Gastroenteritis in children

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Resources

Managing Young Children and Infants with Gastroenteritis in Hospitals

NSW Department of Health Circular (2002/26). Issued 28 June 2002.

Factsheet: Gastroenteritis

Children's Hospital Westmead / Sydney Children's Hospital

Oral rehydration protocol

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Infectious gastroenteritis in children is very common, more so during "gastro" season. For most children, the aetiology is a viral infection and the course of the illness will be relatively mild. They will not require medical investigation or in hospital management. For a minority of children, they may have severe symptoms and present with significant dehydration.

Be aware that a viral gastroenteritis can (just like bacterial gastroenteritis) cause severe symptoms. I have seen more than one case of bloody diarrhoea in an infant that turned out to be due to *Rotavirus*.

The first thing that should cross your mind when you see a child with potential gastroenteritis is that it is ***infectious***. Which means that **you are at risk of being just as sick as the kid**.

You don't want to pick up gastroenteritis from you patients. Hygiene is of utmost importance. Hand washing, gloves, gown. Protect both yourself and your other patients.

Secondly, gastroenteritis in children usually consists of vomiting and/or diarrhoea, and/or fever, and/or irritability. These symptoms are highly non-specific. A thorough history and examination is **always** required and have a high index of suspicion for other diagnoses.

Consider alternative diagnoses especially if there is:

- abdominal distension
- bile-stained vomiting
- fever > 39 C

Alternative diagnoses include:

- acute appendicitis
- strangulated hernia
- intussusception or other causes of bowel obstruction

• blood in vomitus or stool • severe abdominal pain • vomiting in the absence of diarrhoea • headache • child younger than 2 months	• urinary tract infection • meningitis and other types of sepsis • any cause of raised intracranial pressure • diabetic ketoacidosis • inborn errors of metabolism • inflammatory bowel disease • haemolytic uraemic syndrome

Oral rehydration therapy

Most children who present with mild to moderate dehydration (i.e., up to around 5% dehydrated) should be trialed on **oral hydration therapy**. This can either be breast milk, oral rehydration solution ("Gastrolyte" or "Hydrolyte"), or watered down juice/flat soft drink (1 part juice to 5 parts juice).

Do not use "straight" juice or soft drink as the sucrose concentration is too high (and can worsen diarrhoea). Do not use "diet" soft drinks. My personal opinion is that the oral rehydration solutions are best, though they are not tolerated by all children (with regards to taste) and not all parents will buy (or can afford to buy) it from the pharmacy.

Who:

- In mild to moderate dehydration (children less than 7% dry), this is recommended as first line therapy.
- In non-specialised hands, intravenous rehydration would be preferable as first line in children with moderately-severe to severe dehydration.

Fluid:

- Breast milk *or*
- Oral rehydration solution (e.g., Gastrolyte or Hydrolyte) - can be as solution though ice blocks are popular with children *or*
- Watered down juice or flat soft drink (1 to 5 dilution) - *not preferred option*.

Rate:

- **6 mL/kg/hr**
- When acutely unwell with nausea and vomiting, small frequent volumes are much better tolerated. Thus, in the emergency department, **1.5 mL/kg every 15 minutes**.

How:

- Frequent but small volumes is preferable, even at home.
- In the ED, give a oral rehydration protocol sheet (check local protocols) and gastroenteritis factsheet to the parents.
- Give fluid with bottle, cup, syringe, ice block - however it is best tolerated.
- Every 15 minutes, the parents can document on the protocol sheet the amount of oral fluid taken, whether there was any vomiting or diarrhoea.

In some emergency departments with the appropriate protocol, the child will be placed onto the oral rehydration protocol once seen in triage. This is a fantastic system. If your local emergency department does not have this in place, it should be considered as it saves a lot of time. A trial of such a system at The Canterbury Hospital from March 2002 to May 2003 resulted in a significant reduction in the admission rate for paediatric gastroenteritis, from 33% (12 month period of January to December 2001) to 15%.

I find it generally useful to review the oral rehydration therapy sheet after a 2 hour trial. If fluids have been very well tolerated and there are no other concerns that would trigger investigations, then the child can probably be discharged home with parent education to continue with oral rehydration therapy.

On the other hand, if oral rehydration therapy was not well tolerated (which can be for both parental and child factors), then that is an indication for admission.

Nasogastric rehydration therapy

The NSW Department of Health Circular (June 2002) suggests using NG rehydration as a second line option. Certainly, this is a reasonable option for children no tolerating oral intake and it has been proven to be effective in rural / remote areas where intravenous therapy is not an easily available option (e.g., in areas where the staff lack the expertise in obtaining paediatric intravenous access).

My personal opinion is that in most situations in NSW, Australia, if oral rehydration therapy fails, then you should proceed to the intravenous route as it is more reliable and you probably want some blood for tests anyway. You should learn to cannulate infants and children. It isn't actually that difficult.

Intravenous rehydration therapy

This should be first line for children with moderately-severe to severe levels of dehydration. A specific article on intravenous rehydration in children is available.

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