

A Case Report on Pantoprazole Induced VIT. B₁₂ Deficiency

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ABSTRACT

A 40 yr old male patient suffering with GERD was initially prescribed with Pantoprazole 40 mg OD for 15 days. After the treatment, suddenly the patient started feeling uncharacterized dizziness and fatigue. The patient consulted his physician who is a gastroenterologist. After a thorough examination the physician asked the patient for blood tests which revealed that the Hb is normal but the amount of Vit.B₁₂ present in the blood is less than the normal. It was confirmed that, after the use of Pantoprazole, Vit.B₁₂ blood levels have decreased which lead to the symptoms. This case report summarizes that on long term use of pantoprazole should be supported by supplemental therapy with Vit.B₁₂. **Background:** Proton pump inhibitors (PPI) are now one of the most widely used classes of drugs. PPIs have proven to have a very favourable safety profile and it is unusual for a patient to stop these drugs because of side effects. However, increasing numbers of patients are chronically taking PPIs for gastroesophageal reflux disease and a number of other common persistent conditions, therefore the long-term potential adverse effects are receiving increasing attention. One area that is receiving much attention and generally has been poorly studied is the long-term effects of chronic acid suppression on the absorption of vitamins and nutrients.

Key words: Pantoprazole, Gastroesophageal reflux disease, Gastric ulcer, Vitamin B₁₂ Deficiency, Dizziness.

CASE PRESENTATION

An ADR report concerning a patient who developed vitamin B₁₂ deficiency while being treated with pantoprazole. The patient, who had been treated with pantoprazole 40 mg for gastroesophageal reflux disease with gastric ulcer for 15 days. After this, the patient consulted his physician about uncharacteristic symptoms including periodic dizziness. Blood examinations revealed Vitamin B₁₂ deficiency. The patient was examined, and no other causes were found that could explain the inability to absorb Vitamin B₁₂. After Pantoprazole was discontinued, serum B₁₂ levels normalized.

TREATMENT

Withdrawal of the drug has relieved the patient from the unexplained periodic dizziness, and

vitamin supplements was provided to that patient.

Outcome And Followup

The patient remained free of symptoms after he was given syrup Vit.B₁₂.

DISCUSSION

The proton pumps inhibitors (PPIs) as a class is remarkably safe and effective for persons with peptic ulcer disorders.¹ Anemia has frequently been reported as the only manifestation or the most frequent extra-intestinal symptom of celiac disease. Anemia due to isolated cobalamin deficiency is a frequent finding in the elderly, and its etiology goes beyond the classical pernicious anemia concept.² Deficiency of vitamin B₁₂ is also common in CD and frequently results

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in anemia.³ PPIs reduce gastric acidity, which is necessary to activate pepsinogen to pepsin to release vitamin B₁₂ from B₁₂-containing foods. PPIs used short-term may minimally reduce the absorption of protein-bound B₁₂ in food.⁴⁻⁶ Long-term use of PPIs does not lead to vitamin B₁₂ deficiencies, except possibly in the elderly or in persons with ZES (Zollinger's Ellison syndrome) who are on high doses of PPI for prolonged periods of time.^{7,8} PPIs have been associated with an increased risk of vitamin and mineral deficiencies impacting vitamin B₁₂, vitamin C, calcium, iron and magnesium metabolism. No current evidence recommends routine screening or supplementation for these potential vitamin and mineral deficiencies in patients on either short- or long-term PPI therapy. Reducing inappropriate prescribing of PPIs can minimize the potential risk of vitamin and mineral deficiencies.⁹ Vitamin B₁₂ (cobalamin) is an essential water soluble nutrient acquired from animal-derived food sources including meat, fish, shellfish, poultry, eggs and dairy products. Lacto-ovo vegetarians are generally not considered to be at risk for deficiency, while true vegans may risk deficiency unless they consume supplements or vitamin B₁₂ fortified foods including cereals and soy-based products. Since, the common human diet contains substantially more vitamin B₁₂ than is required, a large functional reserve with respect to vitamin B₁₂ absorption is assumed.¹⁰ Evidence-based guidelines supporting proton pump inhibitor (PPI) use as the superior option for antisecretory therapy for treatment of non erosive gastro esophageal reflux disease (GERD).¹¹

The overall benefits of therapy and improvement in quality of life significantly outweigh potential risks in almost all patients. Risk stratification of elderly, frail, malnourished, dialyzed and chronically hospitalized patients should direct clinicians to measure benefits of therapy against risks.

Learning Points

Doctors, Pharmacists & Nursing staff should be aware of the following:

- Pantoprazole, as all acid-blocking medicines, may reduce the absorption of Cyanocobalamin due to hypo- or Achlorhydria.
- This should be considered for patients with reduced Cyanocobalamin stores (low plasma cobalamins) or other risk factors for reduced Cyanocobalamin absorption on long-term therapy or if respective clinical symptoms are observed (symptoms of anemia).

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CONFLICT OF INTEREST

The Author declare no conflict of interest.

ABBREVIATIONS USED

GERD:	Gastro esophageal reflux disorder
PPI:	Proton Pump Inhibitor
ADR:	Adverse drug reaction
ZES:	Zollinger's Ellison syndrome

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