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Lansoprazole in the Treatment of Gastro-oesophageal Reflux Disease in Children and Adolescents

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Acid suppression and prokinetic effects are the two mainstays in the treatment of gastro-oesophageal reflux disease (GORD). Superior efficacy has been extensively demonstrated for all proton pump inhibitors (PPIs) compared with histamine H_2-receptor antagonists in terms of gastric acid suppression, disappearance of symptoms and oesophageal mucosal lesions, and reduction in relapses and complications. Omeprazole and lansoprazole are the only PPIs approved for use in paediatric patients. The mechanism of action, healing of oesophagitis and symptom relief rates are similar between lansoprazole and omeprazole. Limited data showed slightly better efficacy with lansoprazole for gastric acid secretion response (faster onset of maximal acid suppression, longer time with intragastric pH >3 and higher gastrin concentrations).

Lansoprazole is rapidly absorbed and cleared from plasma and showed similar pharmacokinetics and bioavailability in adults and in children. No clinically significant interactions with most drugs metabolised by hepatic cytochrome P450 isozymes have been reported; however, an adjusted dosage may be required in severe liver disease and with concomitant administration of theophylline. Adverse effects of short-term use of lansoprazole are limited to mild-to-moderate gastrointestinal symptoms and headache occurring in 3–5% and 3–7% of patients, respectively, and rarely requiring treatment discontinuation.

A relevant practical advantage of lansoprazole is the availability of an oral suspension and an orally disintegrating tablet (ODT) which are bioequivalent to the intact oral capsule and may facilitate the treatment of GORD in selected patients. The palatability of the strawberry-flavoured suspension and the fast and easy dispersion of the ODT directly in the mouth or in a small volume (2–4mL) of water provide an attractive administration option for infants and toddlers and for patients with swallowing disorders or with gastrostomy or a nasogastric tube.

The lack of efficacy of lansoprazole, even at a dosage of 30mg twice daily, in a minority of patients remains to be explained and is most likely ascribable to variability in liver metabolism and pharmacogenetics. Further research on the beneficial effect of lansoprazole in infants and on the long-term safety in paediatric patients should be highly encouraged. ▲