

Some of PPIs are shown in table (2) .

Table 2 : Some of Common PPIs

| PPIs | Omeprazole | Lansoprazole | Pantoprazole | Rabeprazole | Esomeprazole |
|---------------------------------|---|--|--|---|---|
| Chemical Name | C ₁₇ H ₁₉ N ₃ O ₃ S | C ₁₆ H ₁₄ F ₃ N ₃ OS | C ₁₆ H ₁₄ F ₂ N ₃ NaO ₄ S | C ₁₈ H ₂₀ N ₃ NaO ₃ S | C ₁₇ H ₁₉ N ₃ O ₃ S |
| Molecular weight | 345.4 | 369.363 | 383.371 | 359.444 | 345.417 |
| Bioavailability | 30–40% | >80% | 77% | 52% | 50–90% |
| Metabolism | Hepatic (CYP2C19) | Hepatic (CYP2C19, CYP3A4) | Hepatic (CYP2C19, CYP3A4) | Hepatic (CYP2C19, CYP3A4) | Hepatic (CYP2C19, CYP3A4) |
| Elimination Half-life | 1 – 1.2 hours | 1 – 1.5 hours | 1 hour | 1 – 1.5 hours | 1–1.5 hours |
| Tmax | 0.5-3.5 | 1.7 | 2.5 | 2-5 | 0.5-3.5 |
| Excretion | 80% Renal 20% Faecal | Renal 33% Biliary/feces- 66% | Renal 71% Feces 18% | Renal 90% Feces 10% | 80% Renal 20% Faecal |
| Proprietary Name | PRILOSEC | PREVACID | PROTONIX | ACIPHEX | NEXIUM |
| Year of Approval (USFDA) | Jan 15, 1998 | May 10, 1995 | Feb 2000 | Aug 19, 1999 | Feb 20, 2001 |
| Route of Administration | Oral, IV | Oral, IV | Oral, IV | Oral | Oral, IV |

1.2 Esomeprazole

1.2.1 Pharmacology of Esomeprazole

Esomeprazole is a proton pump inhibitor that suppresses gastric acid secretion by specific inhibition of the H⁺/K⁺ ATPase in the gastric parietal cell. By acting specifically on the proton pump, esomeprazole blocks the final step in acid production, thus reducing gastric acidity (Scott LJ *et al.*, 2002).