Proton pump inhibitors (PPIs) are widely used for the treatment of gastroesophageal reflux disease (GERD) as well as other acid-related disorders. The first PPI was launched in the U.S. market in 1989, and over the past decade the number of individual PPIs and their labeled indications have continually expanded. Omeprazole, lansoprazole, pantoprazole, rabeprazole and esomeprazole are the present PPIs that effectively suppress gastric acid secretion by blocking the gastric acid pump, H⁺/K⁺-adenosine triphosphatase (ATPase). Pump inhibition blocks acid secretion regardless of whether it originates from stimulation of muscarinic, gastrin, or histamine receptors.

**Pantoprazole Fast Release**

Pantoprazole Fast Release is available as Pepcare FR, an oral preparation containing pantoprazole 40 mg with sodium bicarbonate as buffer. The FDA-labeled indication is for the short-term treatment (up to 16 weeks) of erosive esophagitis associated with GERD. Other possible uses may include the maintenance treatment of erosive esophagitis, acute or maintenance treatment of duodenal or gastric ulcers, treatment of pathological hypersecretory conditions, and adjunct treatment with antibiotics for *Helicobacter pylori*. Pantoprazole I.V. is indicated for the short-term treatment (7 to 10 days) of GERD in patients unable to take the oral formulation.

Pantoprazole does not accumulate, and its pharmacokinetics are not altered by multiple daily dosing. No dose adjustments are recommended in geriatric patients or those with renal failure or mild to moderate hepatic failure. In patients with severe liver cirrhosis, ADVANTAGES OF SODIUM BICARBONATE BUFFER

- Although PPIs are stable at alkaline pH, they are destroyed rapidly as pH falls (e.g., by gastric acid). Therefore, if the micro-encapsulation or the enteric coating is disrupted (e.g., triturating to compound a liquid, or chewing the capsule), the dosage forms of the prior PPIs will be exposed to degradation by the gastric acid in the stomach. Hence, previously all oral PPIs were delayed-release, enteric-coated formulations designed to prevent degradation of the drug by gastric acid.

- The enteric dosage forms of the prior PPIs were employed because they were acid labile; thus, it is important that these drugs not be exposed to low pH gastric acid prior to absorption. Unfortunately, enteric coatings delay absorption and initial acid suppression.

- PEPCARE FR tablets contain sodium bicarbonate, which protects the drug from gastric acid degradation. This provides the benefits of the proton pump inhibitor without the drawbacks of the current enteric-coated solid dosage forms.

- Moreover, this built-in sodium bicarbonate buffer protects PEPCARE FR from acid degradation by raising intragastric pH. No enteric coating of capsules or powder for oral suspensions are thus required. In this form the drug is faster acting and may also be useful for patients who are unable to swallow and have nasogastric tubes in place.
the half-life is somewhat prolonged to seven to nine hours.2

PANTOPRAZOLE IN OLDER PATIENTS WITH EROSIIVE ESOPHAGITIS

The purpose of this study was to determine if adults ≥ 65 years with erosive esophagitis are more difficult to treat than younger adults. The study was a post hoc analysis of two double-blind, randomized, multicenter trials of patients with erosive esophagitis. Patients received pantoprazole 40 mg once daily, nizatidine 150 mg twice daily or placebo. Patients were evaluated for esophageal healing at 4 and 8 weeks. Patients recorded typical reflux symptoms using a daily diary to note presence or absence of symptoms.

Results showed that 44, 13 and 11 patients ≥ 65 years and 210, 69, and 71 patients <65 received pantoprazole 40 mg daily, nizatidine 150 mg twice daily, or placebo, respectively. Eighty-six percent (86%[76%, 97% CI]) of older and 83% (78%, 88% CI) of younger pantoprazole–treated patients were healed at 8 weeks; 46% (19%, 73% CI) and 35% (24%, 46% CI) of nizatidine–treated and 27% (1%, 54% CI) and 34% (23%, 45% CI) of placebo–treated were healed at 8 weeks. Median time to persistent absence of GERD–related symptoms was similar for older and younger patients treated with pantoprazole. Experts concluded that older patients with erosive esophagitis do not appear to have more difficult–to–treat disease.3 Pantoprazole which has been further enhanced with sodium bicarbonate buffer provides even better results.

EFFECTS OF DIFFERENT PPIs FOR THE TREATMENT OF ESOPHAGITIS IN THE ELDERLY

A total of 320 patients over 65 years with endoscopically diagnosed esophagitis were randomly assigned to one of the following treatments for 8 wks: (1) omeprazole 20 mg/d; (2) lansoprazole 30 mg/d; (3) pantoprazole 40 mg/d, or (4) rabeprazole 20 mg/d. Major symptoms, compliance, and adverse events were recorded. After 8 wks, endoscopy and clinical evaluation were repeated. Per protocol and intention to treat healing rates of esophagitis were: omeprazole = 81.0% and 75.0%, lansoprazole = 90.7% (P = 0.143 vs omeprazole) and 85.0%, pantoprazole = 93.5% (P = 0.04 vs omeprazole) and 90.0% (P = 0.02 vs omeprazole), rabeprazole = 94.6% (P = 0.02 vs omeprazole) and 88.8% (P = 0.04 vs omeprazole).

Dividing patients according to the grades of esophagitis, omeprazole was significantly less effective than the three other PPIs in healing grade 1 esophagitis (healing rates: 81.8% vs 100%, 100% and 100%, respectively, P = 0.012). Pantoprazole and rabeprazole (100%) were more effective vs omeprazole (89.6%, P = 0.0001) and lansoprazole (82.4%, P = 0.0001) in decreasing heartburn. Pantoprazole and rabeprazole (92.2% and 90.1%, respectively) were also more effective vs lansoprazole (75.0%, P < 0.05) in decreasing acid regurgitation. Finally, pantoprazole and rabeprazole (95.2% and 100%) were also more effective vs lansoprazole (82.6%, P < 0.05) in decreasing epigastric pain.3 Pantoprazole which has been further enhanced with sodium bicarbonate buffer provides better results.

PANTOPRAZOLE VS ESOMEPRAZOLE IN THE MAINTENANCE OF HEALED GERD – THE EMANCIPATE STUDY

In an initial open–label acute phase, outpatients with endoscopically confirmed GERD (Los Angeles grades A–D) received pantoprazole 40 mg once daily for 4 or 8 weeks. In the acute healing phase, 1452 patients were recruited to receive pantoprazole 40 mg once daily. Healing success was 91% (intent–to–treat analysis).

Those healed (defined as the absence of esophagitis, and ‘no’ or ‘mild’ heartburn and acid regurgitation) were randomized in the double–blind manner for maintenance therapy with pantoprazole 20 mg once daily or esomeprazole 20 mg once daily for 6 months.

A total of 1303 patients entered the maintenance phase of the study. Pantoprazole 20 mg once daily and esomeprazole 20 mg once daily were equally effective at maintaining patients in remission; 84 and 85% of pantoprazole and esomeprazole recipients remained in combined endoscopic and symptomatic remission at 6 months (intent–to–treat analysis). The confidence interval of the difference was (–5.7; +infinity), showing that pantoprazole is as effective as esomeprazole with a noninferiority margin of 5.8%. Combined endoscopic and symptomatic remission was independent of Helicobacter pylori status. Both treatments were well tolerated and safe.4 Pantoprazole which has been further enhanced with sodium bicarbonate buffer provides better results.

LONG–TERM MANAGEMENT OF GERD IN THE ELDERLY WITH PANTOPRAZOLE

The prevalence of GERD increases with age and elderly are more likely to develop severe disease. Older patients often complain of less severe or frequent heartburn than younger patients and they may present with atypical symptoms such as dysphagia, weight loss, or extraesophageal symptoms.

Pantoprazole is significantly effective both for acute and long–term treatment with excellent control of relapse and symptoms. It is well tolerated even for long–term therapy and its tolerability is optimal. Pantoprazole shows to have minimal interactions with other drugs because of a lower affinity for cytochrome P450 than older PPIs.5 Pantoprazole which has been further enhanced with sodium bicarbonate buffer provides better results.

PPI THERAPY IN NSAID–RELATED GASTROINTESTINAL DAMAGE

Non–steroidal anti–inflammatory drugs (NSAIDs) are associated with gastrointestinal adverse effects, ranging from dyspepsia and peptic ulcer disease to more serious complications such as hemorrhage or perforation. NSAID–induced gastrointestinal toxicity is a significant medical problem worldwide.

Misoprostol is effective in reducing NSAID–induced mucosal damage, but patient compliance is limited by poor tolerance. Histamine receptor antagonists are relatively effective against duodenal ulcers but offer no significant protection against gastric ulcers.

PPIs, such as pantoprazole have been shown to be effective in preventing the development of gastric and duodenal ulcers in high–risk patients taking NSAIDs. PPI therapy is also beneficial in

<table>
<thead>
<tr>
<th>Drug</th>
<th>Composition</th>
<th>Packing</th>
<th>Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEPCARE FR (Fast Release)</td>
<td>Pantoprazole 40 mg</td>
<td>Sodium Bicarbonate as buffer</td>
<td>10 Tablets</td>
</tr>
</tbody>
</table>

2
healing NSAID–induced ulcers and preventing their recurrence in patients requiring ongoing NSAID therapy. PPIs have an excellent safety profile, and pantoprazole with its low potential for drug–drug interactions is particularly suitable for administration to elderly patients who often require concomitant treatment with other medications. Pantoprazole which has been further enhanced with sodium bicarbonate buffer provides better results.

THREE–YEAR ORAL PANTOPRAZOLE IN ZOLLLINGER–ELLISON SYNDROME

Zollinger–Ellison syndrome and idiopathic hyper–secretion are gastrointestinal hypersecretory conditions requiring long–term maintenance. The safety and efficacy data for short–term (6–month) treatment of Zollinger–Ellison syndrome and idiopathic hyper–secretion with oral pantoprazole are well known. This study extends the initial observations to 3 years.

Twenty–four subjects completed the study. The acid output of 28 of 34 subjects was controlled at initial enrolment. The mean acid output rates were <10 mmol/h throughout the 36 months of treatment for 90–100% of the patients. The majority of the patients were controlled with twice daily doses of 40 or 80 mg pantoprazole at 36 months (acid output was controlled in 24 of 24 subjects). Maintenance oral pantoprazole therapy up to 3 years at dosages of 40–120 mg twice daily was effective and well tolerated in patients with Zollinger–Ellison syndrome and other hyper–secretory conditions.9

PANTOPRAZOLE EFFECT ON ULCERS AFTER VARICEAL BAND LIGATION

Elective esophageal variceal ligation (EVL) is performed to decrease the risk of variceal hemorrhage. Side effects of EVL include hemorrhage, chest pain, dysphagia, and odynophagia. Because gastric acid may exacerbate post banding ulcers and delay healing, proton pump inhibition may decrease side effects associated with EVL.

Experts performed a double–blinded, randomized, placebo–controlled trial of pantoprazole after elective EVL. Subjects in the pantoprazole arm received 40 mg pantoprazole intravenously after EVL followed by 40 mg oral pantoprazole for 9 days. Control subjects received intravenous and oral placebo. Subjects underwent upper endoscopy 10 to 14 days after banding. Primary outcomes included the size and number of ulcers and the subjects’ reports of dysphagia, chest pain, and heartburn.

Forty–four subjects were randomized: 42 completed the protocol. At follow–up endoscopy, the mean number of ulcers was similar in the two groups. However, the ulcers in the pantoprazole group were on average half as large as in the placebo group (37 mm² vs. 82 mm², P < .01). In conclusion, subjects receiving pantoprazole after elective EVL had significantly smaller post banding ulcers on follow–up endoscopy than subjects receiving placebo. However, the total ulcer number and patient symptoms were not different between the groups.10

REFERENCES

Presenting **FAST RELEASE** Pantoprazole

**Advantage Sodium Bicarbonate**

*Raises Gastric pH & protects Pantoprazole from Acid degradation*

...For your patient to safer & more dependable treatment while treating acid related disorder...in FAST Action

- Not exposed to gastric acid degradation
- No risk of exposure to low pH gastric acid
- Causes irreversible inhibition of proton pump
- Rapidly activated under strong acidic conditions
- Food does not affect bioavailability
- Least potential for drug interaction
- More effective than H₂RAs in preventing persistent recurrent bleeding from peptic ulcers
- Fast release for Immediate Relief

*In*
- Duodenal Ulcer
- Gastric Ulcer
- Erosive Oesophagitis
- Gastro Oesophageal Reflux Disease
- Zollinger Ellison Syndrom
- As An Adjunct to Antibiotic in the Treatment of H.pylori positive patients

FINECURE PHARMACEUTICALS LIMITED
Fax : 079-30615693 email : sales@finecurepharma.com
website : www.finecurepharma.com