Editorial

"Potassium Competitive Acid Blocker"- new Weapon to Combat Acid Peptic Disorders

Control of acid secretion in Peptic Ulcer Disease (PUD) and Gastro Esophageal Reflux Disease (GERD) is a concern for all physicians in daily practice. Since development of proton pump inhibitor (PPI), omeprazole in 1979[1], many new molecules of PPI has emerged and were being used to control acid secretion from stomach.

After a long period of about 35 years, in February 2015, a new molecule vonoprazan, potassium competitive acid blocker (PCAB) was first marketed in Japan for the treatment of acid related disorders and *Helicobacter pylori (H. pylori)* eradication[2]. In May 2022, the FDA has approved the use of vonoprazan in combination with amoxicillin and clarithromycin for the treatment of H. pylori infection[3]. It has recently been marketed in our country few weeks back.

Mechanisms of PPI and vonoprazan action are completely different. Vonoprazan competes with potassium ions for the reversible inhibition of H^+K^+-ATPase, whereas PPIs act by binding covalently to the gastric H^+K^+-ATPase via disulfide bonds[4]. The inhibitory effect of vonoprazan on H^+K^+-ATPase is approximately 350 times greater than that of lansoprazole[2].

Vonoprazan is administered orally at 20 mg once daily for the treatment of peptic ulcer, at 20 and 10 mg once daily for the treatment and secondary prevention of reflux esophagitis, respectively, at 10 mg once daily for the secondary prevention of low dose aspirin or non steroidal anti inflammatory drug induced peptic ulcer, and at 20 mg twice daily in combination with clarithromycin and amoxicillin for the eradication of *H. pylori*[2].

The healing rate of GERD and gastric ulcers by vonoprazan is more than 95 and 90%, respectively; also, it is effective in curing PPI-resistant GERD. It increases *H. pylori* eradication rate to more than 88% as part of both first line and second line therapy. It is also effective in the eradication of clarithromycin resistant *H. pylori strains*[5].

Vonoprazan based regimen for *H. pylori* was efficacious and safe for adolescents, as in adults, for both primary and secondary eradication therapies[6].

In pregnancy, animal study shows delayed fetal ossification was found as evidence of embryo fetal growth retardation, at very high dose (12 mg/kg)[7].

So, new molecule potassium competitive acid blocker (vonoprazan), can be another effective tool to combat acid peptic disorder.

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