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LETTER TO THE EDITOR

Re: Serum Zinc Concentrations in Children with Acute Bloody and Watery Diarrhoea

Sir,

I have two comments regarding the interesting study by Mahyar et al. published in the SQUMJ November 2015 issue. Firstly, apart from the two limitations addressed by the authors—failure to estimate serum zinc concentrations after patients had completed their course of treatment and the small sample size—I believe that there is another important limitation to this study. Giardiasis is highly prevalent in developing countries. It is commonly linked to chronic diarrhoea and malabsorption; available data indicate that giardiasis is the aetiologic agent in 7.0% of childhood cases of acute diarrhoea. In Iran, paediatric giardiasis still represents a substantial health threat, with an estimated prevalence of 10.6%. Moreover, giardiasis has been shown to be markedly associated with hypozincaeemia in the Iranian population. In Mahyar et al’s study, stool cultures were used to determine the causative pathogens in their studied population. No growth was seen in 32 (53.3%) patients while 28 (46.7%) patients were found to have bacterial diarrhoea caused by pathogenic Escherichia coli (n = 15), Shigella (n = 10) and Salmonella (n = 3). General stool examinations were not carried out prior to the cultures; this could have resulted in the exclusion of a significant number of patients with giardiasis-associated acute diarrhoea. Accordingly, this might affect the accuracy of Mahyar et al’s results.

Secondly, Mahyar et al. studied the correlation between serum zinc levels and various inflammatory and non-inflammatory variables. The study showed a non-significant correlation between these variables and serum zinc levels; thus, these variables could not be considered predictors of zinc deficiency in Iranian children with acute diarrhoea. This is an interesting observation as it contrasts with previously reported observations; Strand et al. studied the association between plasma zinc concentration and several clinical and biochemical variables in a cohort of Nepalese children with acute diarrhoea. The study revealed an association between axillary temperature and plasma zinc concentrations. As such, a reduction was seen in the mean plasma zinc concentration per degree of increased axillary temperature (0.59 µmol/L per °C). Reduced plasma zinc levels were also associated with elevated levels of C-reactive protein, dysentery and decreased plasma albumin levels. The study also found that there were increased levels of plasma zinc in children who were dehydrated compared to those who were not.

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References

Sir,

We thank you for your comments on our recently published article. As mentioned in our article, the main objectives of our study were to compare serum zinc levels in children with acute diarrhoea and in healthy control subjects, as well as to compare serum zinc concentration in children with acute watery versus bloody diarrhoea, regardless of the identification of aetiological factors such as rotavirus infection or giardiasis.

The diagnosis of acute diarrhoea, acute watery diarrhoea and dysentery was based on the definitions of the World Health Organization. In general, our goal was to prove that patients with acute diarrhoea, particularly acute bloody diarrhoea, have low concentrations of serum zinc. We aimed to suggest that zinc should be prescribed to all patients with acute diarrhoea regardless of their aetiologic factors. In developing countries, certain diagnostic facilities (including cultures, rapid diagnostic or polymerase chain reaction tests) for the diagnosis of aetiological agents are unavailable. Giardiasis can present as acute diarrhoea and the diagnosis is traditionally established by microscopic evidence of trophozoites or cysts in stool specimens. However, stool enzyme immunoassay or direct fluorescent antibody tests for *Giardia* antigens are the tests of choice for giardiasis. Under certain conditions, it may be necessary to use other diagnostic methods such as aspiration or biopsy of the duodenum or upper jejunum.

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References

