

# The Role of Potassium Competitive Acid Blocker for *H. pylori* Eradication

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*H. pylori* chronic infection can cause chronic gastritis and atrophic gastritis that leads to adenocarcinoma of gaster. Eradication of *H. pylori* has shown to decrease the risk of gastric cancer. An integral part of *H. pylori* eradication is acid blocker. The addition of proton pump inhibitor (PPI) has proven significantly increase the eradication rate. Combination of acid suppression and antibiotics is currently the standard treatment for *H. pylori* eradication. Acid blocker has been proved to decrease urease activity, increased stability and effectivity of antibiotics.

The decreasing rate of eradication in some areas in Japan led to many trials try to make higher eradication rate by changing the antibiotic regimen until recently some report focused on higher acid blocker capacity drug. Pioneer studies come from Japan in 2014 with the invention of new acid blocker Vonoprazan.<sup>1</sup>

Vonoprazan is a potassium competitive acid blocker (PCAB). PCAB is more potent acid suppressive agent compare to conventional PPI. PCAB also has the benefit of rapid and more sustained acid inhibitory effect. This unique properties of vonoprazan should provide greater efficacy in *H. pylori* infection.

Kajihara study shows eradication rate using vonoprazan more than 95%. Previous studies in Japan show the rate of eradication using vonoprazan cased therapy range from 87-92 % higher compare to PPI based regimens (66-75%).<sup>2,3,4,5,6</sup> These studies have shown increase in *H. pylori* eradication rate with vonoprazan even with standard antibiotics regimens hypothetically caused by better acid control. Study by Kajihara show no different in efficacy between male and female, although female experienced more adverse events.<sup>6</sup>

Vonoprazan based therapy efficacy needs to be studied more in other region outside Japan to prove its superiority compare to conventional PPI and to evaluate the adverse events.

## REFERENCES

1. Sugimoto M, Yamaoka Y. Role of Vonoprazan in *Helicobacter pylori* Eradication Therapy in Japan. *Front Pharmacol* 2018;9:1560.
2. Yamada S, Kawakami T, Nakatsugawa Y, Suzuki T, Fujii H, Tomatsuri N, et al. Usefulness of vonoprazan, a potassium ion-competitive acid blocker, for primary eradication of *Helicobacter pylori*. *World J Gastrointest Pharmacol Ther* 2016;7:550–5.
3. Suzuki H, Mori H. World trends for *H. pylori* eradication therapy and gastric cancer prevention strategy by *H. pylori* test-and-treat. *J Gastroenterol* 2018;53:354–61.
4. Murakami K, Sakurai Y, Shiino M, Funao N, Nishimura A, Asaka M. Vonoprazan, a novel potassium-competitive acid blocker, as a component of first-line and second-line triple therapy for *Helicobacter pylori* eradication: a phase III, randomised, double-blind study. *Gut* 2016;65:1439-46.
5. Sakurai K, Suda H, Ido Y, Takeichi T, Okuda A, Hasuda K, et al. Comparative study: vonoprazan and proton pump inhibitors in *Helicobacter pylori* eradication therapy. *World J Gastroenterol* 2017;23:668–75.
6. Kajihara, Y. Sex-specific differences in response to first-line *Helicobacter pylori* eradication therapy with vonoprazan, amoxicillin, and clarithromycin. *Indones J Gastroenterol Hepatol Dig Endosc* 2019;3:146-9.