1. NAME OF THE MEDICINAL PRODUCT

Meprasil Injection Omeprazole 40mg for Injection

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

In terms of the active substance(s)

Sterile Lyophilized Powder/Cake for Injection - 10 mL Lyo Vial

Each Lyo Vial contains 40 mg of Omeprazole

INN : Omeprazole Sodium BP

Chemical name : 5-methoxy-2-[(RS)-{(4-methoxy-3,5-dimethyl – 2- pyridinyl) methyl]sulphinyl]-1H-benzimidazole Sodium monohydrate

Quantitative Declaration (Qualitative and Quantitative formula for unit)

Component	Reference to Quality Standard	Function	Theoretical Amount Per Unit
Omeprazole Sodium equivalent to Omeprazole	BP	Active Ingredient	40 mg
Di Sodium Hydrogen Phosphate	USP	Buffering Agent	10.0 mg
Sodium Hydroxide	USP-NF	pH Adjuster	q.s. to adjust pH
Water for Injection	USP	Solvent	q.s. to 2 mL

3. PHARMACEUTICAL FORM

Sterile Lyophilized Powder/Cake for Injection

4. Clinical particulars

4.1 Therapeutic indications

Omeprazole for Injection is gastric acid secretion inhibitor otherwise known as Proton Pump Inhibitor. It is indicated for stress ulceration, management of bleeding peptic ulcers. Protection against acid aspiration, Zollinger-Ellison syndrome, Gastroesophageal reflux disease in patients with esophagitis, severe erosive esophagitis. Also in treatment of duodenal ulcer, gastric ulcer and other acid related diseases where oral therapy is inappropriate.

4.2 Posology and method of administration

Posology

- Patients who cannot take oral medication may be treated parenterally with 20-40 mg once daily.

- Patients with Zollinger-Ellison syndrome, the recommended initial dose of Omeprazole given intravenously is 60 mg daily.

- Patients with gastric ulcer, duodenal ulcer and reflux oesophagitis should be treated with 40 mg once daily.
- Patients treated symptomatically for reflux disease should be treated with 20 mg once daily.
- Protection against stress ulceration: Omeprazole 80 mg by slow I.V. injection start, then 40 mg slow I.V. injection twice daily.
- Management of bleeding peptic ulcers: Omeprazole 40 mg by slow I.V. injection start, then 40 mg by slow I.V. injection twice daily.
- Protection against acid aspiration: Omeprazole 40 mg by slow I.V. injection 45-60 minutes pre-induction of anaesthesia.

N.B: When doses exceed 60 daily, the dose should be divided and given twice daily. Omeprazole solution for Injection is obtained by dissolving the lyophilized substance in the accompanying solvent. No other solvent should be used. The stability of Omeprazole is influenced by the pH of the solution for injection, which is why no other solvents or quantities should be used for dilution. Use only clear, colorless or pale-yellow solutions. Do not use if any particles are present in the reconstituted solution. The reconstituted solution is for single use only.

Method of administration

Preparation

NOTE: Steps 1 to 5 must be performed in immediate sequence:

1. With a syringe draw all of the solvent from the Ampoule (10 mL).

2. Add approximately 5 mL of the solvent to the vial with lyophilized Omeprazole.

3. Withdraw as much air as possible from the vial back into the syringe. This will make it easier to add the remaining solvent.
4. Add the remaining solvent into the vial, make sure the syringe is empty.

5. Rotate and shake the vial to ensure all the lyophilized Omeprazole has dissolved.

Omeprazole solution for injection must be given only as an Intravenous Injection and it must not be added to infusion solutions. After reconstitution the injection should be given slowly over a period of at least 2.5 minutes at a maximum rate of 4 mL per minute.

4.3 Contraindications

Known hypersensitivity to the active ingredient or any of the excipient. Omeprazole should not be used concomitantly with nelfinavir.

4.4 Special warnings and precautions for use

In patients with peptic ulcer disease - *Helicobacter pylori*-status should be determined if relevant. In patients who are shown to be *Helicobacter pylori*-positive, the elimination of the bacterium by eradication therapy should be aimed wherever possible.

In the presence of any alarm symptoms (e.g., significant unintentional weight loss, recurrent vomiting, dysphagia haematemesis or melaena) and when gastric ulcer is suspected, the possibility of malignancy must be excluded before treatment with omeprazole is instituted, as treatment may alleviate symptoms and delay diagnosis.

The diagnosis of reflux oesophagitis should be confirmed endoscopically.

Decreased gastric acidity, due to any means – including proton-pump inhibitors – increases gastric counts of bacteria normally present in the gastro-intestinal tract. Treatment with acid- reducing medicinal products leads to a slightly increased risk of gastrointestinal infections, such as Salmonella and Campylobacter.
In patients with severe impaired hepatic function, liver enzyme values should be checked periodically during treatment with omeprazole.
During combination treatment caution should also be exercised in patients with severe renal and hepatic dysfunction.
Blindness and deafness have been reported in the use of the injection form of omeprazole; therefore, in severely ill patients the monitoring of visual and auditory senses is recommended.

This medicinal product is essentially 'sodium- free'. The total amount of sodium (Na^+) in the reconstituted solution is less than 1 mmol (23 mg) per 40 mg dose.

4.5 Interaction with other medicinal products and other forms of interaction

Omeprazole injection decreases the absorption of ketoconazole and itraconazole and other acid secretion inhibitors and antacids. This could be due to the decrease intragastric acidity. Decrease anti platelet activity of clopidogrel has been reported on co administration with omeprazole. It can prolong the diazepam, warfarin and phenytoin and other drugs that are metabolized by oxidation in liver. Dose reduction may be necessary

4.6 Pregnancy and Lactation

Animal studies have revealed no teratogenic effect, but reproduction studies have revealed reduce litter weights. Avoid in pregnancy unless there is no safer alternative.
Breast feeding should be discontinued if the use of Omeprazole is considered essential.

4.7 Effects on ability to drive and use machines

No Studies on the ability to drive and use m achines have been perform ed. However apart from side effects affecting the CNS or visual abilities, no effects on the ability to drive and expected from the intake of Omeprazole.

4.8 Undesirable effects

Headache gastrointestinal disorder such as diarrhoea, constipation, abdominal pain, nausea, vomiting and flatulence.

4.9 Overdose

Intravenous single doses up to 80 mg and daily intravenous doses up to 200 mg or 520 mg in 3 days have been tolerated without undesirable effects.

Signs and symptoms

In cases of overdose, slight tachycardia, somnolence and headache are the most occurring effects.

Treatment

Treatment if necessary is symptomatic.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamics properties

Pharmacotherapeutic group

Omeprazole for Injection used as Proton Pump Inhibitors

Mechanism of action and Pharmacodynamic effects:

Omeprazole, a proton pump inhibitor (PPI) inhibits H^+/K^+ ATPase of the gastric proton pump. This effect on the final step of the gastric formation process is dose-dependent and provide for the highly effective inhibition of both basal acid secretion and stimulated acid secretion, irrespective of the stimulus.

Having a pKa of about 4.0. It selectively accumulates in acid spaces of pH <4.0. This level of acidity is achieved only in the secretory canaliculus of the parietal cell when the cell is secreting acid. After accumulation in this acid s pace, acid activation converts Omeprazole to cationic sulphenamide which then binds covalently to cysteine on the luminal face of the gastric H^+/K^+ ATPase thereby inhibiting the gastric pump

5.2 Pharmacokinetic properties

The apparent volume of distribution in heal thy subjects is approximately 0.3 L/Kg and similar value are also seen in patients with renal insufficient. Omeprazole is metabolised by the cytochrome P450 system, mainly by isoenzyme CYP2C19, and to

a smaller extent by CYP3A4. The volume distribution is slightly decreased in elderly patients with hepatic insufficiency. Plasma protein binding is about 95%. It is completely metabolized in the liver and almost 80 % is excreted as metabolites in the urine.

5.3 Preclinical safety data

Non-clinical data reveal no special hazard for humans based on conventional studies of safety pharmacology, repeated dose toxicity, genotoxicity, and toxicity to reproduction.

Gastric ECL-cell hyperplasia and carcinoids have been observed in life- long studies in rats treated with omeprazole or subjected to partial fundectomy. These changes are the result of sustained hypergastrinaemia secondary to acid inhibition.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Dibasic Sodium Phosphate Anhydrous USP
Sodium Hydroxide USP-NF
Water for Injection USP

6.2 Incompatibilities

Omeprazole Powder f or Solution f or Injection must not be mixed with other medicinal products, except the solvent for Injection One vial with powder for solution for injection should be mixed with one ampoule containing 10 mL of the solvent for solution for injection. A clear solution should be obtained. Omeprazole powder for injection should only be dissolved with the solvent for injection provided. No other solvents for intravenous injection should be used.

Do not use if any particles are present in the reconstituted solution. The reconstituted solution is for single use only.

Any unused product or waste material should be disposed of in accordance with local requirements.

The reconstituted product must not mix with other medicinal products.

6.3 Shelf life

Shelf life in the medicinal product as packaged for sale: 24 months
Shelf life after reconstitution according to directions: 4 hr
Shelf life after first opening the container: Not applicable

6.4 Special precautions for storage

Omeprazole for Injection should be Stored below 30□C.

6.5 Nature and contents of container

10 mL USP type I Amber Glass Lyo Vial contains 40 mg of Omeprazole.

6.6 Special precautions for disposal and other handling

Omeprazole for Injection is a Prescription only Medicine. Omeprazole solution for Injection is obtained by dissolving the lyophilized substance in the accompanying solvent. No other solvent should be used. The stability of Omeprazole is influenced by the pH of the solution for injection, which is why no other solvents or quantities should be used for dilution. Use only clear, colourless or pale-yellow solutions. Do not use if any particle is present in the reconstituted solution. The reconstituted solution is for single use only.

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7. MANUFACTURER/APPLICANT

MANUFACTURER

GLAND PHARMA LIMITED
D.P. Pally, Dundigal Post
Hyderabad – 500 043,
India

APPLICANT

Fidson Healthcare Plc,
268, Ikorodu Road, Obanikoro,
Lagos-Nigeria