EDITORIAL

Cyclical vomiting syndrome in children: condition missed?

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Cyclic vomiting syndrome (CVS) affects the quality of life in children with repeated attacks of vomiting resembling migraine. It is prevalent in nearly 2.3% of children.[1] In 2008[2] a consensus statement of NASPGHAN on management paediatric CVS was made, this is now replaced by an updated 2025 NASPGHAN[3] detailed guidelines. Included in these guidelines are pharmacological and nonpharmacological preventive management strategies, lifestyle interventions, abortive and acute management and treatment of comorbid conditions.

CVS is also known as migraine-equivalent disorder, due to its resemblance to migraine and pharmacological interventions somewhat similar to migraine.[4] CVS peaks in school-aged children with recurrent attacks of nausea and vomiting which last few hours to weeks. Children often miss many days of school. In adolescence it can be followed up as migraine headaches. Sometimes these children have autonomic dysfunction which can confuse the diagnosis and management of CVS. Greater than 50% of the children will have a resolution of CVS, on a followup of 29 months with a range 6 month to 7 years. CVS can persist throughout life.[5]

Hence, in children presenting with nausea, vomiting and migraine, diagnosis of CVS should always be kept in mind and considered in the differential diagnosis of the disease in the child. There are various disorders which mimick paediatric CVS, such as brain pathology, mucosal GI disease or metabolic conditions[2,6] and no specific tests to diagnose these disorders is available. Varieties of CVS include migraine related, catamenial, calendar timed and Sato-variantand autonomic nervous system.[7,8] Migraine related family history is seen in 82% of children with CVS. Children have pallor, lethargy, photo-and or photophobia and generally respond to treatment with migraine related therapies and supported by mitochondrial DNA polymorphisim.[9]

There is no specific test to diagnose CVS. Rather, it is a diagnosis of exclusion after multiple evaluations for the same recurring symptoms. Often these patients will undergo numerous tests, scans, and even surgical procedures. Significant laboratory finding are usually nonspecific, such as evidence of dehydration.

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FDA approved drugs include; Nonsteroidal anti-inflammatory drugs and triptans are for treatment of paediatric migraine and Neurokinin[1] (NK1) receptor antagonist, intravenous for children with chemotherapy induced nausea and vomiting. While remaining drugs mentioned in the guidelines[3] are off-label hence, it is of concern while using these drugs in paediatrics. American Academy of Pediatrics[10] states that drugs used should be based on sound scientific evidence, expert medical judgement and published literature. Therefore, the use of off label drug included in the guidelines[3] mentioned are of a concern. An algorithim has been described in the guidelines based on the severity of CVS, expert consensus with evidence and side effects so that the drugs are used with caution.

The current evidence based guidelines have provided a detailed document based on systematic reviews, detailed research related to migraine in children. There are limitations to these guidelines, due to a low evidence for the majority of questions. However new evidence, ongoing review by experts in the field and regular revision of the guidelines by NASPGHAN will be done by an ongoing review by experts. Also a completion grade evidence to decision (EtD) is required[11] for each recommendation included.

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References

1. Fitzpatrick E, Bourke B, Drumm B, Rowland M. The incidence of cyclic vomiting syndrome in children: population-basedstudy. Am J Gastroenterol. 2008;103:991-995. doi:10. 1111/j.1572-0241.2007.01668.
2. Li BU, Lefevre F, Chelimsky GG, et al. North American Society for Pediatric Gastroenterology, Hepatology, and nutrition consensus statement on the diagnosis and management of cyclic vomiting syndrome. J Pediatr Gastroenterol Nutr. 2008;47:379-393. doi:10.1097/MPG.0b013e318173ed39
3. Karrento K, Rosen JM, Tarbell SE, Issenman RM, Gelfand AA, Gamboa H, Parikh S, Adams K, Wiercioch W, Li BUK. North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition 2025 guidelines for management of cyclic vomiting syndrome in children. J Pediatr Gastroenterol Nutr. 2025;80:1028-1061. doi: 10.1002/jpn3.70020. Epub 2025 Apr 14. PMID:40223700.
4. Spiri D, Rinaldi VE, Titomanlio L. Pediatric migraine and epi- sodic syndromes that may be associated with migraine. Ital J Pediatr. 2014;40:92.
5. Dipasquale V, Falsaperla R, Bongiovanni A, Ruggieri M, Romano C. Clinical features and long-term outcomes in pediatric cyclic vomiting

syndrome: a 9-year experience at three tertiary academic centers. Neurogastroenterol Motil. 2022; 34:14224.

6. Lucia-Casadonte CJ, Whaley KG, Chogle AS. Yield and costs of evaluating children with cyclic vomiting syndrome. J Pediatr Gastroenterol Nutr. 2018;67:13-17. doi:10.1097/MPG. 000000000000 1901
7. To J, Issenman RM, Kamath MV. Evaluation of neurocardiac signals in pediatric patients with cyclic vomiting syndrome through power spectral analysis of heart rate variability. J Pediatr. 1999;135:363-366. doi:10.1016/s0022-3476(99) 70135-6
8. Li BUK. Managing cyclic vomiting syndrome in children: beyond the guidelines. Eur J Pediatr. 2018;177:1435-1442. doi:10. 1007/s00431-018-3218-7
9. Lee LY, Abbott L, Mahlangu B, Moodie SJ, Anderson S. The management of cyclic vomiting syndrome: a systematic review. Eur J Gastroenterol Hepatol. 2012;24:1001-1006.
10. Neville KA, Frattarelli DAC, Galinkin JL, et al. Off-label use of drugs in children. Pediatrics. 2014;133:563-567
11. Schu¨nemann HJ, Wiercioch W, Brozek J, et al. GRADE Evi- dence to Decision (EtD) frameworks for adoption, adaptation, and de novo development of trustworthy recommendations: GRADE-ADOLOP MENT.J Clin Epidemiol. 2017;81:101-110