Diarrhoea in children

Diarrhoea is one of the most common causes of illness and death in children worldwide. Despite the fact that improved sanitation and the use of oral rehydration therapy have significantly reduced the number of diarrhoea-related deaths in children, the estimated number of deaths is estimated to stand at about 2 million annually.
is a particularly bad choice for rehydration, as it not only contains high levels of sugar, but caffeine as well, which tends to aggravate dehydration.

Over-the-counter antidiarrhoeal agents e.g. loperamide, kaolin/pectin are not recommended for use in children with acute diarrhoea, since these agents could potentially do more harm than good. The emphasis of treatment is fluid and electrolyte replacement.

There is much confusion over what diet is best for a child with diarrhoea. Expert recommendations are that most children should be able to tolerate a regular diet, once adequate rehydration measures have been taken.
- Feed breast and bottle-fed infants normally during episodes of diarrhoea – A well-nourished child should be the aim, particularly where the infant is poorly nourished to begin with and where withholding of milk feeds may be even more detrimental to the infant.
- Eat small light meals – There is no need to fast unless the diarrhoea is accompanied by nausea and vomiting. Food should be encouraged as soon as the person wishes to eat. Feeding with cooked rice, a source of resistant starch has been found to reduce the severity of diarrhoeal illness with a reduction in mortality.
- High fat foods are best avoided as they are more difficult to digest. Milk does not have to be avoided, except if the child has a known allergy or intolerance to cow’s milk. It is not appropriate to give only clear liquids, such as juice and water – these do not have sufficient nutrients to make up for those lost through diarrhoea.

Treating a fever

Often, diarrhoea presents with other symptoms of infection, including a fever, which indicates a more systemic disease. Always bear in mind that a fever is actually one of the body’s natural defence mechanisms against invading organisms and that a low-grade fever does not need to be reduced immediately.

When a fever becomes high enough to run the risk of febrile convulsions or other complications in a child, some antipyretic treatment might be advisable to bring the temperature under control again.

Note: A child with an exceptionally high fever (temperature over 39°C for a fever over 38.5°C for more than 3 days) should always be referred to a doctor.

The medicine of choice for treating fever in infants and children is paracetamol e.g. Panado® (Calpol® supyp). Another possible option is ibuprofen (e.g. Nurofen® suspension). Both of these agents are effective in reducing a high fever in children, although ibuprofen may be somewhat more effective and has a slightly longer duration of action than paracetamol.

The use of aspirin is specifically avoided in children and adolescents because it carries the risk of developing Reye’s syndrome – a rare but life-threatening condition that causes inflammation of the brain.

Preventing diarrhoea and the spread of diarrhoeal illness

General hygiene measures are extremely important to prevent the spread of diarrhoeal illness:
- Extra care should be taken to wash hands thoroughly, using soap and water, paying special attention to finger tips, between fingers and the wrists. Hands should be washed after touching any dirty items or going to the bathroom, as well as before and after preparing and eating food.

Rotavirus infects almost all children by the age of 5 years, but severe, dehydrating gastroenteritis occurs primarily in children aged 3 to 35 months. The rates of infection in industrialised countries are estimated to be similar to those in developed countries – indicating that clean water supplies and increased hygiene and living conditions do not have a substantial impact on disease prevention.

- The Rotavirus vaccine, Rotarix® was recently launched in the South African market. The vaccine contains live attenuated rotavirus indicated for the prevention of severe rotavirus infection in young children. The vaccine schedule consists of 2 doses separated by at least 4 weeks. A major limitation to the vaccine is that it can only be given up to the age of 25 weeks, that is to say, a child should have had both doses before the age of 25 weeks. Safety and efficacy of the vaccine in children older than this has not been established.

The role of probiotics in acute diarrhoea

Probiotics are microorganisms that have beneficial properties for their host. Most are derived from food sources, especially cultured milk products. A number of organisms are classified as probiotics, including strains of Lactobacilli and Bifidobacteria, Clostridium butyricum, Streptococcus salivarius and Saccharomyces boulardii (e.g. Infelora 250®).

A number of studies have suggested the usefulness of these microorganisms in several gastrointestinal disorders, particularly in inflammatory bowel conditions, and some types of infectious diarrhoeas.

Not all probiotics can be considered equal, and benefits observed with one species cannot automatically be attributed to another. There is evidence to show that Lactobacilli and Bifidobacteria may be beneficial in reducing the diarrhoeal phase of rotavirus infections. There is somewhat less definitive evidence of their usefulness in antibiotic associated diarrhoea. While these probiotics may be beneficial in a child with diarrhoea, regular daily administration to a healthy child is not recommended.

Several studies have evaluated the usefulness of various probiotics in infectious diarrhoea. Results have indicated a modest benefit in reducing the overall duration of diarrhoea (by up to 30 hours) and found the probiotics to be safe, with no side effects reported. There is very little information, however, regarding the ideal type, dose and duration of treatment to achieve the desired effects in a specific infection. It is considered reasonable, in the face of available information, to recommend probiotics for children with suspected infectious diarrhoeal disease, acknowledging the limited data available and the modest expected benefits.

Warning signs – when to refer the child to the doctor

- Diarrhoea > 1 day occurring in infants under 1 year of age
- Diarrhoea > 2 days in children under 5 years
- Diarrhoea > 3 days in older children
- Patients presenting with symptoms of fever, severe vomiting, blood or mucus in the stool, severe abdominal pain, history of a recent (last 2 weeks or so) change in bowel habits, suspected adverse reaction to a medicine or recent travel abroad
- Infants with signs of moderate to severe dehydration i.e. limp, non-alert babies – Dehydration occurs quickly in infants and young children.
- Any behaviour changes including fatigue or decreased responsiveness.
- Individuals with signs of faecal impaction e.g. constipation alternating with overflow diarrhoea.

In summary

Acute diarrhoea in infants and children requires prompt management with oral rehydration therapy. The pharmacist’s assistant is in an ideal position to educate parents and care-givers on the most appropriate management of diarrhoea in children, emphasising referral pointers as well as the preventative measures to avoid further spread of the diarrhoeal illness.

References:
1. UpToDate Medical Database; Version 14.5, Current 2007
4. Merck Manual of Medical Information