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(54) Title: METHOD FOR THE TREATMENT OF SLEEP DISORDERS

(57) Abstract: The invention relates to a new use of pantoprazole.

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Method for the treatment of sleep disorders

Technical field

The invention relates to a new use of pantoprazole.

Description of the invention

It has been found that significant subject improvement in daytime sleepiness, reflux symptoms (including reflux awakening from sleep), and bed partner assessment of snoring change can be observed following Pantoprazole therapy.

The invention thus relates in a first aspect to the use of pantoprazole in the treatment of daytime sleepiness.

The invention relates in a second aspect to the use of pantoprazole in the treatment of snoring.

According to the invention, "pantoprazole" comprises not only the active compound as such, but also its enantiomers, i. e. (R)- and (S)-pantoprazole, as well as pharmacologically acceptable salts, solvates (in particular hydrates), etc. of pantoprazole, (R)-pantoprazole and (S)-pantoprazole.

Examples of pharmacologically acceptable salts, which may be mentioned, are sodium, potassium, magnesium or calcium salts. If pantoprazole or its salts is isolated in crystalline form, the crystals may contain variable amounts of solvent.

Particularly preferred salts or hydrates of pantoprazole, which may be mentioned are pantoprazole-sodium sesquihydrate (= pantoprazole-sodium x 1.5 H_2O), pantoprazole-magnesium dihydrate and (S)-pantoprazole-magnesium dihydrate.

In human medicine, it has generally been found to be advantageous to administer pantoprazole in a daily dose of from about 0.1 to 2, preferably 0.2 to 1.5 and in particular 0.3 to 1.1, mg/kg of body weight, if appropriate in the form of a plurality of, preferably 1 to 4, individual doses, to obtain the desired result. For parenteral treatment, it is possible to use similar or (in particular when the active compounds are administered intravenously) generally lower dosages. The person skilled in the art, owing to his expert knowledge, can easily determine the optimum dosage and the type of administration of the action compounds required in each case. Preferably, pantoprazole is administered in a daily dose of 40 mg.

Clinical investigations

Methods: 19 adult subjects (74% male) with symptoms of acid reflux disease and obstructive sleep disordered breathing were enrolled for a three month study of Pantoprazole (40 mg daily). Primary outcome measures included subjective change in daytime sleepiness (Epworth Sleepiness Scale, ESS), reflux symptoms (reflux questionnaire), and bed partner assessment of snoring.

Results: On average, patients at baseline had evidence of mild to moderate sleep apnea (mean AHI=16) with daytime somnolence (mean ESS=12.7). Following three month treatment with Pantoprazole, a statistically significant improvement was noted in daytime sleepiness ($p=0.01$), reflux symptom severity and frequency (both $p<0.001$), and bed-partner assessment of snoring improvement ($p<0.01$). Global symptom improvement was reported for 78% of patients ($p<0.001$), with significant reduction in frequency and severity of reflux awakening from sleep (both $p<0.002$).

Conclusions: This prospective pilot study suggests significant subjective improvement in daytime sleepiness, reflux symptoms (including reflux awakening from sleep), and bed partner assessment of snoring change following Pantoprazole therapy.

Patent claims

1. The use of pantoprazole in the treatment of daytime sleepiness.

2. The use of pantoprazole in the treatment of snoring.

3. The use of pantoprazole to reduce reflux awakening from sleep.

4. A ready-to-use medicament, comprising pantoprazole as active compound, which contains a reference to the fact that this ready-to-use medicament can be employed for the treatment of daytime sleepiness.

5. A ready-to-use medicament, comprising pantoprazole as active compound, which contains a reference to the fact that this ready-to-use medicament can be employed for the treatment of snoring.

6. Pantoprazole as mentioned in any of the claims 1 to 5, characterized by the fact that "pantoprazole" includes its enantiomers, i.e., (R)- and (S)-pantoprazole, in pure form or substantially free of the respective enantiomer, as well as pharmacologically acceptable salts, solvates (in particular hydrates), thereof.

7. Pantoprazole as mentioned in any of the claims 1 to 6, characterized by the fact that "pantoprazole" means pantoprazole-sodium sesquihydrate (= pantoprazole-sodium x 1.5 H_2O), pantoprazole-magnesium dehydrate and (S)-pantoprazole-magnesium dihydrate.