HYPOMAGNESAEMIA
Supporting information

What monitoring is required when administering drugs that may cause hypomagnesaemia?
A review of the subject (Atsmon, 2005) suggests that, when drugs classified as inducing 'significant' hypomagnesaemia (cisplatin, amphotericin B, ciclosporin) are administered, routine magnesium monitoring is warranted, preventive treatment should be considered and treatment of hypomagnesaemia should be initiated with or without overt clinical manifestations. This is supported by a systematic review (Hess et al 2012) which confirmed a drug class effect specifically for Proton pump inhibitors, a mainstay therapy for all gastric acid-related diseases. In drugs belonging to the 'potentially significant' category, among which are amikacin, gentamicin, laxatives, pentamidine, tobramycin, tacrolimus and carboplatin, magnesium monitoring is justified when either of the following occurs: clinical manifestations are apparent; persistent hypokalaemia, hypocalcaemia or alkalosis are present; other precipitating factors for hypomagnesaemia coexist; or treatment is with more than one potentially hypomagnesaemic drug. No preventive treatment is required and treatment should be initiated only if hypomagnesaemia is accompanied by symptoms or clinically significant relevant laboratory findings. In those drugs whose hypomagnesaemic effect is labelled as 'questionable', including furosemide and hydrochlorothiazide, routine monitoring and treatment are not required.
In a review of the evidence of Hypomagnesemia Induced by Long-Term Treatment with Proton-Pump Inhibitors, the authors suggest monitoring the blood magnesium levels of patients if they meet any of the following criteria:

- Exhibiting signs consistent with magnesium deficiency
- Concurrently treatment with other agents that may lower magnesium level
- Those with poor renal function (Janett, 2015)

Atsmon J, Dolev E. Drug-induced hypomagnesaemia : scope and management. Drug Safety 2005;28:763-88

Hess, MW, Hoederop, JG, Bindels, RJ and Drenth, JP. Systematic review: hypomagnesaemia induced by proton pump inhibition. Aliment Pharmacol Ther 2012:36: 405-13
http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2036.2012.05201.x/full

Janett S, Camozzi P, Peeters GG et al. Hypomagnesemia Induced by Long-Term Treatment with Proton-Pump Inhibitors. Gastroenterol Res Pract. 2015
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4434191/

Evidence Level: V

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