

Gastroesophageal reflux disease in Asian infants: Similar condition, different perceptions

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Gastroesophageal reflux disease (GERD), a common problem in infancy, may lead to troublesome symptoms or complications such as oesophagitis or oesophageal stricturing in a small minority of infants.¹ In the majority of cases, however, frequent regurgitations, the commonest symptoms of GERD, resolves with age spontaneously without any medical intervention.^{2,3} Only a small proportion requires dietary modification or pharmacology therapy.³

In this issue of the *Annals*, McLoughlin et al. published a prospective study evaluating the prevalence and natural history of GERD in Singapore infants using the revised Infant Gastroesophageal Reflux Questionnaire (I-GERQ-R).⁴ The authors found that the peak prevalence of infant GERD was 26.5% at 6 weeks, decreasing to 7.7% at 3 months and 1.1% at 1 year. While the findings on the natural evolution of GERD in Singapore infants is similar to other prospective cohort studies,^{2,3} the survey on the parental perception in the study is novel and raised interesting observations.⁴

Unlike most observational studies on the natural history of GERD from the clinician's perspective, McLoughlin et al. also explored the perception and lifestyle modifications by parents of infants with symptoms of GERD in the predominantly Chinese community in Singapore. The majority of parents of infants with or without the diagnosis of GERD thought that symptoms of excessive crying and regurgitation could be attributed to “too much ‘wind’ in the child's stomach” or an “immature digestive system”. Some mothers resorted to dietary modifications including elimination of spicy foods, or “cold food or drinks”.

The authors acknowledged the influence of Asian culture and traditional beliefs on the perception of “wind”. The concept of “wind” had been reviewed previously but a scientifically sound way of measurement has yet to be established.⁵ On the other hand, attempts have also been made to map and diagnose “heatiness” scientifically. “Heatiness” is another important traditional Chinese medicine concept, characterised as “redness, swelling,

fever and pain”, and is traditionally diagnosed by Chinese traditional medicine practitioners subjectively.⁶

“Bloating”, “wind”, “gas in stomach” are terms commonly used in education websites for parents in Western literature to describe discomfort or colic in babies.⁷ Air swallowing is a physiological phenomenon believed to be involuntary in infants during feeding. Evidence supporting air swallowing leading to excessive stomach distension and GERD in infants is lacking. Recently, however, oesophageal air swallowing temporarily associated with GERD-like symptoms (coughing and back arching associated with air swallowing) were demonstrated via multichannel intraluminal impedance in a study in 2 infants with symptoms suggestive of GERD.⁸ These GERD-like symptoms were not associated with acidic reflux at the lower oesophagus, and the reflux index were 1.4% and 5.9%, respectively.⁸ Although the sample size is very small, this novel finding may be used as an example of how modern “Western” medicine can help complement traditional belief of “wind” in counselling parents of infants with GERD, who have the perception of “wind” as reported by McLoughlin et al.

McLoughlin et al. also found that all infants with GERD in their study were positioned at 30–45° by their parents during and after feed. Loots et al. performed a small, randomised trial to compare the effect of left lateral position and head elevation to 20° with or without gastric acid suppression for 14 days in infants with symptoms of reflux. The authors found that left lateral positioning was more effective compared to head elevation in reducing gastroesophageal reflux (GER) episodes as well as vomiting, but not other symptoms of reflux.⁹ Thus, although head elevation after feeding has been a common advice given to parents to reduce GER, it may not be an effective measure to reduce symptoms of GERD. However, no position other than supine position is recommended for infants with GERD after feeding, especially when they are sleeping because of the risk of sudden infant death syndrome.¹

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McLoughlin et al. did not report whether the parents in their cohort of infants resorted to burping their infants to reduce regurgitation. Burping infants after feeding has been given as an advice to parents regularly.¹⁰ Parents are told to hold the baby upright and gently pat at the back until “wind” is released. This is thought to reduce the frequency of regurgitation. However, a small randomised, non-blinded, controlled trial from India involving 71 healthy babies reported a statistically higher incidence of regurgitation in the “burping” group as compared to control (8.1 versus 3.7 episodes/infant/week) with a difference of 4.36 episodes/infant/week (95% confidence interval 4.04–4.69).¹⁰ Thus some traditional remedies practised by parents may not be effective.

Besides confirming the self-limiting nature and natural history of infant GERD, the study by McLoughlin et al. also adds to our knowledge on the parental perception and lifestyle modification in this common childhood condition. It reinforces the fact that parental perception of GERD is strongly influenced by traditional cultural beliefs. By incorporating the recent finding of oesophageal air swallowing by Western medicine into the concept of “wind” as a cause of GERD, parental satisfaction is improved, indirectly gaining trust of the patients.¹¹ Burping of infants after feeding, while in itself is probably harmless, has not been shown to be effective in reducing the frequency of regurgitation. Thus, a neutral attitude to burping can be adopted. On the other hand, positioning the head of the infant in 30–45° after feeding should probably be discouraged, especially if the infant is sleeping after feeding.

The main limitation of the study by McLoughlin et al. was a lack of pH impedance study and the subjective nature of I-GERQ-R questionnaire. Future studies should consider using pH impedance as an objective measure to ascertain the effectiveness of positioning the head at 30–45° during and after feed in infants with symptoms of GERD. No study has researched the efficacy of this measure before.

In conclusion, the work of McLoughlin et al. adds new insight into our knowledge on the parental perception of GERD and how parents cope with this common infant condition. It highlights that perception by clinicians and parents can differ in a clinical condition.

REFERENCES

1. Rosen R, Vandenplas Y, Singendonk M, 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;66:516–54.
2. Hegar B, Dewanti NR, Kadim M, et al. Natural evolution of regurgitation in healthy infants. *Acta Paediatr* 2009;98:1189–93.
3. Curien-Chotard M, Jantchou P. Natural history of gastroesophageal reflux in infancy: new data from a prospective cohort. *BMC Pediatr* 2020;20:152.
4. McLoughlin VZY, Suaini NHA, Siah K, et al. Prevalence, risk factors and parental perceptions of gastroesophageal reflux disease in Asian infants in Singapore. *Ann Acad Med Singap* 2022;51:263–71.
5. Dashtdar M, Dashtdar MR, Dashtdar B, et al. The Concept of Wind in Traditional Chinese Medicine. *J Pharmacopuncture* 2016;19:293–302.
6. Liu S, Huang Z, Wu Q, et al. Quantization and diagnosis of Shanghuo (Heatiness) in Chinese medicine using a diagnostic scoring scheme and salivary biochemical parameters. *Chin Med* 2014;9.
7. National Institute of Diabetes and Digestive and Kidney Diseases. Symptoms & causes of GER and GERD in infants. Available at: <https://www.niddk.nih.gov/health-information/digestive-diseases/acid-reflux-ger-gerd-infants/symptoms-causes>. Accessed on 4 April 2022.
8. Woodley FW, Ciciora SL, Vaz K, et al. Novel use of impedance technology shows that esophageal air events can be temporally associated with gastroesophageal reflux disease-like symptoms. *J Pediatr Gastroenterol Nutr* 2020;70:e7–11.
9. Loots C, Kritas S, van Wijk M, et al. Body positioning and medical therapy for infantile gastroesophageal reflux symptoms. *J Pediatr Gastroenterol Nutr* 2014;59:237–243.
10. Kaur R, Bharti B, Saini SK. A randomized controlled trial of burping for the prevention of colic and regurgitation in healthy infants. *Child Care Health Dev* 2015;41:52–6.
11. Tang C, Tian B, Zhang X, et al. The influence of cultural competence of nurses on patient satisfaction and the mediating effect of patient trust. *J Adv Nurs* 2019;75:749–59.