Acute Bacterial Dysentery in Children

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Dysentery is an infectious gastrointestinal disorder, characterized by inflammation of the intestines, mainly the colon. World Health Organization (WHO) defines dysentery as any episode of diarrhea in which there is blood in loose and watery stool. Dysentery can mainly spread among people through contaminated food and water as well as poor sanitation. There are several numbers of bacteria that can cause acute dysentery, including *Shigella, Salmonella, Campylobacter*, and *Escherichia coli* (*E. coli*) (1-3). Dysentery is a major cause of childhood morbidity and mortality, especially in developing countries in Africa, Asia, and Central and Latin America. Most dysentery cases in tropical areas are caused by *Shigella*; but in developed countries, they are usually caused by *Salmonella* (1, 2). Death rates as high as 6.2% have been reported during epidemics of *Shigella dysenteriae* type 1 (3). Use of effective antimicrobial treatments is important, especially for reduction of the prevalence rate of *Shigella* and other organisms causing dysentery in children. On the other hand, reduction of the bacterial load excreted by a child's stool also decreases the probability of fecal-oral transmission to close contacts, such as friends, members of the child's household, and neighbors (4). Antimicrobial therapy is very important in developing countries, where prolonged and recurrent episodes of dysentery can diminish the nutritional status and growth in affected children (3-5). Although, it is possible for some immune-component children to successfully fight against the infection without antibiotics and get a full recovery. However, WHO recommends that all the dysentery episodes should be treated with antibiotics, especially in younger children, aged people, and anyone with an immunodeficiency syndrome, because the chances of bacteremia and sepsis are higher in these groups (6, 7). It is also proposed that the bacteria isolated from the stool sample of a child with dysentery rarely relapse if the child has received a full-course treatment with one of the effective and sensitive antibiotics. Emergence of multidrug-resistant (MDR) *Shigella* spp. (resistance to more than two first-line oral drugs, such as ampicillin, co-trimoxazole, and ciprofloxacin) is of a growing concern in the world. The drug of choice for treatment of severe infections with these MDR strains is ceftriaxone (8-10). Meanwhile, the use of azithromycin rather than ceftriaxone as an empiric antibiotic for cases of severe dysentery prior to culture and sensitivity test results may be considered in areas where MDR strains are reported to minimize the morbidity associated with the disease (9, 10). WHO recommends treatment with ciprofloxacin (not for children less than eight years ols) or one of the three second-line antibiotics, pivmecillinam (pivmecillinam is the pivaloyloxymethyl ester of mecillinam and is only considered to be active against Gram-negative bacteria), azithromycin, and ceftriaxone (a third-generation cephalosporin) (8, 9). Therefore, since some bacteria can acquire resistance to antibiotics, drugs should be selected based on the resistance patterns prevalent in the community. It is estimated that the 99% reduction in diarrhea mortality is associated with the treatment of dysentery with ciprofloxacin, ceftriaxone or pivmecillinam and it may even be more important to perform antibiotic susceptibility test before the treatment (10-12). Therefore, dehydration is more likely to occur in children under one year old (particularly those under six months old), in infants who stopped breastfeeding due to illness, or in children with severe diarrhea and vomiting, and it is recommended to rehydrate them through oral or intravenous (IV) routes. The child should continue with a normal diet and usual drinks. In addition, the child should also be encouraged to drink extra fluids. However, fruit juices or fizzy drinks must be avoided, as they can worsen the diarrhea. For babies aged less than six months who are at increased risk of dehydration, breast or bottle feeds should be encouraged as normal. Hence, children are more likely to develop complications and even death. Prompt treatment with an effective antibiotic and rehydration are very important in children with dysentery.

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