

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

1.3 PRODUCT INFORMATION

1.3.1 SUMMARY OF PRODUCT CHARACTERISTICS (SMPC)

1. Name of drug product

GASTRO RESISTANT OMEPRAZOLE BP 20 MG

1.1 (Trade) name of product

PRAMOZOLE

1.2 Strength

GASTRO RESISTANT OMEPRAZOLE BP 20 MG

Each Capsule contains:

Omeprazole (as enteric coated pellets)..... 20 mg

Excipient... .. Q.S.

Approved color used in capsule shell.

1.3 Pharmaceutical Dosage Form

Capsules for oral administration

Lesanto Laboratories

BRAND NAME:	PRAMOZOLE
GENERIC NAME:	OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

2. QUALITATIVE & QUANTITATIVE COMPOSITION

2.1 Qualitative Declaration

GASTRO RESISTANT OMEPRAZOLE BP 20 MG

Each Capsule contains:

Omeprazole (as enteric coated pellets)..... 20 mg

Excipient... .. Q.S.

Approved colour used in capsule shell.

2.2 Quantitative Declaration

Batch Formula:

Batch Size: 100000 Capsules

Sr. No	Ingredients	Grade	Rationale	Label Claim	Overage s (%)	Quantit y per Unit (mg)	Quantity per Batch (Actual-Kg)
1.	Omeprazole (as enteric coated pellets)	IH	Active	20	1.25	270	27.0
2.	E.H.G. CAPSULE SIZE '2' PINK/CT UNPRINTED		Capsule Shell	-----	-----	-----	1.0 Lac

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

3. PHARMACEUTICAL DOSAGE FORM

Capsule for oral administration

4. CLINICAL PARTICULARS

4.1 Therapeutic Indications

Omeprazole Capsule is a medicine that is used for the treatment of Abdominal pain, Acidic stomach, Treatment for intractable nausea and vomiting, Gas, Treatment for symptoms associated with idiopathic or diabetic gastroparesis, Gastroesophageal reflux disease and other conditions.

The complete list of uses and indications for Omeprazole Capsule is as follows:

Abdominal pain

Acidic stomach

Treatment for intractable nausea and vomiting

Gas

Treatment for symptoms associated with idiopathic or diabetic gastroparesis

Gastroesophageal reflux disease

Heartburn

NSAID-induced ulcers

Food pipe healing

Bitter fluid into stomach

Stomach and bowel ulcers

Gastro oesophageal reflux disease

Abdominal distress

Abdominal

Stomach and intestinal ulcers

Abdominal colic

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

Belching and heavy bloating

Vomit

Heart burn

Nausea

4.2 Posology and Method of Administration

Adult- PO- 1 cap twice daily or as directed.

It is for oral administration.

4.3 Contraindications

Hypersensitivity to Omeprazole Capsule is a contraindication. In addition, Omeprazole Capsule should not be used if you have the following conditions:

- Co-administration with potent CYP3A4 inhibitors
- Concomitant use with medicines that prolong the QT interval
- Congestive heart failure
- Gastric malignancy
- Hypersensitivity
- Hypersensitivity
- Impairment renal and hepatic functions
- Lactation
- Moderate or severe hepatic impairment
- Patients with significant electrolyte disturbances
- Pregnancy
- Presence of gastrointestinal haemorrhage
- Presence of gastrointestinal mechanical obstruction or perforation

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

- Presence of prolongation of cardiac conduction intervals
- Prolactin-releasing pituitary tumour

4.4 Special Warnings and Precautions for Use

Avoid excess dosage.

In the presence of any alarm symptom (e.g. significant unintentional weight loss, recurrent vomiting, dysphagia, haematemesis or melena) and when gastric ulcer is suspected or present, malignancy should be excluded, as treatment may alleviate symptoms and delay diagnosis.

Co-administration of atazanavir with proton pump inhibitors is not recommended (see section 4.5). If the combination of atazanavir with a proton pump inhibitor is judged unavoidable, close clinical monitoring (e.g. virus load) is recommended in combination with an increase in the dose of atazanavir to 400 mg with 100 mg of ritonavir; omeprazole 20 mg should not be exceeded. Omeprazole, as all acid-blocking medicines, may reduce the absorption of vitamin B12 (cyanocobalamin) due to hypo- or achlorhydria. This should be considered in patients with reduced body stores or risk factors for reduced vitamin B12 absorption on long-term therapy. Omeprazole is a CYP2C19 inhibitor. When starting or ending treatment with omeprazole, the potential for interactions with drugs metabolised through CYP2C19 should be considered. An interaction is observed between clopidogrel and omeprazole (see section 4.5). The clinical relevance of this interaction is uncertain. As a precaution, concomitant use of omeprazole and clopidogrel should be discouraged. Some children with chronic illnesses may require long-term treatment although it is not recommended. Losec contains lactose. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactosemalabsorption should not take this medicine. Treatment with proton pump inhibitors may lead to slightly increased risk of gastrointestinal infections such as Salmonella and Campylobacter (see section 5.1). As in all long-term treatments, especially when exceeding a treatment period of 1 year, patients should be kept under regular surveillance.

4.5 Interaction with Other Drugs, Other Forms of Interactions

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

If you use other drugs or over the counter products at the same time, the effects of Omeprazole Capsule may change. This may increase your risk for side-effects or cause your drug not to work properly. Tell your doctor about all the drugs, vitamins, and herbal supplements you are using, so that you doctor can help you prevent or manage drug interactions. Omeprazole Capsule may interact with the following drugs and products:

- Amiodarone
- Amoxicillin
- Amprenavir
- Antacids
- Aprepitant
- Atazanavir
- Atropine
- Cilostazol
- Clarithromycin
- Clopidogrel
- Diazepam
- Digoxin
- Diltiazem
- Erlotinib
- Erythromycin
- Fluconazole
- Fosamprenavir
- Indinavir

Lesanto Laboratories

BRAND NAME:	PRAMOZOLE
GENERIC NAME:	OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

- Itraconazole
- Itraconazole,
- Ketoconazole
- Methotrexate
- Nefazodone
- Nelfinavir
- Other vitamin K blockers
- Phenytoin
- Posaconazole or voriconazole
- Rifampin
- Ritonavir
- Saquinavir
- Tacrolimus
- Telithromycin
- Verapamil
- Voriconazole
- Warfarin

Effects of omeprazole on the pharmacokinetics of other active substances Active substances with pH dependent absorption The decreased intragastric acidity during treatment with omeprazole might increase or decrease the absorption of active substances with a gastric pH dependent absorption. Nelfinavir, atazanavir The plasma levels of nelfinavir and atazanavir are decreased in case of co-administration with omeprazole. Concomitant administration of omeprazole with nelfinavir is contraindicated (see section 4.3). Co-administration of omeprazole (40 mg once daily) reduced mean nelvinavir exposure by ca. 40% and the mean

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

exposure of the pharmacologically active metabolite M8 was reduced by ca. 75 –90%. The interaction may also involve CYP2C19 inhibition. Concomitant administration of omeprazole with atazanavir is not recommended (see section 4.4). Concomitant administration of omeprazole (40 mg once daily) and atazanavir 300 mg/ritonavir 100 mg to healthy volunteers resulted in a 75% decrease of the atazanavir exposure. 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 once daily) with atazanavir 400 mg/ritonavir 100 mg to healthy volunteers resulted in a decrease of approximately 30% in the atazanavir exposure as compared to atazanavir 300 mg/ritonavir 100 mg once daily. Digoxin Concomitant treatment with omeprazole (20 mg daily) and digoxin in healthy subjects increased the bioavailability of digoxin by 10%. Digoxin toxicity has been rarely reported. However caution should be exercised when omeprazole is given at high doses in elderly patients. Therapeutic drug monitoring of digoxin should be then be reinforced.

Clopidogrel In a crossover clinical study, clopidogrel (300 mg loading dose followed by 75 mg/day) alone and with omeprazole (80 mg at the same time as clopidogrel) were administered for 5 days. The exposure to the active metabolite of clopidogrel was decreased by 46% (Day 1) and 42% (Day 5) when clopidogrel and omeprazole were administered together. Mean inhibition of platelet aggregation (IPA) was diminished by 47% (24 hours) and 30% (Day 5) when clopidogrel and omeprazole were administered together. In another study it was shown that administering clopidogrel and omeprazole at different times did not prevent their interaction that is likely to be driven by the inhibitory effect of omeprazole on CYP2C19. Inconsistent data on the clinical implications of this PK/PD interaction in terms of major cardiovascular events have been reported from observational and clinical studies. Other active substances The absorption of posaconazole, erlotinib, ketoconazol and itraconazol is significantly reduced and thus clinical efficacy may be impaired. For posaconazol and erlotinib concomitant use should be avoided. Active substances metabolised by CYP2C19 Omeprazole is a moderate inhibitor of CYP2C19, the major omeprazole metabolising enzyme. Thus, the metabolism of concomitant active substances also metabolised by CYP2C19, may be decreased and the systemic exposure to these substances increased. Examples of such drugs are R-warfarin and other vitamin K antagonists, cilostazol, diazepam

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

and phenytoin. Cilostazol Omeprazole, given in doses of 40 mg to healthy subjects in a cross-over study, increased C_{max} and AUC for cilostazol by 18% and 26% respectively, and one of its active metabolites by 29% and 69% respectively. Phenytoin Monitoring phenytoin plasma concentration is recommended during the first two weeks after initiating omeprazole treatment and, if a phenytoin dose adjustment is made, monitoring and a further dose adjustment should occur upon ending omeprazole treatment. Unknown mechanism Saquinavir Concomitant administration of omeprazole with saquinavir/ritonavir resulted in increased plasma levels up to approximately 70% for saquinavir associated with good tolerability in HIV-infected patients. Tacrolimus Concomitant administration of omeprazole has been reported to increase the serum levels of tacrolimus. A reinforced monitoring of tacrolimus concentrations as well as renal function (creatinine clearance) should be performed, and dosage of tacrolimus adjusted if needed. Effects of other active substances on the pharmacokinetics of omeprazole Inhibitors CYP2C19 and/or CYP3A4 Since omeprazole is metabolised by CYP2C19 and CYP3A4, active substances known to inhibit CYP2C19 or CYP3A4 (such as clarithromycin and voriconazole) may lead to increased omeprazole serum levels by decreasing omeprazole's rate of metabolism. Concomitant voriconazole treatment resulted in more than doubling of the omeprazole exposure. As high doses of omeprazole have been well-tolerated adjustment of the omeprazole dose is not generally required. However, dose adjustment should be considered in patients with severe hepatic impairment and if long-term treatment is indicated.

Inducers of CYP2C19 and/or CYP3A4 Active substances known to induce CYP2C19 or CYP3A4 or both (such as rifampicin and St John's wort) may lead to decreased omeprazole serum levels by increasing omeprazole's rate of metabolism.

4.6 Fertility, pregnancy and lactation

Results from three prospective epidemiological studies (more than 1000 exposed outcomes) indicate no adverse effects of omeprazole on pregnancy or on the health of the foetus/newborn child. Omeprazole can be used during pregnancy. Omeprazole is excreted in breast milk but is not likely to influence the child when therapeutic doses are used.

4.7 Effects on ability to drive and operate machine

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

Losec is not likely to affect the ability to drive or use machines. Adverse drug reactions such as dizziness and visual disturbances may occur (see section 4.8). If affected, patients should not drive or operate machinery.

4.8 Undesirable effects

The most commonly reported side-effects of Omeprazole Capsule are constipation, exhaustion, breast pain, pain in a joint, galactorrhoea, and headache.

The following is a list of possible side effects that may occur from the use of Omeprazole Capsule. This is not a comprehensive list. These side-effects are possible, but do not always occur. Some of the side-effects may be rare but serious. Consult your doctor if you observe any of the following side-effects, especially if they do not go away.

Constipation

Exhaustion

Breast pain

Pain in a joint

Galactorrhoea

Headache

Hypersensitivity reactions

Warmth

Sensation of whirling and loss of balance

Deficiency of vitamin b12

Nausea

Feeling of discomfort

Fracture of the hip, wrist or spine

Increased liver enzymes

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

Abdominal pain

Vomiting

Itching

Diarrhea

Rashes due to allergy

Redness

Sleepiness or inability to sleep

Gas

Pain

Swelling of skin

Tingling of the skin

Swelling in the hands or legs

Diarrhoea

Accumulation of gas in the alimentary canal

Pain in a muscle or group of muscles

Allergic rejection to an antigen

Somnolence

Akathisia

Rash

Pruritus

Breast enlargement

Breast tenderness

Lesanto Laboratories

BRAND NAME:	PRAMOZOLE
GENERIC NAME:	OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

Amenorrhoea

Menstruation irregular

Lactation disorder

Asthenia

Omeprazole Capsule may also cause side-effects not listed here.

The most common side effects (1-10% of patients) are headache, abdominal pain, constipation, diarrhoea, flatulence and nausea/vomiting. The following adverse drug reactions have been identified or suspected in the clinical trials programme for omeprazole and post-marketing. None was found to be dose-related. Adverse reactions listed below are classified according to frequency and System Organ Class (SOC). Frequency categories are defined according to the following convention: Very common ($\geq 1/10$), Common ($\geq 1/100$ to $< 1/10$), Uncommon ($\geq 1/1,000$ to $< 1/100$), Rare ($\geq 1/10,000$ to $< 1/1,000$), Very rare ($< 1/10,000$), Not known (cannot be estimated from the available data).

SOC/frequency	Adverse reaction
Blood and lymphatic system disorders	
Rare:	Leukopenia, thrombocytopenia
Very rare:	Agranulocytosis, pancytopenia
Immune system disorders	
Rare:	Hypersensitivity reactions e.g. fever, angioedema and anaphylactic reaction/shock
Metabolism and nutrition disorders	
Rare:	Hyponatraemia
Very rare:	Hypomagnesaemia
Psychiatric disorders	
Uncommon:	Insomnia
Rare:	Agitation, confusion, depression
Very rare:	Aggression, hallucinations
Nervous system disorders	
Common:	Headache
Uncommon:	Dizziness, paraesthesia, somnolence
Rare:	Taste disturbance
Eye disorders	
Rare:	Blurred vision
Ear and labyrinth disorders	

Lesanto Laboratories

BRAND NAME:	PRAMOZOLE
GENERIC NAME:	OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

Lesanto Laboratories

BRAND NAME:	PRAMOZOLE
GENERIC NAME:	OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

Uncommon:	Vertigo
Respiratory, thoracic and mediastinal disorders	
Rare:	Bronchospasm
Gastrointestinal disorders	
Common:	Abdominal pain, constipation, diarrhoea, flatulence, nausea/vomiting
Rare:	Dry mouth, stomatitis, gastrointestinal candidiasis
Hepatobiliary disorders	
Uncommon:	Increased liver enzymes
Rare:	Hepatitis with or without jaundice
Very rare:	Hepatic failure, encephalopathy in patients with pre-existing liver disease
Skin and subcutaneous tissue disorders	
Uncommon:	Dermatitis, pruritus, rash, urticaria
Rare:	Alopecia, photosensitivity
Very rare:	Erythema multiforme, Stevens-Johnson syndrome, toxic epidermal necrolysis (TEN)
Musculoskeletal and connective tissue disorders	
Rare:	Arthralgia, myalgia
Very rare:	Muscular weakness
Renal and urinary disorders	
Rare:	Interstitial nephritis
Reproductive system and breast disorders	
Very rare:	Gynaecomastia
General disorders and administration site conditions	
Uncommon:	Malaise, peripheral oedema
Rare:	Increased sweating

Paediatric population

The safety of omeprazole has been assessed in a total of 310 children aged 0 to 16 years with acid-related disease. There are limited long term safety data from 46 children who received maintenance therapy of omeprazole during a clinical study for severe erosive esophagitis for up to 749 days. The adverse event profile was generally the same as for adults in short- as well as in long-term treatment. There are no long term data regarding the effects of omeprazole treatment on puberty and growth.

4.9 Overdoses

There is limited information available on the effects of overdoses of omeprazole in humans. In the literature, doses of up to 560 mg have been described, and occasional reports have been

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

received when single oral doses have reached up to 2,400 mg omeprazole (120 times the usual recommended clinical dose). Nausea, vomiting, dizziness, abdominal pain, diarrhoea and headache have been reported. Also apathy, depression and confusion have been described in single cases.

The symptoms described have been transient, and no serious outcome has been reported. The rate of elimination was unchanged (first order kinetics) with increased doses. Treatment, if needed, is symptomatic.

5. Pharmacological properties

5.1 Pharmacokinetic property

Absorption Omeprazole and omeprazole magnesium are acid labile and are therefore administered orally as enteric-coated granules in capsules or tablets. Absorption of omeprazole is rapid, with peak plasma levels occurring approximately 1-2 hours after dose. Absorption of omeprazole takes place in the small intestine and is usually completed within 3-6 hours. Concomitant intake of food has no influence on the bioavailability. The systemic availability (bioavailability) from a single oral dose of omeprazole is approximately 40%. After repeated once-daily administration, the bioavailability increases to about 60%.

Distribution

The apparent volume of distribution in healthy subjects is approximately 0.3 l/kg body weight. Omeprazole is 97% plasma protein bound.

Metabolism Omeprazole is completely metabolised by the cytochrome P450 system (CYP). The major part of its metabolism is dependent on the polymorphically expressed CYP2C19, responsible for the formation of hydroxyomeprazole, the major metabolite in plasma. The remaining part is dependent on another specific isoform, CYP3A4, responsible for the formation of omeprazole sulphone. As a consequence of high affinity of omeprazole to CYP2C19, there is a potential for competitive inhibition and metabolic drug-drug interactions with other substrates for CYP2C19. However, due to low affinity to CYP3A4, omeprazole has no potential to inhibit the metabolism of other CYP3A4 substrates. In addition, omeprazole lacks an inhibitory effect on the main CYP enzymes.

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

Approximately 3% of the Caucasian population and 15-20% of Asian populations lack a functional CYP2C19 enzyme and are called poor metabolisers. In such individuals the metabolism of omeprazole is probably mainly catalysed by CYP3A4. After repeated once-daily administration of 20 mg omeprazole, the mean AUC was 5 to 10 times higher in poor metabolisers than in subjects having a functional CYP2C19 enzyme (extensive metabolisers). Mean peak plasma concentrations were also higher, by 3 to 5 times. These findings have no implications for the posology of omeprazole.

Excretion

The plasma elimination half-life of omeprazole is usually shorter than one hour both after single and repeated oral once-daily dosing. Omeprazole is completely eliminated from plasma between doses with no tendency for accumulation during once-daily administration. Almost 80% of an oral dose of omeprazole is excreted as metabolites in the urine, the remainder in the faeces, primarily originating from bile secretion.

The AUC of omeprazole increases with repeated administration. This increase is dose-dependent and results in a non-linear dose-AUC relationship 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 omeprazole and/or its metabolites (e.g. the sulphone).

No metabolite has been found to have any effect on gastric acid secretion.

Special populations

Impaired hepatic function

The metabolism of omeprazole in patients with liver dysfunction is impaired, resulting in an increased AUC. Omeprazole has not shown any tendency to accumulate with once daily dosing.

Impaired renal function

The pharmacokinetics of omeprazole, including systemic bioavailability and elimination rate, are unchanged in patients with reduced renal function.

Elderly

Lesanto Laboratories

BRAND NAME:	PRAMOZOLE
GENERIC NAME:	OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

The metabolism rate of omeprazole is somewhat reduced in elderly subjects (75-79 years of age).

Paediatric patients

During treatment with the recommended doses to children from the age of 1 year, similar plasma concentrations were obtained as compared to adults. In children younger than 6 months, clearance of omeprazole is low due to low capacity to metabolise omeprazole.

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

5.2 Pharmacodynamic properties

Mechanism of action

Omeprazole, a racemic mixture of two enantiomers reduces gastric acid secretion through a highly targeted mechanism of action. It is a specific inhibitor of the acid pump in the parietal cell. It is rapidly acting and provides control through reversible inhibition of gastric acid secretion with once daily dosing.

Omeprazole is a weak base and is concentrated and converted to the active form in the highly acidic environment of the intracellular canaliculi within the parietal cell, where it inhibits the enzyme $H^+ K^+ \text{-ATPase}$ - the acid pump. This effect on the final step of the gastric acid formation process is dose-dependent and provides for highly effective inhibition of both basal acid secretion and stimulated acid secretion, irrespective of stimulus.

Pharmacodynamic effects

All pharmacodynamic effects observed can be explained by the effect of omeprazole on acid secretion.

Effect on gastric acid secretion Oral dosing with omeprazole once daily provides for rapid and effective inhibition of daytime and night-time gastric acid secretion with maximum effect being achieved within 4 days of treatment. With omeprazole 20 mg, a mean decrease of at least 80% in 24-hour intragastric acidity is then maintained in duodenal ulcer patients, with the mean decrease in peak acid output after pentagastrin stimulation being about 70% 24 hours after dosing.

Oral dosing with omeprazole 20 mg maintains an intragastric pH of ≥ 3 for a mean time of 17 hours of the 24-hour period in duodenal ulcer patients.

As a consequence of reduced acid secretion and intragastric acidity, omeprazole dose-dependently reduces/normalizes acid exposure of the esophagus in patients with gastro-esophageal reflux disease.

The inhibition of acid secretion is related to the area under the plasma concentration-time curve (AUC) of omeprazole and not to the actual plasma concentration at a given time.

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

No tachyphylaxis has been observed during treatment with omeprazole.

Effect on H. pylori H. pylori is associated with peptic ulcer disease, including duodenal and gastric ulcer disease. H. pylori is a major factor in the development of gastritis. H. pylori together with gastric acid are major factors in the development of peptic ulcer disease. H. pylori is a major factor in the development of atrophic gastritis which is associated with an increased risk of developing gastric cancer.

Eradication of H. pylori with omeprazole and antimicrobials is associated with, high rates of healing and long-term remission of peptic ulcers.

Dual therapies have been tested and found to be less effective than triple therapies. They could, however, be considered in cases where known hypersensitivity precludes use of any triple combination.

Other effects related to acid inhibition During long-term treatment gastric glandular cysts have been reported in a somewhat increased frequency. These changes are a physiological consequence of pronounced inhibition of acid secretion, are benign and appear to be reversible.

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

Paediatric use

In a non-controlled study in children (1 to 16 years of age) with severe reflux esophagitis, omeprazole at doses of 0.7 to 1.4 mg/kg improved esophagitis level in 90% of the cases and significantly reduced reflux symptoms. In a single-blind study, children aged 0–24 months with clinically diagnosed gastro-esophageal reflux disease were treated with 0.5, 1.0 or 1.5 mg omeprazole/kg. The frequency of vomiting/regurgitation episodes decreased by 50% after 8 weeks of treatment irrespective of the dose.

Eradication of H. pylori in children

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

A randomised, double blind clinical study (Héliot study) concluded that omeprazole in combination with two antibiotics (amoxicillin and clarithromycin), was safe and effective in the treatment of H. pylori infection in children age 4 years old and above with gastritis: H. pylori eradication rate: 74.2% (23/31 patients) with omeprazole + amoxicillin + clarithromycin versus 9.4% (3/32 patients) with amoxicillin + clarithromycin. However, there was no evidence of any clinical benefit with respect to dyspeptic symptoms. This study does not support any information for children aged less than 4 years.

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5.3 Pre-clinical safety data

Gastric ECL-cell hyperplasia and carcinoids have been observed in life-long studies in rats treated with omeprazole. These changes are the result of sustained hypergastrinaemia secondary to acid inhibition. Similar findings have been made after treatment with H₂-receptor antagonists, proton pump inhibitors and after partial fundectomy. Thus, these changes are not from a direct effect of any individual active substance.

Lesanto Laboratories

BRAND NAME:

PRAMOZOLE

GENERIC NAME:

OMEPRAZOLE BP 20 MG

MODULE 1 APPLICATION INFORMATION

6. Pharmaceutical particulars

6.1 List of excipients

Not Applicable

6.2 Incompatibilities

Not Applicable

6.3 Shelf-Life

36 months from the date of manufacture.

6.3 Special Precautions for Storage

Do not store above 25°C. Blister: Store in the original package in order to protect from moisture.

6.4 Nature and Contents of Container

Alu-Alu Blister with 10' Capsules of GASTRO RESISTANT OMEPRAZOLE BP 20 MG

7. Marketing authorisation holder

Lesanto Laboratories

Plot No, 9,10,11&20

Survey no. 53 ,Manor Rpad,

Palghar - 401404

Maharashtra, India

8. Marketing authorisation number(s)

9. Date of first authorisation/renewal of the authorisation

10. Date of revision of the text