as described in claims 1 to 11.

24. A device substantially as described herein with reference to and as illustrated by the accompanying description and drawings

25. A method substantially as described herein with reference to and as illustrated by the accompanying description and drawings.

FIGURE 1

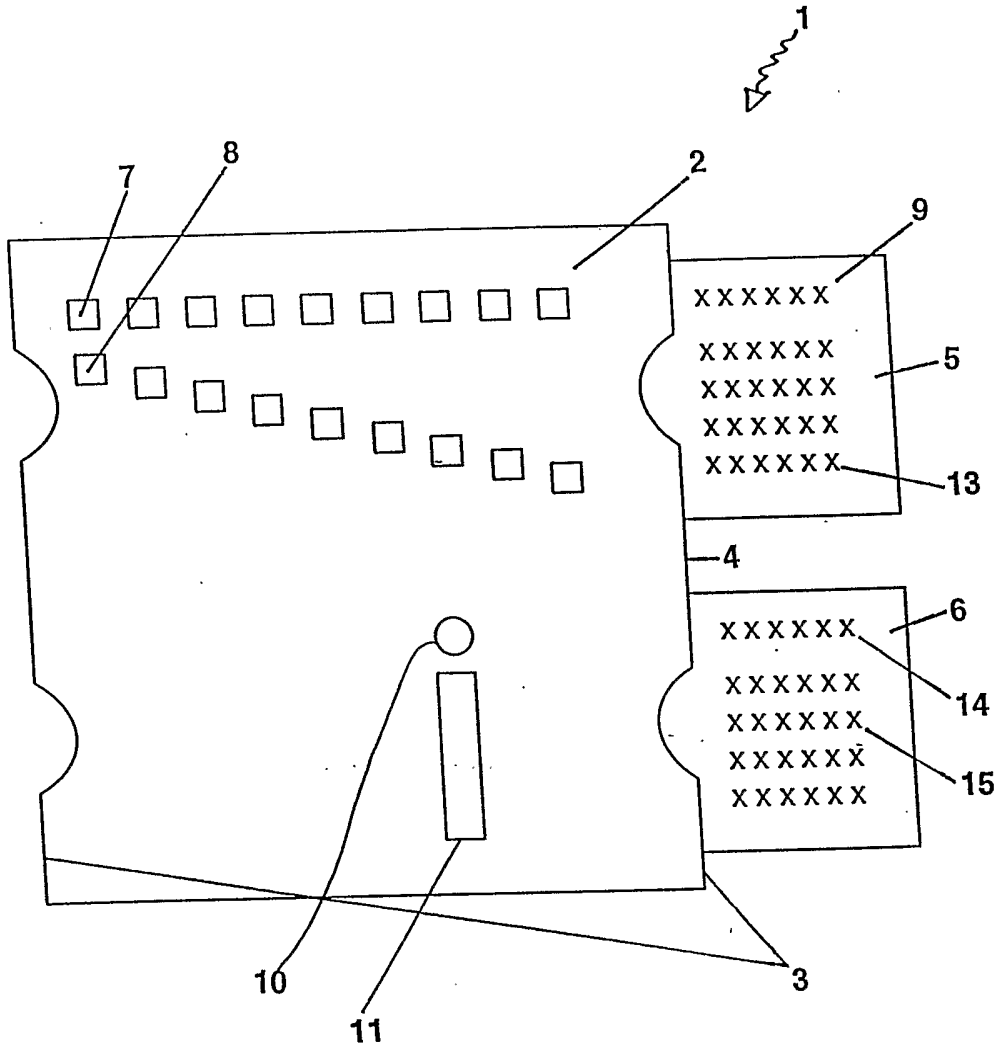
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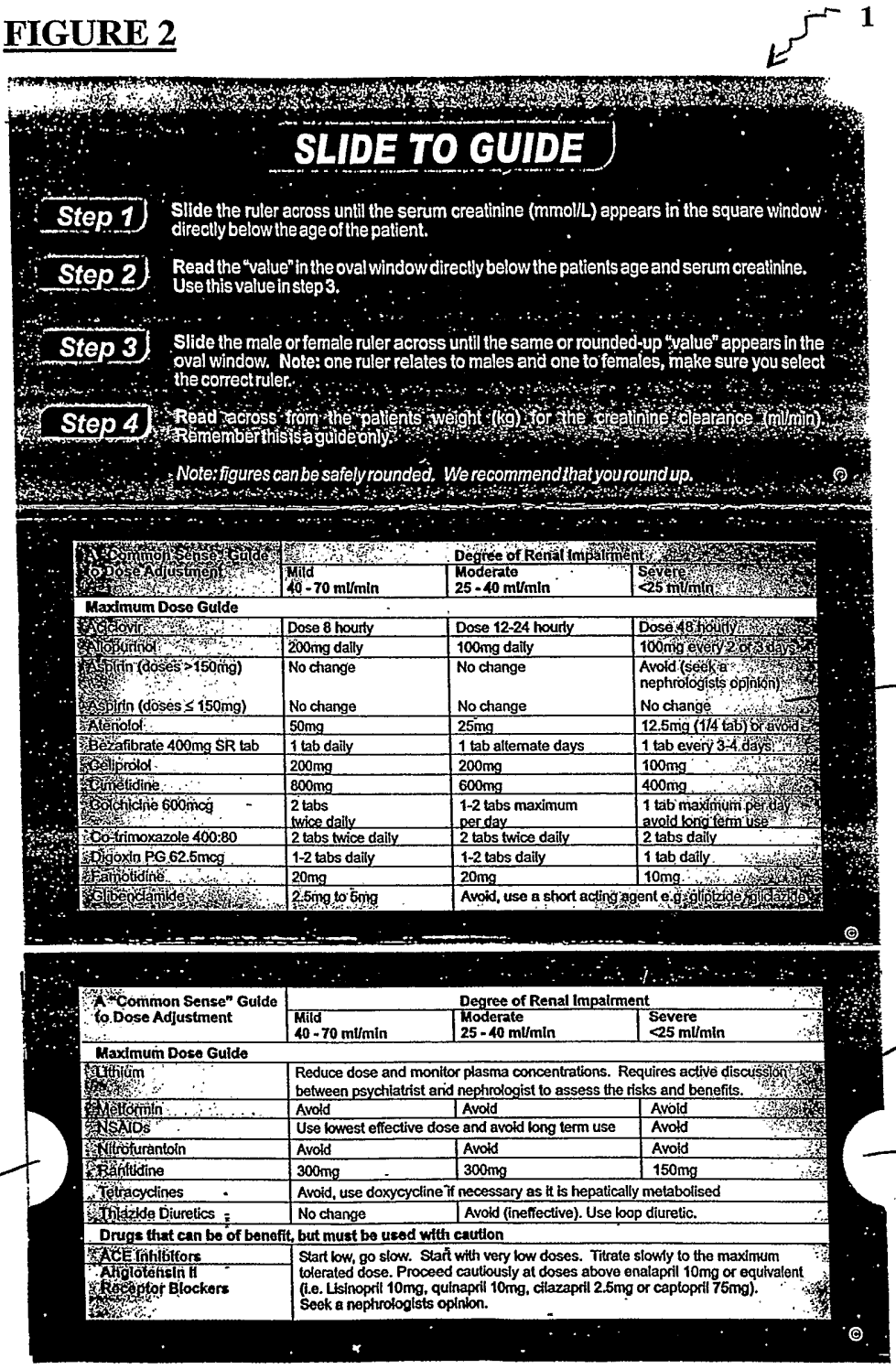
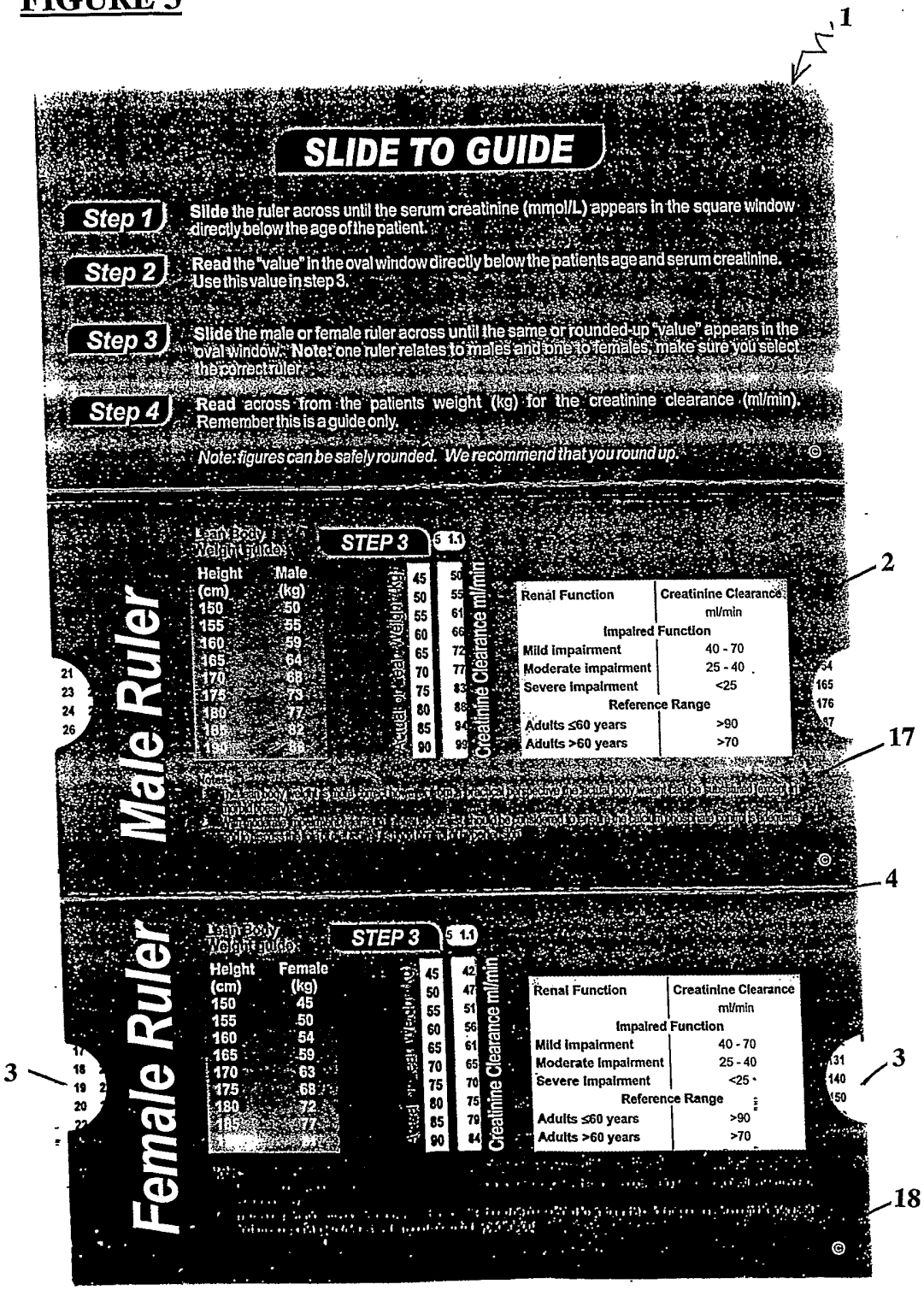
FIGURE 2



A "Common Sense" Guide to Dose Adjustment	Degree of Renal Impairment		
	Mild 40 - 70 ml/min	Moderate 25 - 40 ml/min	Severe <25 ml/min
Maximum Dose Guide			
Aciclovir	Dose 8 hourly	Dose 12-24 hourly	Dose 48 hourly
Allopurinol	200mg daily	100mg daily	100mg every 2 or 3 days
Aspirin (doses >150mg)	No change	No change	Avoid (seek a nephrologists opinion)
Aspirin (doses ≤ 150mg)	No change	No change	No change
Atenolol	50mg	25mg	12.5mg (1/4 tab) or avoid
Bezafibrate 400mg SR tab	1 tab daily	1 tab alternate days	1 tab every 3-4 days
Celiprolol	200mg	200mg	100mg
Cimetidine	800mg	600mg	400mg
Colchicine 600mcg	2 tabs twice daily	1-2 tabs maximum per day	1 tab maximum per day avoid long term use
Co-trimoxazole 400:80	2 tabs twice daily	2 tabs twice daily	2 tabs daily
Digoxin PG 62.5mcg	1-2 tabs daily	1-2 tabs daily	1 tab daily
Famotidine	20mg	20mg	10mg
Glibenclamide	2.5mg to 5mg	Avoid, use a short acting agent e.g. glipizide, gliclazide	

A "Common Sense" Guide to Dose Adjustment	Degree of Renal Impairment		
	Mild 40 - 70 ml/min	Moderate 25 - 40 ml/min	Severe <25 ml/min
Maximum Dose Guide			
Lithium	Reduce dose and monitor plasma concentrations. Requires active discussion between psychiatrist and nephrologist to assess the risks and benefits.		
Metformin	Avoid	Avoid	Avoid
NSAIDs	Use lowest effective dose and avoid long term use		Avoid
Nitrofurantoin	Avoid	Avoid	Avoid
Ranitidine	300mg	300mg	150mg
Tetracyclines	Avoid, use doxycycline if necessary as it is hepatically metabolised		
Thiazide Diuretics	No change	Avoid (ineffective). Use loop diuretic.	
Drugs that can be of benefit, but must be used with caution			
ACE Inhibitors Angiotensin II Receptor Blockers	Start low, go slow. Start with very low doses. Titrate slowly to the maximum tolerated dose. Proceed cautiously at doses above enalapril 10mg or equivalent (i.e. Lisinopril 10mg, quinapril 10mg, cilazapril 2.5mg or captopril 75mg). Seek a nephrologists opinion.		

FIGURE 3


1
SLIDE TO GUIDE
Step 1
Slide the ruler across until the serum creatinine (mmol/L) appears in the square window directly below the age of the patient.
Step 2
Read the "value" in the oval window directly below the patients age and serum creatinine. Use this value in step 3.
Step 3
Slide the male or female ruler across until the same or rounded-up "value" appears in the oval window. Note: one ruler relates to males and one to females, make sure you select the correct ruler.
Step 4
Read across from the patients weight (kg) for the creatinine clearance (ml/min). Remember this is a guide only.
Note: figures can be safely rounded. We recommend that you round up.
Male Ruler
Lean Body Weight guide
STEP 3
Height (cm)
Male (kg)
Actual or Ideal Weight (kg)
Creatinine Clearance ml/min
Renal Function
Creatinine Clearance ml/min
Impaired Function
Mild impairment 40 - 70
Moderate impairment 25 - 40
Severe impairment <25
Reference Range
Adults ≤60 years >90
Adults >60 years >70
2
17
4
Female Ruler
Lean Body Weight guide
STEP 3
Height (cm)
Female (kg)
Actual or Ideal Weight (kg)
Creatinine Clearance ml/min
Renal Function
Creatinine Clearance ml/min
Impaired Function
Mild impairment 40 - 70
Moderate impairment 25 - 40
Severe impairment <25
Reference Range
Adults ≤60 years >90
Adults >60 years >70
3
3
18

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NZ02/00210

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. [7]: G06G 1/00 A61B 5/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPAT. Keywords: slide, window, sleeve, number and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5517007 A (MORGAN) 14 May 1996 Whole document	1-25
A	US 4785164 A (REED et al.) 15 November 1988 Whole document	1-25
A	GB 1557544 A (COLE) 12 December 1979 Whole document	1-25

☐ Further documents are listed in the continuation of Box C ☒ See patent family annex

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
17 January 2003	23 JAN 2003
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized officer **ROSEMARY LONGSTAFF** Telephone No : (02) 6283 2637

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/NZ02/00210

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member					
US	5517007	JP	8179845				
US	4785164	AU	18653/88	CA	1308703	GB	2208252
GB	1557544	CA	1134791	DE	2910192		

END OF ANNEX