

The Child With HIV And Gastroenteritis

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Children with HIV infection are told to come hospital if they become unwell. This is usually either because they have a fever, vomiting and diarrhoea, or a chest infection. These guidelines are for the child with vomiting and diarrhoea.

Children with HIV have a considerably increased risk of bacterial infections. General principles are: treat with antibiotics earlier, with higher doses for longer courses.

1. Note the stage of the child's illness. The more severely immunosuppressed the more likely to have minimal signs and serious pathology. Look in notes for recent letters and CD4 count. A CD4 < 10% (or <200 in children over 5 years old) means severely immunosuppressed.

Take a good history of the acute illness and examine the child thoroughly. Get past history from notes – parents often vague/reluctant historians of past illness. If the child has had proven bacterial infection before – most likely to be recurrence of that infection.

Think of serious bacterial infections eg. UTI, septicaemia

Causes

“Children with HIV are different”

The cause of endemic gastroenteritis (GE) in paediatric HIV varies around the world. Children can have GE with pathogens that infect HIV negative children (eg. rotavirus, adenovirus, Salmonella, Shigella, or Campylobacter in the UK). Children with symptomatic HIV infection can also have infection with unusual organisms (including; Cytomegalovirus, Candida, Cryptosporidium Parvum, Isopora Belli, Microsporidia (especially Enterocytozoon bienersi), Giardia lamblia, Cyclospora and Mycobacteria avium complex and Yersinia enterocolitica).

Clinical history

Ask about bile-stained vomiting, blood/mucous in diarrhoea, reduced urine output, altered level of consciousness, other affected family members, foreign travel (see below), previous GI problems and medication already received.

Foreign travel

Malaria must be looked for in a child recently returned from abroad with a fever and either vomiting or diarrhoea. It is particularly important to consider typhoid in a febrile child recently returned from abroad (see below). Other diagnoses to consider include amoebiasis, cholera, or helminth infection (if an eosinophilia is present).

Examination

The most important points are to assess the state of DEHYDRATION, and to identify whether there is any OTHER PATHOLOGY mimicking or accompanying gastroenteritis.

Dehydration

This is a clinical diagnosis. A recent clinic weight and evaluating urine output and osmolarity may be useful in assessing fluid loss. Hypernatraemic

dehydration can be very difficult to assess clinically.

Acidosis.

Children with severe HIV infection and diarrhoea often lose a lot of bicarbonate and develop a metabolic acidosis. These children will usually be drowsy, but other signs of dehydration may be masked. They may need oral/IV sodium bicarbonate supplementation.

Other pathology

“Not all children with d+v have gastroenteritis”

Particular care should be taken if the child is febrile and looks toxic, has bloody diarrhoea or a tender or distended abdomen. Diagnoses to consider include other infections (UTI, meningitis, pneumonia, septicaemia, OM) and surgical conditions.

Management

Admission

- * Admit children with:
 - Fever
 - Needing IV rehydration
 - Oliguria
 - Severe History (eg >5 loose stools/day)

Investigation

All children with HIV and diarrhoea should be investigated. If febrile they should have blood cultures and an MSU as well as:-

- A) 1 fresh stool for microbiology for MC+S
 - Ask for:
 - Stool microscopy, especially ova, cysts and parasites
 - trophozoites, cysts, spores and modified ZN
 - Stool culture for

E.coli, salmonella, shigella, campylobacter

AND

B) 1 fresh stool labelled for virology for EM and culture

Ask for:

Electron microscopy/ELISA/culture

It is important to write two forms and make sure two separate specimens are sent. Write the form yourself with "Diarrhoea and decreased CD4" as clinical details.

Send 1 stool/day to virology and bacteriology for 3 days if diarrhoea persists.

If the diarrhoea persists, discuss with an HIV paediatrician and consider:

Stool REDUCING SUBSTANCES

Stool C.difficile toxin

CMV PCR in blood

Blood and stool cultures for mycobacteria

Endoscopy and biopsy

Jejunal biopsy +/- colonoscopy should be considered in all culture negative persistent diarrhoea unresponsive to medical therapy. Biopsy material should go for histopathology (CMV IFT, fungi, AFB), microbiology (including mycobacterial culture) and viral culture.

Treatment

If the child is febrile and toxic get blood and urine cultures, then empirically treat with IV Ceftriaxone/Cefotaxime and await culture results.

If the child is well and the diarrhoea persists over 3 days with negative stool cultures then treat with oral Metronidazole 7.5 mg/kg/dose tds. Give at least one week's course.

If the diarrhoea still persists with negative cultures, consider changing to Ciprofloxacin. In an older child with chronic diarrhoea and HIV, use an antimotility agent (Loperamide).

Specific treatments include:

CMV - Gancyclovir

Mycobacteria - Ciprofloxacin, Rifabutin, Clarithromycin

Isospora - Septrin

Microsporidia - Metronidazole, Albendazole

Cryptosporidia – Nitazoxanide

Discuss these with an HIV paediatrician.

Nutrition

“it is important to return to normal diet quickly”.

It is critical to minimise the weight loss associated with acute infections.

Involve a paediatric dietician early, who can give oral supplements.

Severe weight loss can occur very quickly If diarrhoea persists over 5 days and weight is decreasing, then consider a hydrolysed milk feed.

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