



Impact on Pediatric Astroenterology & Hepatology

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Introduction

Childhood gastroenteritis is associated with considerable health costs. The natural clay dioctahedral smectite increases intestinal barrier function and is effective against infectious diarrhea in children in developing countries. The purpose of this work was to investigate the efficacy of smectite in Italian children with acute diarrhea of mild to moderate severity. A national, prospective, randomized, case-controlled study was performed in collaboration with primary care pediatricians. Children seen by pediatricians for acute gastroenteritis were treated with oral rehydration solution (ORS) alone or ORS with smectite.

Parents returned a form in which total duration of diarrhea, incidence of vomiting and fever, persistence of diarrhea for more than 7 days and hospital admissions were recorded. Eight hundred four children with acute diarrhea were randomly assigned to treated or control groups. Administration of smectite was associated with significant reduction of the duration of diarrhea, as judged by stool frequency and consistency. The incidence and duration of vomiting and fever were not different. Diarrhea lasted more than 7 days in 10% of treated and in 18% of control children ($P < 0.01$). Hospital admission was necessary in seven treated and six control children. No side effects were observed. Poor adherence to treatment regimens, which refers to the extent to which a person's behavior coincides with medical advice, is a significant problem across pediatric conditions. In fact, poor adherence has been deemed to be the primary cause of treatment failure in pediatrics. In pediatric gastroenterology and hepatology, most adherence research has focused on pediatric

inflammatory bowel disease (IBD) and pediatric liver disease. All study procedures were approved by the Institutional Review Board at Children's Mercy-Kansas City. Data were collected anonymously, and consent to participate was implied by voluntary participation of the study survey. There are several notable strengths to current adherence practices, starting first with the high proportion of participants who endorsed doing adherence monitoring as part of standard clinical care. It does seem that for many participants, adherence monitoring occurs only for a subset of patients, typically based on diagnosis or treatment regimen. Providers are encouraged to exercise caution when using patient/parent-report of adherence, as it is not uncommon for patients/parents to experience difficulty remembering missed doses, or to inflate adherence estimates in order to be viewed favorably by their medical providers. A multi-method approach to adherence assessment which combines subjective and objective measures, for example, self-report and pharmacy records, is likely to provide the most valid estimates of patient adherence. Another strength of current adherence practice is the high prevalence of providers who deliver targeted intervention to patients with poor adherence. This is done either by identifying and targeting adherence barriers and/or providing education to families about the importance of adherence, or about strategies to improve medication-taking.

Shared responsibility across disciplines for monitoring patient adherence and providing intervention is yet another strength of current adherence practices, as each member of the medical team can address different areas of need. Survey participants endorsed a number of barriers to conducting routine adherence monitoring in clinical care, which might partly explain participants' low ratings of the quality of both adherence monitoring and intervention in their practice. Such barriers might also explain why over 70% of respondents perceived having only "some" impact on patient adherence behaviors, despite perceiving adherence monitoring to be very important and as having significant impact on clinical outcomes. Despite high nonadherence rates in pediatric gastroenterology and hepatology, little is known about clinical practices around adherence to prescribed treatment regimens in this field. Improved understanding about current adherence monitoring and intervention practices is therefore an important step toward developing a more comprehensive, evidence-based, and systematic approach to promoting adherence in pediatrics.