Effect of enteric parasitic infection on serum trace elements and nutritional status in upper Egyptian children

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Abstract:

Introduction: Enteric parasitic infections still be the cause of major health problems among Egyptian children as they have great morbid effect on their physical and cognitive development. Malnutrition makes children more prone to micronutrient deficiency and subsequently more vulnerable to parasitic infection. The present study aimed to identify the effect of intestinal parasitism on micronutrient serum level and children nutritional status. Materials and Methods: A case control study was carried out on children from 1 to 6 years old who were attending the Assiut University Children Hospital outpatient clinic, after parasitological stool examination they were divided into Group 1 (G1, n: 60) positive with enteric parasite and Group 2 (G2, n: 60) age and sex matched and free of parasites. Anthropometric measurements were expressed as weight for age (WFA), height for age (HFA), and weight for height (WFH) parameters. Serum zinc (Zn) and copper (Cu) were determined by atomic absorption spectrophotometer. Results: Intestinal parasitic infection rate was 55.7%; more commonly detected parasites were Giardia lamblia 28%, Cryptosporidium sp. 20%, and polyparasitism 18%. All children (G1 and G2) were underweight (WFA) while 63% of G1 were malnourished, either in the form of wasting (WFH) or stunting (HFA) or both aspects. Stunting and wasting were more dominant among children infected with G. lamblia and Cryptosporidium sp. and most of them were below 2 years old. Conclusions: Coincident decrease in serum Zn level and an increase of serum Cu was more prominent among G. lamblia and Cryptosporidium sp. patients. G. lamblia and Cryptosporidium sp. were found to be more associated with nonstandard children nutritional status beside to an altered micronutrient level.

Keywords:

Enteric parasites, Copper, Zinc, Children, Nutritional Status

Published In:

Tropical parasitology, vol 5 issue 1, 29-35