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Intravenous Lansoprazole

A Viewpoint by Malcolm Robinson

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Lansoprazole has been a very successful proton pump inhibitor (PPI) and its popularity has been enhanced by unusually wide-ranging clinical studies of potential applications. At least in North America, lansoprazole has far more labelled indications than any competing PPI. Each indication has been supported by clinical trials. Likewise, this PPI is available and/or approved in multiple formulations (e.g. capsule, oral suspension, granules in fruit or juice, simplified oral solution for nasogastric administration).

After a number of studies in North America and elsewhere, lansoprazole is now also available in an intravenous (IV) formulation. IV lansoprazole joins IV pantoprazole and IV esomeprazole (in the EU), all intended for use in the hospital setting (ostensibly for patients with erosive oesophagitis who are unable to take oral medications). Physicians will undoubtedly applaud this addition to the therapeutic armamentarium. Based on the history of lansoprazole, one may expect a number of continuing investigations of IV lansoprazole use and, indeed, of IV PPI therapy in general. Unfortunately, such studies are badly needed since most of the current use of IV pantoprazole is 'off label'.

Physicians quickly assumed that superior acid suppression associated with oral PPI therapy must be mirrored by IV PPI pharmacology. This is not necessarily the case. As shown by Freston et al.,[1] IV pantoprazole 40mg has slower onset and less potency than a standard 30mg dose of oral lansoprazole. PPIs work by inhibiting active proton pumps and it is well known that they are most effective when administered with meals. Hospitalised patients who receive IV PPIs are fasting and they may be expected to be relatively refractory to usual PPI doses that would lead to excellent acid suppression in fed patients. Studies in fasting patients are mandatory for IV PPIs, particularly in terms of their efficacy or potential efficacy for stress ulcer prophylaxis or the prevention of re-bleeding after endoscopic therapy of upper gastrointestinal lesions.

In the meantime, IV lansoprazole can be used in appropriate settings, such as in patients who are unable to take oral medication and are in need of profound acid suppression (e.g. those who have required endoscopic haemostasis for gastroduodenal haemorrhage). ▲

Reference

1. Freston J, Chiu YL, Pan WJ, et al. Effects on 24-hour intragastric pH: a comparison of lansoprazole administered nasogastrically in apple juice and pantoprazole administered intravenously. Am J Gastroenterol 2001 Jul; 96 (7): 2058-65