paediatric WATCH

Lessons from the frontline

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All that vomits is not gastroenteritis

An 8 year old boy presented to the Emergency Department (ED) with vomiting, abdominal pain and poor appetite. The patient is normally fit and well with no significant past medical history. Observations were taken at triage; respiratory rate and heart rate were elevated and tracking in the Yellow Zone. All other observations were "between the flags". A neurological assessment was not done at this time. The patient was given a triage category 3.

On assessment, the patient was pale with a capillary refill time of 2-3 seconds and the patient complained of nausea. It was established that the patient was continuing to pass good amounts of urine and was assessed as mildly dehydrated. An anti-emetic was prescribed and the patient was commenced on a trial of fluid. The patient tolerated the fluids and was discharged home and advised to represent if symptoms did not improve.

The patient re-presented within 8 hours of discharge with increasing lethargy and was described as "breathing fast" by his mother. On examination, the patient was tachycardic and tachypnoeic, both in the Red Zone and had a Glasgow Coma Score of 11. The patient continued to have a prolonged capillary refill time (>3 seconds) and was given a triage category 2. A blood glucose level and a venous blood gas was taken, with a high blood glucose level of 22mmol/L and a pH 7.12. Additional pathology was obtained and treatment for diabetic ketoacidosis was commenced.

The patient was later diagnosed with Type 1 diabetes mellitus and commenced on a treatment and education plan for the patient and his family.

Lessons Learnt

Be cautious of diagnosing gastroenteritis in patient's with vomiting as a single symptom and hold a high suspicion that there could be an alternative cause of the vomiting, especially in the absence of diarrhoea.

A thorough physical examination should include abdominal and neurological examination. Observations should be conducted at regular intervals, and within the ED environment, consider obtaining a full set of observations hourly. Also consider obtaining a blood glucose level and urinalysis, providing additional pieces to the clinical picture that may assist in determining a differential diagnosis.

Gastroenteritis consists of the triad of vomiting, diarrhoea and fever[1].
In the absence of the triad, differential diagnoses should be explored for a patient who presents with vomiting alone.

In cases like this where the diagnosis does not fit the clinical picture, it is important that differential diagnoses are considered. Always consider another diagnosis if there is:

- Abdominal distension
- Bile-stained vomiting
- Fever >39ºC
- Blood in vomitus or stool
- Severe abdominal pain
- Vomiting in the absence of diarrhoea
- Headache

Other conditions that may present with non-specific symptoms with vomiting as the obvious concern include; gastrointestinal obstruction, raised intracranial pressure, testicular torsion, and urinary tract infections, to name a few. These need to be considered in context with the patient's other presenting symptoms (if any) and from obtaining a detailed patient history[2].

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www.cec.health.nsw.gov.au

The Paediatric Patient Safety Program works across a range of areas to improve the quality and safety of health care for children and young

Reducing the risk

In the event of diagnostic uncertainty or when a patient is progressing differently than expected for that diagnosis, strongly consider diagnostic error mitigation strategies. It is highly recommended that you escalate to a senior clinician for a second opinion or employ a more formalised approach to addressing diagnostic uncertainty such as the CEC's Take 2; Think, Do.

Alternatively, the Red Team / Blue Team Challenge is a useful tool to safely question and challenge the diagnostic decision making within the team environment. It aims to remove hierarchy, ensuring all clinicians have an equal voice and are able to share opinions within a supported environment. For more information on the Red Team / Blue Team Challenge visit: http://www.cec.health.nsw.gov.au/quality-improvement/people-and-culture/diagnostic-error/quality-care

Additionally, the CEC's Paediatric Clinical Pearls of Wisdom are a collection of simple prompts designed to guide and assist clinicians in the timely recognition, diagnosis and management of the sick child. This is available on the Paediatric Patient Safety page of the CEC's website.

References

1. New South Wales Health, 2014, Management of Acute Gastroenteritis, 4ed., viewed 10 September 2018, < https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/GL2014_024.pdf>
2. Di Lorenzo, C, 2018, Approach to the infant or child with nausea and vomiting, UpToDate, viewed 11 September 2018, < https://www.uptodate.com.acs.hcn.com.au/contents/approach-to-the-infant-or-child-with-nausea-and-vomiting?search=vomiting%20in%20children&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H102891175>

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