Should we use proton pump inhibitors as an add-on treatment in hereditary hemochromatosis?

Haluk Tarık Kani, Feyza Gündüz

Department of Gastroenterology, Marmara University School of Medicine, İstanbul, Turkey

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Hereditary hemochromatosis (HH) is a rare disorder related to mutations in the HFE gene (1). These mutations cause increased iron absorption from intestine and accumulation in several organs, impairing organ functions (2). Increased iron accumulation causes liver fibrosis, elevation in liver enzymes, cirrhosis, hepatocellular carcinoma, hearth failure, arthritis, and diabetes mellitus (3-5). To avoid complications, the iron overload is decreased; phlebotomy is the cornerstone in treatment (6).

Vanclooster et al. (7) performed a double-blind, randomized, placebo-controlled trial comparing the phlebotomy frequency between 31 C282Y mutation homozygous-positive patients with HH who were treated with a proton pump inhibitor (PPI) (pantoprazole 40 mg/day) plus phlebotomy and those treated with phlebotomy plus placebo. PPI inhibits iron absorption; therefore, it can be used for treating hemochromatosis with an additional therapy (8). Both study groups were homogeneous and there was no difference in age, age at diagnosis, sex, and phlebotomy frequency in the year before the study. During the study, the total phlebotomy count decreased in the PPI group (PPI vs. placebo: 1.27±1.03 vs 2.60±1.55, p=0.0052). In the PPI group, one patient had Campylobacter gastroenteritis, which was resolved in 3 days. In the placebo group, two patients experienced abdominal discomfort and one patient experienced fatigue at the end of the study. At the end of one-year follow-up, three patients (placebo group, 2; PPI group, 1) described an increase in arthralgia. There were no serious adverse effects in any patient during the study period.

The ferritin level was significantly higher in the beginning of the study in the PPI group (PPI vs. placebo: 74.40±27.55 vs. 57.53±10.02, p=0.039); however, after 12 months of add-on treatment with PPI, the ferritin level was lower in the PPI group than in the placebo group, with a lower phlebotomy need. The difference between the ferritin levels in the two groups was statistically significant (PPI vs. placebo: 90.53±46.18 vs. 125.80±37.06, p=0.0145). However, the ferritin levels increased in both the groups at the one-year follow-up; there were no serious side effects due to PPI use in the one-year follow-up period.

The small number of the study population was the limitation of the study; it was lower than the advised number with power analysis.

This double-blind, randomized, placebo-controlled study clearly showed the decrease in phlebotomy frequency with the use of PPIs in C282Y mutation homozygous-positive patients with HH; however, it is still early to advice PPIs as an add-on therapy to routine phlebotomy. Further studies with a larger study population and a longer follow-up duration are required to evaluate the safety and efficacy of PPIs as a treatment option in patients with HH.

REFERENCES

1. *Feder JN, Gnirke A, Thomas W, Tsuchihashi Z, Ruddy DA, Basava A. The discovery of the new haemochromatosis gene. 1996. J Hepatol 2003; 38: 704-9.* **[CrossRef]**
2. *Franchini M. Hereditary iron overload: update on pathophysiology, diagnosis, and treatment. Am J Hematol 2006; 81: 202-9.* **[CrossRef]**
3. *Adams PC, Deugnier Y, Moirand R, Brissot P. The relationship between iron overload, clinical symptoms, and age in 410 patients with genetic hemochromatosis. Hepatology 1997; 25: 162-6.* **[CrossRef]**
4. *Fracanzani AL, Fargion S, Romano R, et al. Portal hypertension and iron depletion in patients with genetic hemochromatosis. Hepatology 1995; 22: 1127-31.* **[CrossRef]**
5. *Simon M, Bourel M, Genetet B, Fauchet R. Idiopathic hemochromatosis. Demonstration of recessive transmission and early detection by family HLA typing. N Engl J Med 1977; 297: 1017-21.* **[CrossRef]**
6. *Adams PC, Barton JC. How I treat hemochromatosis. Blood 2010; 116: 317-25.* **[CrossRef]**
7. *Vanclooster A, van Deursen C, Jaspers R, Cassiman D, Koek G. Proton pump ınhibitors decrease phlebotomy need in hfe hemochromatosis: double-blind randomized placebo-controlled trial. Gastroenterology 2017; 153: 678-80 e2.*
8. *Adams PC. The Irony of Long-term Acid Suppression. Gastroenterology 2017; 153: 637-8.* **[CrossRef]**

ORCID IDs of the authors: *H.K. 0000-0003-0042-9256; F.G. 0000-0003-2901-7044.*

Address for Correspondence: ***Feyza Gündüz*** *E-mail:* ***drfgunduz@yahoo.com***

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