Editorial

Antibacterial agents for infective diarrhoeal diseases of childhood: are we doing it right?

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It is generally appreciated that diarrhoeal diseases are an important cause of morbidity and mortality in children all over the world. However, major effects of these are seen in the developing world as well as in the developed countries. The costs of treatment in this broad group of conditions to the already stretched health services of the former and the economic burden to the respective populations are quite considerable. The use of oral rehydration therapy has helped a great deal towards a significant reduction of the dreadful mortality of this group of conditions.

Among the many causes of these diseases, microbes such as viruses, bacteria and protozoa play a key role. While some of the other types of diarrhoeal diseases are preventable by improvement in the sanitary standards and the general living conditions of a given population, those caused by infective agents remain the bane of the paediatrician. Even though the use of oral rehydration therapy has revolutionised the acute management of all types of diarrhoeal diseases, the current recommendations, especially the use of antibacterial agents, need critical appraisal.

Quite a significant proportion of diarrhoeas, especially in infants and those under two years of age, are due to viruses. Majority of these are caused by the rotavirus but legions of other viruses are also known to be among the causative factors[1]. The characteristic feature of these diseases is the watery nature of the stools. Although there is a wide spectrum of the severity of the symptoms of viral diarrhoeas in a given population of very young children, the condition is mostly self-limiting. There are no anti-viral drugs that are able to either terminate the disease or ameliorate the symptoms.

There is universal agreement that antibacterial agents have no place in the treatment of viral diarrhoeas. They do not shorten the duration of the illness, lessen the rates of hospitalisation or reduce hospital stay. Their haphazard and ill-advised use in these diseases in developing countries is however known to lead to the propagation of resistant bacterial organisms[2] especially by plasmid transfer mechanisms and alteration of the normal commensal flora of the gut. In addition, they are also incriminated in unusual prolongation of the illness. Doctors prescribe these drugs in good faith to try and quickly control the symptoms of the illness and "cure" the child but there is no scientific evidence whatsoever to support the practice. They certainly do not shorten viral diarrhoeas.

It is most lamentable that even now, very much against scientific evidence, ill-advised antibacterial therapy is seen in many paediatric units, out-patient departments and private general practices of this country. A noteworthy portion of the health budget of the public sector is spent on the provision of these drugs for a condition for which they are of very dubious value.

Even for bacterial diarrhoeas, the position is somewhat debatable. Bacillary dysentery with frequent bloody mucous diarrhoea is generally treated with antibacterials. These drugs are known to help in the control of acute manifestations of the disease. However, the major concerns of the illness are based on some of the troublesome complications of Shiga-toxin producing *Shigella dysenteriae* and verocytotoxin producing *Escherichia coli* O157:H7 gut infections. These are the dreaded encephalopathy and the haemolytic uraemic syndrome (HUS). Adequate and early hydration has been shown to reduce the incidence of the latter[3]. However, it is not at all certain that even early treatment with antibacterials either prevents or ameliorates either of these dreaded complications. It is thought that the vascular injury leading to HUS is likely to be well under way by the time infected patients are brought for treatment[4]. They do not prevent encephalopathy and have not been shown to prevent the development of HUS. There is evidence that antibiotic treatment of children with E. coli O157:H7 infection may increase the risk of HUS[5] and is contraindicated[6].

Perhaps one may use one's clinical judgement to use these agents in proven cases of dysentery for control of acute symptoms but the practice of blanket use of these drugs at the mere mention of either blood or

mucus is certainly not justified. It is worthy of note that the presence of blood streaking of the stools is not invariably diagnostic of bacillary dysentery.

The only diarrhoeal illness caused by a bacterial organism against which antibacterial drugs are consistently useful is cholera[7]. These drugs are known to relieve symptoms, shorten hospital stay and reduce the mortality in cholera. Even in this disease, appropriate therapy should be based on the sensitivity patterns of isolates.

Protozoal diarrhoeas such as those due to *Entamoeba histolytica* and *Giardia lamblia* definitely need to be treated with antibacterial agents. However, it must be stressed that these are rather rare causes of childhood diarrhoeal diseases in Sri Lanka.

There is sufficient anecdotal evidence to support the contention that there is striking over-prescribing of antibacterial agents for childhood diarrhoeal diseases in our country. This is particularly true for very young children with obvious viral diarrhoeas. This deplorable practice is quite surprising in view of the good facilities available to the medical community for continuing professional development and updating of useful knowledge.

Current recommendations on the optimal management strategies for childhood diarrhoeal diseases should not only be preached but should also be received and practised as well.

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