

LETTER TO THE EDITOR

## WHO-ORS in Treatment of Shigellosis

Sir,

The role of oral rehydration solution (WHO-ORS) as an adjunct in the treatment of shigellosis needs to be reviewed because of the prevalence of different types of *Shigella* species causing varied clinical presentations, especially with regard to severity of dehydration. Use of an appropriate antimicrobial agent, along with a rehydration fluid (WHO-ORS), remains the cornerstone of therapy in management of symptomatic *Shigella* infection (1).

To our knowledge, very few clinical studies were conducted to assess the therapeutic need of WHO-ORS in *Shigella* infection, particularly in children. According to a study by Rabbani *et al.* (2), hydration was achieved with normal fluid and plain water intake in children and adults with shigellosis having frequent small evacuation of bloody mucoid stool. A community study in Bangladesh showed that only 25% of all patients suffering from dysenteric illness received ORS, in addition to antimicrobial agents and other supportive treatments (3). In Thailand, a recent study demonstrated that only a limited number of patients (n=21) in a large group with shigellosis having mild-to-moderate dehydration required treatment with WHO-ORS, and patients with moderate dehydration were benefited most (4).

In Bangladesh, a small study has recently been carried out in children suffering from shigellosis without obvious dehydration. The study was conducted based on the hypothesis that there may be subclinical deficit of electrolytes, including sodium and potassium, in patients with shigellosis in absence of clinically detectable dehydration. Such deficit may cause anorexia and impairment of general well-being, in addition to *Shigella* infection. The use of WHO-ORS alone may, thus, expedite the improvement of loss of appetite and sense of general well-being in these patients. Accordingly, the children were randomized, given either WHO-ORS (35 mL/kg.day, n=16) along with an antimicrobial agent or the antimicrobial agent alone (n=14). The study could not demonstrate any additional benefit with the use of WHO-ORS, in addition to the appropriate antimicrobial therapy, and untoward effects were not observed in either group. (AM Khan and ASG Faruque of ICDDR,B., unpublished observations).

Clinical spectrum of dehydration in shigellosis may vary; in most cases, dehydration is either absent or mild. Stoll *et al.*, in a study from surveillance at the International Centre for Diarrhoeal Disease Research, Bangladesh, found that 44% of 412 patients had no dehydration, 43% had mild dehydration, 12% had moderate dehydration, and only 1% had severe dehydration (5). Thus, in 87% of the patients with shigellosis, dehydration was not clinically significant.

Pathophysiology of dehydration in *Shigella* infection varies according to type of *Shigella* species. Therefore, identification of the type of *Shigella* species is important to understand the clinical situation where the use of WHO-ORS will be appropriate and beneficial. *Shigella flexneri* and *S. dysenteriae* type 1 infections are usually characterized by frequent evacuation of small amounts of faecal material mixed with mucus or blood. Other clinical features commonly include fever, marked anorexia, abdominal cramp, tenesmus, etc. Sometimes *S. dysenteriae* type 1 may present with watery stool initially followed by typical dysenteric stool where moderate dehydration is common; severe dehydration has even been found to be rarely associated with *Shigella* infections. Similarly, *S. sonnei* and *S. boydii* infections usually present with mild clinical symptoms, and the stool is usually watery, but little mucus or blood may occasionally be present. In *S. flexneri* and in most cases of *S. dysenteriae* type 1 infections, dehydration develops as a result of multiple factors, e.g. diminished intake of fluid due to anorexia, insensible water loss due to fever, and development of severe bacterial colitis associated with passage of mucus and blood. The use of WHO-ORS in every case may not, therefore, be appropriate, because WHO-ORS was originally formulated to treat cholera and other secretory diarrhoea with dehydration.

We have reviewed recent surveillance data of the ICDDR,B which showed a high prevalence of *S. flexneri*, followed by *S. dysenteriae* type 1; other types were occasionally observed, showing a similar pattern of dehydration indicated earlier. Thus, in *Shigella* infection in Bangladesh, passage of bloody mucoid or mucoid stool is a predominant clinical feature, and watery diarrhoea is infrequently seen. On the other hand, in industrialized countries, *S. sonnei* and *S. boydii* infections are common which usually present as asymptomatic or mild clinical disease.

In conclusion, we suggest that careful clinical assessment of *Shigella* cases be made with regard to providing or withholding treatment with the WHO-ORS. Further evaluations of other ORS formulations with low-electrolyte contents to treat dehydration in shigellosis may provide important therapeutic guidelines.

#### REFERENCES

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