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On Drugs and Therapeutics

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IN BRIEF

PPIs and Hypomagnesemia

The FDA has warned that prolonged use of a proton pump inhibitor (PPI) can lead to hypomagnesemia.¹ Normal serum concentrations of magnesium are 0.7-1.0 mmol/L. About 30 cases of severe hypomagnesemia (<0.5 mmol/L) have been reported in long-term PPI users; when the PPI was stopped, serum magnesium levels returned to normal in less than 2 weeks.²⁻⁵ The exact mechanism is unknown, but in some patients PPIs apparently interfere with active transport of magnesium across the intestinal wall or cause excessive loss into the intestinal lumen.⁶ Hypomagnesemia is often accompanied by hypocalcemia and hypokalemia. Symptoms can include muscle weakness, tremor, muscle cramps, carpopedal spasm, tetany, seizures, and cardiac conduction disturbances and arrhythmias. Most patients who take PPIs for a long time do not develop hypomagnesemia, and those with hypomagnesemia often do not have symptoms. Patients also taking other drugs that cause hypomagnesemia, such as diuretics and digoxin, may be at increased risk.

1. FDA Drug Safety Communication: Low magnesium levels can be associated with long-term use of proton pump inhibitor drugs (PPIs). Available at www.fda.gov/Drugs/DrugSafety/ucm245011.htm. Accessed March 28, 2011.
2. M Epstein et al. Proton-pump inhibitors and hypomagnesemic hypoparathyroidism. *N Engl J Med* 2006; 355:1834.
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5. J Mackay and PT Bladon. Hypomagnesaemia due to proton-pump inhibitor therapy: a clinical case series. *QJM* 2010; 103:387.
6. T Cundy and J Mackay. Proton pump inhibitors and severe hypomagnesaemia. *Curr Opin Gastroenterol* 2011; 27:180.

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