TOPICAL ISSUES OF NEW DRUGS DEVELOPMENT

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Mortality from acute diarrhea is overall globally declining but remains high. Most estimates have diarrhea as the second cause of childhood mortality, with 18% of the 10.6 million yearly deaths in children younger than age 5 years.

Despite a progressive reduction in global diarrheal disease mortality over the past 2 decades, diarrhea morbidity in published reports from 1990-2000 slightly increased worldwide compared with previous reports. The vast majority of diarrhea-associated infant deaths were reported in 2005-2007, with 86% of deaths occurring among low-birthweight (< 2500 g) infants.

Furthermore, in countries in which the toll of diarrhea is highest, poverty also adds an enormous additional burden, and long-term consequences of the vicious cycle of enteric infections, diarrhea, and malnutrition are devastating.

Viral diarrhea is most common in young children. Rotavirus and adenovirus are particularly prevalent in children younger than 2 years. Astrovirus and norovirus usually infect children younger than 5 years. Yersinia enterocolitis typically infects children younger than 1 year, and the Aeromonas organism is a significant cause of diarrhea in young children.

Pharmacotherapy of dehydration due to diarrhea includes the following:

Minimal or no dehydration: rehydration therapy - not applicable. Replacement of losses: if less than 10 kg body weight - 60-120 mL oral rehydration solution for each diarrhea stool or vomiting episode; if more than 10 kg body weight - 120-140 mL oral rehydration solution for each diarrhea stool or vomiting episode.

Mild-to-moderate dehydration: rehydration therapy - oral rehydration solution (50-100 mL/kg over 3-4 h). Replacement of losses: if less than 10 kg body weight - 60-120 mL oral rehydration solution for each diarrhea stool or vomiting episode; if more than 10 kg body weight - 120-140 mL oral rehydration solution for each diarrhea stool or vomiting episode.

Severe dehydration: rehydration therapy - intravenous lactated Ringer solution or normal saline (20 mL/kg until perfusion and mental status improve), followed by
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