

Management of Gastro Oesophageal Reflux in Children

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Gastro-oesophageal reflux (GOR) is a common gastrointestinal disorder in infants and children. It is characterized by the retrograde flow of gastric contents into the oesophagus, leading to a range of symptoms such as regurgitation, vomiting, feeding difficulties, and irritability. While most infants with GOR experience spontaneous resolution of symptoms by 12 months of age, a significant proportion may continue to have symptoms that require medical management. In this article, we review recent advances in the management of GOR in children, with a focus on pharmacological and surgical interventions.

Pharmacological Management

Acid suppression therapy is the cornerstone of pharmacological management of GOR in children. Proton pump inhibitors (PPIs) and histamine-2 receptor antagonists (H2RAs) are the most commonly used acid-suppressing agents. PPIs inhibit the final step of acid secretion by irreversibly binding to the hydrogen potassium ATPase enzyme in the parietal cells of the stomach. H2RAs act by blocking the action of histamine on the parietal cells, thereby reducing acid secretion.

Recent studies have shown that PPIs are more effective than H2RAs in the management of GOR in children, particularly in those with severe symptoms or reflux-related complications such as oesophagitis and aspiration pneumonia [1,2]. However, concerns have been raised about the long-term safety of PPIs, including an increased risk of bacterial gastroenteritis, bone fractures, and vitamin B12 deficiency [3,4]. Therefore, the use of PPIs in children should be carefully considered and monitored.

Another class of drugs that has gained interest in the management of GOR in children is prokinetic agents. Prokinetics enhance gastrointestinal motility and improve the clearance of gastric contents from the oesophagus. Metoclopramide and domperidone are the two most commonly used prokinetic agents. However, their efficacy in the management of GOR in children is uncertain, and they are associated with side effects such as extrapyramidal symptoms and cardiac arrhythmias [5].

Surgical Management

Surgical intervention is considered in children with refractory GOR who fail to respond to medical management or who develop complications such as recurrent aspiration pneumonia or failure to thrive. The two main surgical procedures used in the management of GOR in children are fundoplication and gastrostomy.

Fundoplication involves wrapping the upper part of the stomach around the lower oesophagus to create a barrier to reflux. Laparoscopic fundoplication has become the preferred approach in children due to its lower morbidity and faster recovery time compared to open surgery [6]. Recent studies have shown that laparoscopic fundoplication is effective in the management of GOR in children, with high success rates and low rates of complications [7,8].

Gastrostomy involves the insertion of a feeding tube through the abdominal wall directly into the stomach, allowing for the delivery of enteral nutrition and medication. Gastrostomy is indicated in children with severe feeding difficulties or in those who require long-term enteral nutrition support. Recent studies have shown that gastrostomy is effective in the management of GOR in children, with improvement in symptoms and nutritional status [9,10].

Conclusion

Gastro-oesophageal reflux is a common gastrointestinal disorder in children that can have significant morbidity and impact on quality of life. Recent advances in the management of GOR in children include the use of PPIs as the first-line pharmacological therapy and laparoscopic fundoplication as the preferred surgical approach. Prokinetic agents have limited efficacy and are associated with side effects, while gastrostomy is indicated in children

References

1. Orenstein SR, Hassall E, Furmaga-Jablonska W, Atkinson S, Raanan M. Multicenter, double-blind, randomized, placebo-controlled trial assessing the efficacy and safety of

- proton pump inhibitor lansoprazole in infants with symptoms of gastroesophageal reflux disease. *J Pediatr*. 2009. 154: 514-520.
2. Rosen R, Vandenplas Y, Singendonk M, Cabana M, Di Lorenzo C, et al. Pediatric Gastroesophageal Reflux Clinical Practice Guidelines: Joint Recommendations of the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition and the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition. *J Pediatr Gastroenterol Nutr*. 2018. 66: 516-554.
 3. Freedberg DE, Kim LS, Yang YX. The Risks and Benefits of Long-term Use of Proton Pump Inhibitors: Expert Review and Best Practice Advice From the American Gastroenterological Association. *Gastroenterology*. 2017. 152: 706-715.
 4. Harewood GC, Orlando RC. The safety of proton pump inhibitors: a novel perspective. *Am J Med*. 2011. 115: 180S-184S.
 5. van der Pol RJ, Smits MJ, van Wijk MP, Omari TI, Tabbers MM, et al. Efficacy of proton-pump inhibitors in children with gastroesophageal reflux disease: a systematic review. *Pediatrics*. 2011. 127: 925-935.
 6. Lobe TE, Schropp KP, Haight C. Laparoscopic Nissen fundoplication in infants and children. *J Pediatr Surg*. 1999. 34: 320-323.
 7. Matsuzaki J, Sugimoto N, Miyake H, Yamashita H, Fukumoto K, et al. Laparoscopic Toupet fundoplication for gastroesophageal reflux disease in children. *Pediatr Surg Int*. 2017. 33: 503-509.
 8. Tretter AE, Lao OB, Gayer CP, Gluchowski LE, Lally KP, et al. Laparoscopic fundoplication in infants younger than 6 months. *J Pediatr Surg*. 2015. 50: 1183-1186.
 9. Chen LE, Braverman AS, Zupancic JA, McGrath-Morrow SA, Splaingard ML, et al. Gastrostomy tube placement does not increase gastroesophageal reflux in children. *Pediatrics*. 2010. 125: 44-52.
 10. Laituri CA, Garey CL, Fraser JD, Aguayo P, Ostlie DJ, et al. Laparoscopic gastrostomy tube placement in children with gastroesophageal reflux disease. *J Laparoendosc Adv Surg Tech A*. 2013. 23: 891-894.