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REVIEW ARTICLE

Acute diarrhea: evidence-based management☆

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KEYWORDS
Acute diarrhea;
Gastroenteritis;
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Hydration;
Child nutrition

Abstract
Objectives: To describe the current recommendations on the best management of pediatric patients with acute diarrheal disease.
Data source: PubMed, Scopus, Google Scholar.
Data summary: There has been little progress in the use of oral rehydration salts (ORS) in recent decades, despite being widely reported by international guidelines. Several studies have been performed to improve the effectiveness of ORS. Intravenous hydration with isotonic saline solution, quickly infused, should be given in cases of severe dehydration. Nutrition should be ensured after the dehydration resolution, and is essential for intestinal and immune health. Dietary restrictions are usually not beneficial and may be harmful. Symptomatic medications have limited indication and antibiotics are indicated in specific cases, such as cholera and moderate to severe shigellosis.
Conclusions: Hydration and nutrition are the interventions with the greatest impact on the course of acute diarrhea.
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PALAVRAS-CHAVE
Diarreia aguda;
Gastroenterite;
Crianças;
Hidratação;
Nutrição infantil

Diarreia aguda: manejo baseado em evidências

Resumo
Objetivos: descrever as recomendações atuais sobre a melhor maneira de conduzir o paciente pediátrico com doença diarreica aguda.
Fonte dos dados: PubMed, Scopus, Scholar Google.
Síntese dos dados: Houve pouco avanço na utilização dos sais de reidratação oral (SRO) nas últimas décadas apesar de ser amplamente divulgado através de diretrizes internacionais. Vários estudos vêm sendo realizados na tentativa de melhorar a eficácia do SRO. Hidratação venosa com solução salina isotônica, infundida de forma rápida, deve ser indicada em casos de desidratação grave. A nutrição deve ser assegurada logo após a resolução da desidratação,

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sendo primordial para a saúde intestinal e imunológica. Restrições alimentares usualmente não são benéficas e podem ser prejudiciais. As medicações sintomáticas têm indicação restrita e antibióticos são indicados em casos específicos, cólera e shiguelose moderada a grave.
Conclusões: a hidratação e a nutrição continuam sendo as intervenções com melhor impacto sobre o curso da diarreia aguda.
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Introduction

Acute diarrheal disease (ADD) is a public health problem in many regions of the world, especially where poverty prevails. A model that aims to explain the incidence or mortality associated with the ADD involves a large number of variables (biological, environmental, socio-cultural) and is very complex. Conversely, a reductionist approach contributes little to the understanding and solution of the problem.[1,2]

The scientific community, over the past four decades, established a consensus on the most effective measures to reduce the incidence, morbidity, and mortality of ADD. Some measures aimed at reducing the incidence of diarrheal disease constitute interventions that are beyond the medical approach of the problem and are based on environmental condition improvement: water supply, adequate treatment of human waste, education, and food safety. Exclusive breastfeeding for at least 6 months and supplemented up to 2 years of age has a significant impact in reducing the disease incidence and severity. In the field of biomedicine, the development of a vaccine against rotavirus and universal vaccine coverage are important contributions that have an impact on ADD incidence, by decreasing the severe forms and the number of hospitalizations, thus reducing the risk of death.[3,4]

Regarding mortality, the therapeutic management with emphasis on oral rehydration therapy (ORT) and intravenous rehydration therapy (IRT), recommended since the 1970s, are milestones of twentieth-century medicine. In 1994, Ruxin[5] wrote an article commemorating the 25th anniversary of the ORT implementation and concluded (by observation, and expressing some pessimism): ''the formidable and persistent ignorance of the western medical establishment, which continues over twenty-five years after the discovery of ORT, is phenomenal.''

The 21st century has arrived, and despite several published articles showing the efficiency and effectiveness of ORT and IRT, it can be observed that ADD management is still being performed in ignorance of scientific evidence.[6,7]

In a recent article, Walker and Walker[2] presented a model, The Lives Saved Tool (LiST), and analyzed the impact of using oral rehydration salts (ORS), zinc, and antibiotics for dysentery on ADD mortality reduction. Low-osmolality ORS, the use of zinc in risk groups for persistent diarrhea, and use of antibiotics only in selected cases of dysentery all demonstrated a positive impact on the assessed outcomes.

The accumulated scientific knowledge on the best management of patients with ADD is extensive; however, researchers have observed physicians' poor adherence to the recommendations provided by international health organizations, as well as by medical societies, which periodically publish guidelines on the subject.[1,8–10]

Why – in spite of broad scientific evidence – do physicians choose to treat ADD based on obsolete conduct? This is the reason for the performance of this review. Even at present, the inappropriate use of ORT/IRT can be observed, as well as dietary guidelines that are almost iatrogenic, and even the indication of medications without any scientific basis.[4] Therefore, this review aimed to carry out a synthesis of the current knowledge on ADD management by focusing on ORT/IRT, diet during the acute diarrheal process, the judicious use of symptomatic medications, probiotics, zinc, and antibiotics.

ADD management

There is no consensus on the concept of ADD, but some basic aspects have been covered in several publications.[8,9,11] In this review, ADD is considered as a diarrheal episode that has the following characteristics: abrupt onset, presumably infectious etiology, potentially self-limited, with a course of less than 14 days, increased volume and/or frequency of stool, and fecal loss of nutrients (mainly water and electrolytes). Its major complications can thus be inferred (hydroelectrolytic disorders, nutritional deficits), providing the basis for its management.

From a clinical point of view, ADD can be classified as: watery diarrhea syndrome (which constitutes the vast majority of infectious diarrheal diseases), bloody diarrhea syndrome, and persistent diarrhea (when the episode lasts more than 14 days). Regardless of the causative agent, in the majority of diarrheal episodes of infectious etiology, therapeutic management is based on hydration maintenance and nutritional status.[1,4,9,12]

Regarding severity, ADD is classified as mild, moderate, or severe: mild when signs of dehydration are not observed; moderate when there are mild or moderate signs of dehydration and rehydration can be performed orally; and severe when it results in more intense dehydration with or without electrolyte disturbances, and requires intravenous therapy.[9,13]

Most ADD cases show mild or moderate severity and are not treated at health services, hence the importance of home treatment guidelines for diarrheal disease in order to prevent dehydration. Hospitals receive cases with more

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