

Research Article



A Comparative Study of the Efficacy and Safety of Dexrabeprazole 10 mg versus Rabepazole 20 mg in the Treatment of GERD in A Tertiary Care Hospital

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Accepted on: 07-12-2013; Finalized on: 31-01-2014.

ABSTRACT

Dexrabeprazole is a novel proton pump inhibitor that is used in the treatment of Gastro oesophageal reflux disease. This report explains the superiority of Dexrabeprazole 10mg over Rabepazole 20mg in terms of improvement and relief from symptoms of GERD. To compare the efficacy and safety of Dexrabeprazole 10mg versus Rabepazole 20mg in the treatment of gastro esophageal reflux disease. Fifty patients with GERD were randomized to receive 4 week therapy of 10mg Dexrabeprazole (n=25) and Rabepazole 20mg (n=25) once a day in the morning. Daily changes in heart burn, regurgitation and dysphagia in the 4 week therapy was recorded and assessed. Safety profile was assessed by recording the adverse effects in both the study groups. A total of 50 patients (n = 25, M: F = 20:5), mean age: 40.52 ± 10.7 years, mean weight: 65.4 ± 10.6 kg in 10mg Dexrabeprazole group (n = 25, M: F = 17:8), mean age: 38.5 ± 7.4 years, mean weight: 66.3 ± 11.4 kg in 20 mg Rabepazole group completed the study. There were no significant differences in the baseline characteristics of the two groups. The mean symptom reduction score (mean ± SD) of heartburn, regurgitation and dysphagia in Dexrabeprazole and Rabepazole reduced significantly (P < 0.0001) from 2.57 ± 0.53, 2.85 ± 0.65, 3.62 ± 1.24 and 2.53 ± 0.48, 2.70 ± 0.52, 3.54 ± 1.05 on day 0 to 0.83 ± 0.01, 0.65 ± 0.04, 1.85 ± 1.02 and 1.04 ± 0.03, 0.88 ± 0.07, 2.02 ± 1.22 on day 28 of therapy respectively. Onset of symptom improvement was earlier (P < 0.0001) at 8.4 ± 1.57 days with Dexrabeprazole than with Rabepazole at 12.2 ± 2.3 days. There was no significant inter-group difference in improvement of symptom scores. In GERD, Dexrabeprazole will provide significantly better results than Rabepazole in terms of onset of symptom improvement and has similar safety and efficacy profile even when used at half the normal dose.

Keywords: Comparative study, Dexrabeprazole, Efficacy, GERD, Rabepazole, Safety.

INTRODUCTION

Rabeprazole is an inhibitor of the gastric proton pump. It causes dose dependent inhibition of acid secretion and has a more rapid onset of action than omeprazole. Rabepazole is mainly reduced via the non-enzymatic pathway to Rabepazole-thio ether. It is available as a racemic mixture of two isomers R (+)-isomer (dexrabeprazole) and S (-) isomer in 1:1 proportion.¹

Chemically Dexrabeprazole sodium is R (+)-isomer of Rabepazole. (2-[[[4-(3-methoxy propoxy)-3-methyl-2-pyridinyl]-methyl] sulfinyl] 1H benzimidazole). It belongs to a class of anti-secretory compounds that do not exhibit anti cholinergic or histamine H₂ Receptor antagonist properties but suppress gastric acid secretion by inhibiting the gastric H⁺/K⁺ATPase at the secretory surface gastric parietal cells.²

The efficacy of anti secretory drugs in GERD depends on the strength and duration of acid suppression within a 24 h period, and the duration of the treatment.³ Proton pump inhibitor (PPI) therapy is effective for acid-related symptoms.⁴ The time period required to obtain maximal inhibition of gastric acid secretion is, however, reported to differ between PPI.⁵⁻⁷ The time taken for the resolution of symptoms in patients with GERD is, therefore, unlikely to be uniform in all PPI. As the quality of life (QOL) of

patients with GERD is decreased by heartburn symptoms⁸, quick symptom relief is important to normalize their QOL. In this study the differences in symptom relief in the 4 week therapy and the adverse drug reactions between the two drugs have been assessed.

MATERIALS AND METHODS

This study is a randomized open labeled comparative clinical study permitted by Institutional Ethical Committee. 50 patients diagnosed with GERD were included. Males and non-pregnant and non-lactating females between the ages of 18-65 years, clinically diagnosed with GERD, were included after a written informed consent was obtained from each of them. Excluded from the study were those with abnormal laboratory tests at baseline (including liver enzymes greater than twice the upper limit of normal), those who required daily use of NSAIDs oral steroids, aspirin. Patients having a history of infectious or inflammatory conditions of the intestine (including inflammatory bowel disease), malabsorption syndrome, obstruction, gastrointestinal malignancy, gastric or intestinal surgery (vagotomy), Barrett's esophagus, esophageal stricture, pyloric stenosis, and scleroderma. Patients with heart disease, coagulation disorders and thyroid disorders were also excluded from the study.



Enrolled patients were randomized (as per the table of random numbers) such that 25 patients received Dexrabeprazole 10mg OD and 25 patients received Rabeprazole 20mg OD in the morning. Subjects were not permitted to take prokinetic or H₂receptor antagonist during the study period.

All patients were asked to keep a symptom diary in which they recorded severity of symptoms (heartburn and regurgitation) on day 0, day 14 and day 28 of therapy. Frequency of symptoms was graded on a 3 point scale of 0-3 [0-absent, 1-occasional where symptoms present less than 2 days a week; 2-frequent where symptoms present 2 to 4 days a week; 3 - very frequent where symptoms present more than 4 days a week] Severity was graded on a 3-point scale of 0-3 [0 -none; no symptom, 1-mild; occasional symptoms that did not affect normal activity, 2-moderate:frequent symptoms or symptoms that affected normal activities, 3-severe; constant symptoms]. Dysphagia was scored on a scale of 0-4 [0 - normal, 1 - occasional sticking of solids, 2- swallowing semi solids and pureed foods, 3 - swallowing liquids only, 4 - absolute dysphagia] at baseline day 0 and on day 14 and on day 28 of therapy. Safety was assessed by recording side effects like nausea, malaise, headache, diarrhea and skin eruptions.

Statistical analysis

Statistical analysis of inter group data was performed using Microsoft Office Excel *Student's T* test. $p < 0.05$ was considered statistically significant. Chi-Square test was applied for qualitative analysis.

RESULTS

A total of 50 patients ($n = 25$, M:F = 20:5), mean age: 40.52 ± 10.7 years, mean weight: 65.4 ± 10.6 kg in 10mg Dexrabeprazole group; ($n = 25$, M:F = 17:8) mean age: 38.5 ± 7.4 years, mean weight: 66.3 ± 11.4 kg in 20 mg Rabeprazole group completed the study (refer table 1) There were no significant differences in the baseline characteristics of the two groups. The mean symptom reduction score (mean \pm SD) of heart burn in Dexrabeprazole reduced significantly ($P < 0.0001$) from 2.57 ± 0.53 on day 0 to 0.83 ± 0.01 on day 28 and in Rabeprazole group the mean symptom reduction score for heart burn reduced significantly ($p < 0.001$) from 2.53 ± 0.48 on day 0 to 1.04 ± 0.03 on day 28 ($p < 0.0001$).

The mean symptom reduction score (mean \pm SD) of regurgitation reduced significantly ($p < 0.0001$) from 2.85 ± 0.65 on day 0 to 0.65 ± 0.04 on day 28 in Dexrabeprazole and in Rabeprazole groups from 2.70 ± 0.52 on day 0 to 0.88 ± 0.07 on day 28 of therapy (refer-table 2)

The mean symptom reduction score for improvement in dysphagia reduced significantly ($p < 0.0001$) in Dexrabeprazole from 3.62 ± 1.24 on day 0 to 1.85 ± 1.02 on day 28 and significantly reduced in Rabeprazole from 3.54 ± 1.05 on day 0 to 2.02 ± 1.22 on day 28.

There was no significant intergroup difference in improvement of symptom scores.

Onset of symptom improvement was earlier ($P < 0.0001$) at 8.4 ± 1.57 d with Dexrabeprazole than with Rabeprazole at 12.2 ± 2.3 d. Adverse reactions of nausea and malaise were reported by 2 patients in Dexrabeprazole group and 3 patients in Rabeprazole group. Diarrhoea was reported by 1 patient in Rabeprazole group. No severe side effects were reported by the subjects participating in the present study.

Table 1: Demographic profile

Characteristics	Dexrabeprazole (n=25)	Rabeprazole (n=25)	Total (n=50)
Sex			
Male	20	17	37
Female	5	8	13
Age (years)			
Mean	40.52	38.5	79.02
S.D.	10.7	7.4	18.1
Weight (in kgs)			
Mean	65.4	66.3	131.7
S.D.	10.6	11.4	22

Table 2: Mean Symptom Reduction Scores in GERD

Symptoms	Dexrabeprazole		Rabeprazole		p-value
	Day 0	Day 28	Day 0	Day 28	
Heartburn					
Mean	2.57	0.83	2.53	1.04	<0.0001
S.D.	0.53	0.01	0.48	0.03	<0.0001
Regurgitation					
Mean	2.85	0.65	2.7	0.88	<0.0001
S.D.	0.65	0.04	0.52	0.07	<0.0001
Dysphagia					
Mean	3.62	1.85	3.54	2.02	<0.0001
S.D.	1.24	1.02	1.05	1.22	<0.0001

DISCUSSION

Gastro esophageal reflux disease (GERD) is caused by acid reflux, which can be treated by suppressing gastric acid secretion.⁹ The efficacy of antisecretory drugs in GERD depends on the potency of acid suppression¹⁰, and PPIs are considered to be the most effective drugs for GERD.¹¹ The symptoms of GERD, such as heartburn, have been demonstrated to markedly impair quality of life in these patients.¹²

Therefore, an important end point in clinical trials assessing the efficacy of treatment in GERD patients is time taken for complete relief of symptoms, especially the pivotal symptoms of heart burn and regurgitation.

In the present study, onset of action (time to the first 24-h interval free from GERD symptoms) was significantly

earlier ($P < 0.0001$) with Dexrabeprazole than with Rabepazole. Our results are in conformity with previously published study by Pai et al¹³ and pre-clinical studies¹⁴, confirming the earlier onset of symptom improvement with Dexrabeprazole at half the dose of Rabepazole, thus reducing the metabolic load on the body, and simplifying pharmacokinetics and having similar efficacy and safety.

In summary, for GERD treatment, Dexrabeprazole 10 mg is better than Rabepazole 20 mg, with regards to rapid onset of relief in symptoms like heartburn and regurgitation with no severe adverse reactions.

CONCLUSION

This study shows that in the symptomatic management of GERD, Dexrabeprazole will provide significantly better results than Rabepazole in terms of onset of symptom improvement and has similar safety and efficacy profile even when used at half the normal dose.

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Source of Support: Nil, Conflict of Interest: None.

