

Magnesium Peprazom® Proton Pump Inhibitor

ESOMEPRAZOLE

20 mg Delayed-Release Capsule 40 mg Delayed-Release Capsule

Esomeprazole (as magnesium dihydrate). Esomeprazole (as magnesium dihydrate).

Gastroesophageal Reflux Disease (GERD)

 treatment of erosive reflux esophagitis
 long-term management of patients with healed esophagitis to prevent relapse
 symptomatic treatment of gastroesophageal reflux disease (GERD) · In combination with appropriate antibacterial therapeutic regimens for the eradication

Formulation

of Helicobacter pylori and
- healing of Helicobacter pylori associated duodenal ulcer and
- prevention Of relapse Of peptic ulcers in patients with Helicobacter pylori associated ulcers

· Patients requiring continued NSAID therapy · Healing of gastric ulcers associated with NSAID therapy

• Prolonged treatment after IV induced prevention of re-bleeding of peptic ulcers

• Treatment of Zollinger Ellison Syndrome PHARMACOLOGICAL PROPERTIES

Esomeprazole is the S-isomer of omeprazole and reduces gastric acid secretion through a specific targeted mechanism of action. It is a specific inhibitor of the acid pump in the parietal cell. Both the R and S-isomer of omeprazole have similar pharmacodynamic activity.

ATC code: A02B C05

Effect on gastric acid secretion.

After oral dosing with esomeprazole 20 mg and 40 mg the onset of effect occurs within one hour. After repeated administration with 20 mg esomeprazole once daily for five days, mean peak acid output after pentagastrin stimulation is decreased 90% when measured 6-7 hours

after dosing on day fi

After five days of oral dosing with 20 mg and 40 mg of esomeprazole, intragastric pH above 4 was maintained for a mean time of 13 hours and 17 hours, respectively over 24 hours in symptomatic GERD patients. The proportion of patients maintaining an intragastric pH above 4 to rat least 8, 12 and 16 hours respectively were for esomeprazole 20 mg 76%, 54% and 24%. Corresponding proportions for esomeprazole 40 mg were 97%, 92% and 56%.

After eradication treatment for one week there is no need for subsequent monotherapy with antisecretory drugs for effective ulcer healing and symptom resolution in uncomplicated duodenal ulcers.

Other effects related to acid inhibition
During treatment with antisecretory drugs serum gastrin increases in response to the decreased acid secretion.

In two studies with ranitidine as an active comparator, esomeprazole showed better effect in healing of gastric ulcers in patients using NSAIDs, including COX-2 selective NSAIDs. In two studies with placebo as comparator, esomeprazole showed better effect in the prevention of gastric and duodenal ulcers in patients using NSAIDs (aged >60 and/or with previous ulcer), including COX-2 selecuve NSAIDs.

Pharmacokinetic properties Absorption and distribution
Esomeprazole is acid labile and is administered orally as enteric-coated granules. In vivo conversion to the R-isomer is negligible. Absorption of esomeprazole is rapid, with peak plasma levels occurring approximately 1-2 hours after dose. The absolute bioavailability is 64% after a single dose of 40 mg and increases to 89% after repeated once-daily administration. For 20 mg esomeprazole the corresponding values are 50% and 68% respectively. The apparent volume of distribution at steady state in healthy subjects is approximately 0.22 l/kg body weight. Esomeprazole is 97% plasma protein bound.

Food intake both delays and decreases the absorption of esomeprazole although this has no significant influence on the effect of esomeprazole on intragastric acidity.

Pharmacokinetic properties

Special patient populations
Approximately 2.9±1.5% of the population lack a functional CYP2C19 enzyme and are called poor metabolisers. In these individuals the metabolism of esomeprazole is probably mainly catalysed by CYP3A4. After repeated once-daily administration of 40 mg esomeprazole, the mean area under the plasma concentration-time curve was approximately 100% higher in poor metabolisers than in subjects having a functional CYP2C19 enzyme (extensive metabolisers). Mean peak plasma concentrations were increased by about 60% These findings have no implications for the posology of esomeprazole. The metabolism of esomeprazole is not significantly changed in elderly subjects (71-80 years of age).

<u>Pediatric</u>
<u>Adolescents 12-18 years;</u>
Following repeated dose administration of 20 mg and 40 mg esomeprazole, the total exposure (AUC) and the time to reach maximum plasma drug concentration (tmax) in 12 to 18 year-old was similar to that in adults for both esomeprazole doses. Preclinical safety data
Preclinical bridging studies reveal no particular hazard for humans based on conventional studies of repeated dose toxicity, genotoxicity, and toxicity to reproduction. Carcinogenicity studies in the rat with the racemic mixture have shown gastric ECL-cell hyperplasia and carcinoids. These gastric effects in the rat are the result of sustained, pronounced hypergastrinaemia secondary to reduced production of gastric acid and are observed after long-term treatment in the rat with inhibitors of gastric acid secretion. Contraindications
Known hypersensitivity to esomeprazole, substituted benzimidazoles or any other constituents of the formulation. Esomeprazole should not be used concomitantly with nelfinavir.

When prescribing esomeprazole for eradication of *Helicobacter pylori* possible drug interactions for all components in the triple therapy should be considered. Clarithromycin is a potent inhibitor of CYP3A4 and hence contraindications and interactions for clarithromycin should be considered when the triple therapy is used in patients concurrently taking other drugs metabolised via CYP3A4 such as cisapride. This medicinal product contains sucrose. Patients with rare hereditary problems of fructose intolerance, glucose-galactose malabsorption or sucrase-isomaltase insufficiency should not take this medicine. This product contains parahydroxybenzoates, which may cause allergic reactions (possibly delayed). Treatment with proton pump inhibitors may lead to slightly increased risk of gastrointestinal infections such as Salmonella and Campylobacter.

Co-administration of esome prazole with atazanavir is not recommended. If the combination of atazanavir with a proton pump inhibitor is judged unavoidable, close clinical monitoring is recommended in combination with an increase in the dose of atazanavir to 400 mg with 100 mg of ritonavir; esome prazole 20 mg should not be

Medicinal products with pH dependent absorption
The decreased intragastric acidity during treatment with esomeprazole, might increase or decrease the absorption of drugs if the mechanism of absorption is influenced by gastric acidity. In common with the use of other inhibitors of acid secretion or antacids, the absorption of ketoconazole and itraconazole can decrease during treatment with esomeprazole.

Interaction with other medicinal products and other forms of interaction Effects of esomeprazole on the pharmacokinetics of other drugs

Drugs metabolised by CYP2C19
Esomeprazole inhibits CYP2C19, the major esomeprazole metabolising enzyme. Thus, when esomeprazole is combined with drugs metabolised by CYP2C19, such as diazepam, citalopram, imipramine, clomipramine, phenytoin etc., the plasma concentrations of these drugs may be increased and a dose reduction could be needed. This should be considered

drugs may be increased and a dose reduction could be needed. In his should be considered especially when prescribing esome-prazole for on - demand therapy. Concomitant administration of 30 mg esome-prazole resulted in a 45% decrease in clearance of the CYP2C19 substrate diazepam. Concomitant administration of 40 mg esome-prazole resulted in a 13% increase in trough plasma levels of phenytoin in epileptic patients. It is recommended to monitor the plasma concentrations of phenytoin when treatment with esome-prazole is introduced or withdrawn. Ome-prazole (40 mg once daily) increased voriconazole (a CYP2C19 substrate) Cmax and AUCr by 15% and 41%, respectively.

Concomitant administration of 40 mg esomeprazole to warfarin-treated patients in a clinical trial showed that coagulation times were within the accepted range. However, post-marketing, a few isolated cases of elevated International Normalised Ratio (INR) of clinical significance have been reported during concomitant treatment. Monitoring is recommended when initiating and ending concomitant esomeprazole treatment during treatment with warfarin or other coumarine derivatives.

In healthy volunteers, concomitant administration of 40 mg esomeprazole resulted in a 32% increase in area under the plasma concentration-time curve (AUC) and a 31% prolongation of elimination half-life (t1/2) but no significant increase in peak plasma levels of cisapride. The slightly prolonged QTc interval observed after administration of cisapride alone, was not further prolonged when cisapride was given in combination with esomeprazole.

Esomeprazole has been shown to have no clinically relevant effects on the pharmacokinetics

of amoxicillin and quinidine.

Effects on ability to drive and use machines No effects have been observed.

Adverse Effects

Renal and urinary disorders

Dosage and method of administration
The capsules should be swallowed chewed or crushed.

The granules must not be chewed or crushed

Pregnancy and lactation
For esome prazole clinical data on exposed pregnancies are insufficient. With the racemic mixture, omeprazole, data on a larger number of exposed pregnancies from epidemiological studies indicate no malformative nor foetotoxic effect. Animal studies with esome prazole do not indicate direct or indirect harmful effects with respect to embryonal/fetal development. Animal studies with the racemic mixture do not indicate direct or indirect harmful effects with It is not known whether esomeprazole is excreted in human breast milk. No studies in lactating women have been performed. Therefore, esomeprazole should not be used during breast-feeding.

Reproductive system and Very Rare Gynaeco mastia breast disorders General disorders and Rare Malaise, increased sweating Overdose
There is very limited experience to date with deliberate overdose. The symptoms described in connection with 280 mg were gastrointestinal symptoms and weakness. Single doses of 80 mg esomeprazole were uneventful. No specific antidote is known. Esomeprazole is extensively plasma protein bound and is therefore not readily dialyzable. As in any case of overdose, treatment should be symptomatic and general supportive measures should be utilized.

For patients who have difficulty in swallowing, the capsules can be opened and their content dispersed in half a glass of non-carbonated water. No other liquids should be used as the enteric coating may be dissolved. Stir and drink the liquid with the granules immediately or within 30 minutes. Rinse the glass with half a glass of water and drink.

For patients who cannot swallow, the content of the capsules can be dispersed in non-carbonated water and administered through a gastric tube. It is important that the appropriateness of the selected syringe and tube is carefully tested.

dministration through gastric tube

1. Add the contents of a capsule into approximately 25 ml or 50 ml of water (For some tubes, dispersion in 50 ml water is neeced to prevent the granules trom clogging the tube). Stir.

Interstitial nephritis

swallowed whole with liquid. The capsules should not be

Very Rare

subsequent symptom control using an on-demand regimen is not recommended. combination with appropriate antibacterial therapeutic regimens for the eradication of Helicobacter pylori and

- healing of Helicobacter pylori associated duodenal ulcer and

- prevention of relapse ot peptic ulcers in patients With Helicobacter pylori associated ulcers.

20 mg esomeprazole with 1 g amoxicillin and 500 mg clarithromycin, all twice daily for 7 days.

Patients requiring continued NSAID therapy
Healing of gastric ulcers associated with NSAID therapy: The usual dose is 20 mg one daily. The treatment duration is 4-8 weeks.

Prevention of gastric and duodenal ulcers associated with NSAID therapy in patients at risk: $20\ \text{mg}$ once daily. Prolonged treatment after IV induced prevention of re-bleeding of peptic ulcers. 40 mg once daily for 4 weeks after IV induced prevention of re-bleeding of peptic ulcers.

- Treatment of Zollinger Ellison Syndrome
 The recommended initial dosage is 40 mg twice daily. The dosage should then be individually adjusted and treatment continued as long as clinically indicated. Based on the clinical data available, the majority of patients can be controlled on doses between 80 to 160mg esomeprazole daily. With doses above 80 mg daily, the dose should be divided and given twice daily.
- Impaired hepatic function

 Dose adjustment is not required in patients with mild to moderate liver impairment. For patients with severe liver impairment, a maximum dose of 20 mg esomeprazole should
- Caution: Foods, Drugs, Devices and Cosmetics Act prohibits dispensing without prescription. For suspected adverse drug reaction, report to the FDA: www.fda.gov.ph

Availability
Alu-Alu/ blister pack x 7 capsules (box of 14 capsules) Manufactured by

· Prevention of gastric and duodenal ulcers associated with NSAID therapy, in patients at risk rapeutic group: proton pump inhibitor

<u>Site and mechanism of action</u>
Esomeprazole is a weak base and is concentrated and converted to the active form in the highly acidic environment of the secretory canaliculi of the parietal cell, where it inhibits the enzyme H+K+ - ATPase — the acid pump and inhibits both basal and stimulated acid secretion

Jsing AUC as a surrogate parameter for plasma concentration, a relationship between nhibition of acid secretion and exposure has been shown. <u>Therapeutic effects of acid inhibition</u>
Healing of reflux esophagitis with esomeprazole 40 mg occurs in approximately 78% of patients after four weeks, and in 93% after eight weeks. One week treatment with esome prazole 20 mg twice daily and appropriate antibiotics, results in successful eradication of $\it H.~pylori$ in approximately 90% of patients.

In a randomized, double blind, placebo-controlled clinical study, patients with endoscopically confirmed peptic ulcer bleeding characterized as Forrest Ia, Ib, Ila or Ilb (9%, 43%, 38% and 10% respectively) were randomized to receive esomeprazole solution for infusion (n=375) or placebo (n=389). Following endoscopic hemostasis, patients received either 80 mg esomeprazole as an intravenous infusion over 30 minutes followed by a continuous infusion of 8 mg per hour or placebo for 72 hours. After the initial 72 hour period, all patients received open-label 40 mg oral esomeprazole for 27 days for acid suppression. The occurrence of rebleeding within 3 days was 5.9% in the esomeprazole treated group compared to 10.3% for the placebo group. At 30 days post-treatment, the occurrence of rebleeding in the esomeprazole treated versus the placebo treated group 7.7% vs 13.6%.

Decreased gastric acidity due to any means including proton pump inhibitors, increases gastric counts of bacteria normally present in the gastrointestinal tract. Treatment with proton pump inhibitors may lead to slightly increased risk of gastrointestinal infections such as Salmonella and Campylobacter.

Metabolism and excretion

Esomeprazole is completely metabolised by the cytochrome P450 system (CYP). The major part of the metabolism of esomeprazole is dependent on the polymorphic CYP2C19, responsible for the formation of the hydroxy- and desmethyl metabolites of esomeprazole. The remaining part is dependent on another specific isoform, CYP3A4, responsible for the formation of esomeprazole sulphone, the main metabolite in plasma. The parameters below reflect mainly the pharmacokinetics in individuals with a functional CYP2C19 enzyme, extensive metabolisers.

Following a single dose of 40 mg esomeprazole the mean area under the plasma concentration-time curve is approximately 30% higher in females than in males. No gender difference is seen after repeated once-daily administration. These findings have no implications for the posology of esomeprazole.

Special warnings and precautions for use In the presence of any alarm symptom (e.g. significant unintentional weight loss, recurrent vomiting, dysphagia, haematemesis or melaena) and When gastric ulcer is suspected or present, malignancy should be excluded, as treatment with esomeprazole may alleviate symptoms and delay diagnosis. Patients on long-term treatment (particularly those treated for more than a year) should be kept under regular surveillance.

Omeprazole has been reported to interact with some protease inhibitors. The clinical importance and the mechanisms behind these reported interactions are not always known. Increased gastric pH during omeprazole treatment may change the absorption of the protease inhibitors. Other possible interaction mechanisms are via inhibition of CYP 2C19. For atazanavir and nelfinavir, decreased serum levels have been reported when given together with omeprazole and concomitant administration is not recommended. Co-administration of omeprazole (40 mg once daily) with atazanavir 300 mg/ritonavir 100 mg to healthy volunteers resulted in a substantial reduction in atazanavir exposure (approximately 75% decrease in AUC, Cmax and Cmin). Increasing the atazanavir dose to 400 mg did not compensate for the impact of omeprazole on atazanavir exposure. The co-administration of omeprazole (20 mg daily) with atazanavir 400 mg/ritonavir 100 mg to healthy volunteers resulted in a decrease of approximately 30% in the atazanavir exposure as compared with the exposure observed with atazanavir 300 mg/ritonavir 100 mg daily without omeprazole 20 mg daily. Co-administration of omeprazole (40 mg daily) reduced mean nelfinavir AUC, Cmax and Cmin for the pharmacologically active metabolite M8 was reduced by 75-92%. For saquinavir (with concomitant ritonavir), increased serum levels (80-100%) have been reported during concomitant omeprazole treatment (40 mg daily). Treatment with memprazole 20 mg daily had no effect on the exposure of darunavir (with concomitant ritonavir) and amprenavir (with concomitant ritonavir). Treatment with esomeprazole 20 mg daily or everyday had no effect on the exposure of opinavir (with concomitant ritonavir). Due to the similar pharmacodynamic effects and pharmacokinetic properties of omeprazole and esomeprazole, concomitant administration with esomeprazole and netazanavir is not recommended and concomitant administration with esomeprazole and netfinavir scontraindicated.

Studies evaluating concomitant administration of esomeprazole and either naproxen or rofecoxib did not identify any clinically relevant pharmacokinetic interactions during short-term studies Effects of other drugs on the pharmacokinetics of esomeprazole Esomeprazole is metabolized by CYP2C19 and CYP3A4. Concomitant administration of esomeprazole and a CYP3A4 inhibitor, clarithrcmycin (500 mg twice daily.), resulted in a doubling of the exposure (AUC) to esomeprazole. Concomitant administration of esomeprazole and a combined inhibitor of CYP2C19 and CYP3A4 may result in more than doubling of the esomeprazole exposure. The CYP2C19 and CYP3A4 inhibitor voriconazole increased omeprazole AUCr by 280%. A dose adjustment of esomeprazole is not regularly required in either of these situations. However, dose adjustment should be considered in patients with severe hepatic impairment and if long-term treatment is indicated.

Common abdominal pain, constipation, diarrhea, flatulence, nausea/vomiting Common Rare Stomatitis, gastrointestinal candidiasis Uncommon Increased liver enzymes Hepatitis with or without jaundice Hepatobiliary disorders Hepatic failure, encephalopathy in patients with pre-Uncommon Dermatitis, pruritus, rash, urticaria Alopecia, photosensitivity disorders Frvthema multiforme, Stevens-Johnson syndrome Very Rare toxic epidermal necrolysis (TEN) tissue and bone disorders Very Rare M uscular weakness

has not healed or who have persistent symptoms. - long-term management of patients with healed esophagitis to prevent relapse: 20 mg symptomatic treatment of gastroesophageal reflux disease (GERD)
20 mg once daily in patients without esophagitis. If symptom control has not been achieved after 4 weeks, the patient should be further investigated. Once symptoms have resolved, subsequent symptom control can be achieved using 20 mg once daily. In adults, an on-demand regimen taking 20 mg once daily, when needed, can be used. In NSAID treated patients at risk of developing gastric and duodenal ulcers, subsequent symptom control using a non-demand regimen is not recommended.

Impaired renal function

Dose adjustment is not required in patients with impaired renal function. Due to limited experience in patients with severe renal insufficiency, such patients should be treated with

not be exceeded. Elderly

Dose adjustment is not required in the elderly. Registration Number: 20rng (DR-XY41575); 40mg (DR-XY41574) Date of First Authorization: January 2013 (20mg & 40mg) Date of Revision: July 2017 Ethypharm Z.I. de Saint Arnoult, 28170 Châteauneuf en Thymerais, France For STADApharm, GmbH Stadastrasse 2-18 61118 Bad Vilbel, Germany Imported and Distributed by Natrapharm,Inc. The Patriot Building Km 18 West S SLEX, Sucat, Parañaque City acked by

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An increased number of ECL (Enterochromaffin-like) cells possibly related to the increased serum gastrin levels, has been observed in some patients during long term treatment with esomeprazole. During long-term treatment with antisecretory drugs gastric glandular cysts have been reported to occur at a somewhat increased frequency. These changes are a physiological consequence of pronounced inhibition of acid secretion, are benign and appear to be reversible.

Total plasma clearance is about 17 I/hour after a single dose and about 9 I/hour after repeated administration. The plasma elimination half-life is about 1.3 hours after repeated once-daily dosing. The pharmacokinetics of esomeprazole has been studied in doses up to 40 mg twice daily. The area under the plasma concentration- time curve increases with repeated administration of esomeprazole. This increase is dose-dependent and results in a more than dose proportional increase in AUC after repeated administration. This time - and dose-dependency is due to a decrease of first pass metabolism and systemic clearance probably caused by an inhibition of the CYP2C19 enzyme by esomeprazole and/or its sulphone metabolite, Esomeprazole is completely eliminated from plasma between doses with no tendency for accumulation during once-daily administration. The major metabolites of esomeprazole have no effect on gastric acid secretion. Almost 80% of an oral dose of esomeprazole is excreted as metabolites in the urine, the remainder in the faeces. Less than 1% of the parent drug is found in urine

Impaired organ function
The metabolism of esomeprazole in patients with mild to moderate liver dysfunction may be impaired. The metabolic rate is decreased in patients with severe liver dysfunction resulting in a doubling of the area under the plasma concentration-time curve of esomeprazole. Therefore, a maximum of 20 mg should not be exceeded in patients with severe dystunction. Esomeprazole or its major metabolites do not show any tendency to accumulate with once-daily dosing. No studies have been performed in patients with decreased renal function. Since the kidney is responsible for the excretion of the metabolites of esomeprazole but not for the elimination of the parent compound, the metabolism of esomeprazole is not expected to be changed in patients with impaired renal function.

Patients on on-demand treatment should be instructed to contact their physician if their symptoms change in character. When prescribing esomeprazole for on demand therapy, the implications for interactions with other pharmaceuticals, due to fluctuating plasma concentrations of esomeprazole Should be considered.

Adverse Effects
The following adverse drug reactions have been identified or suspected in the clinical trials programme for esomeprazole and post-marketing. None was found to be dose-related. The reactions are classified according to frequency (common ≥1/100 to <1/10; uncommon ≥ 1/1,000 to <1/100; rare ≥1/10,000 to <1/1,000; very rare <1/10,000). Very Rare Agranulocytosis, pancytopenia Hypersensitivity reactions e.g. fever, angioedema and Immune system disorders anaphylactic reaction/shock Peripheral oedema disorders Hyponatraemia Rare Uncommon Agitation, confusion, depression sychiatric disorders Very Rare Aggression, hallucinations Common Blurred vision Eye disorders Ear and labyrinth disorders Uncommon Vertigo Respiratory, thoracic and nediastinal disorders

tube). Stir.

2. Draw the suspension into a syringe and add approximately 5 ml of air.

3. Immediately shake the syringe for approximately 2 minutes to disperse the granules.

4. Hold the syringe with the tip up and check that the tip has not clogged.

5. Attach the syringe to the tube whilst maintaining the above position.

6. Shake the syringe and position it with the tip pointing down. Immediately inject 5-10 ml into the tube. Invert the syringe after injection and shake (the syringe must be held with the tip pointing up to avoid clogging of the tip).

7. Turn the syringe with the tip down and immediately inject another 5-10 ml into the tube. Repeat this procedure until the syringe is empty.

8. Fill the syringe with 25 ml of water and 5 ml of air and repeat step 6 if necessary to was down any sediment left in the syringe. For some tubes, 50 ml water is needed. Any unused product or waste material should be disposed of in accordance with local requirements. Special precautions for disposal No special requirements Adults and adolescents from the age of 12 years
Gastroesophagea/ Reflux Disease (GERD)
- treatment of erosive reflux esophagitis: 40 mg once daily for 4 weeks.
An additional 4 weeks treatment is recommended for patients in whom esophagitis

<u>Children below the age of 12 years</u>
Esomeprazole should not be used in children younger than 12 years since no data is available.

STORE BELOW 25°C. Store in the original package in order to protect from moisture.