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IN BRIEF

PPIs and Torsades de Pointes

The Arizona Center for Education and Research on Therapeutics (AZCERT) has recently added the proton pump inhibitors (PPIs) omeprazole (*Prilosec*, and others), esomeprazole (*Nexium*, and others), lansoprazole (*Prevacid*, and others), and pantoprazole (*Protonix*, and generics) to its lists of Drugs with Conditional Risk of Torsades de Pointes (TdP) and Drugs to Avoid in Patients with Congenital Long QT Syndrome.¹

PPIs do not directly cause prolongation of the QT interval, but they have been associated with hypomagnesemia, which is often accompanied by hypocalcemia and hypokalemia and can result in cardiac repolarization disturbances such as QT interval prolongation.² Reports have described cases of QT interval prolongation and TdP associated with severe PPI-induced hypomagnesemia.^{3,4} TdP has also been reported in patients taking a PPI concomitantly with drugs that directly prolong the QT interval.^{5,6} The newer PPIs dexlansoprazole (*Dexilant*) and rabeprazole (*Aciphex*, and generics) have not been linked to QT interval prolongation or TdP to date, but they can cause hypomagnesemia.

Serum magnesium levels should be monitored periodically in patients taking a PPI for an extended period of time (>2 weeks). If possible, extended PPI therapy should be avoided in patients who require treatment with drugs that carry a known risk of TdP⁷ and in those with long QT syndrome. If extended PPI therapy must be used with a drug that prolongs the QT interval, close monitoring of magnesium levels and the QT interval is recommended. ■

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4. BA Hansen and Ø Bruserud. Hypomagnesemia as a potentially life-threatening adverse effect of omeprazole. *Oxf Med Case Reports* 2016; 2016:147.
5. H Asajima et al. Lansoprazole precipitated QT prolongation and torsade de pointes associated with disopyramide. *Eur J Clin Pharmacol* 2012; 68:331.
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