Trace Elements Status in Children Hospitalized with Pneumonia in Pyin Oo Lwin

Kyae Mhon Htwe[1], Khin Aye Gyi[2], Thida[1], Khin Mi Mi Lay[1], Aye Min Maw[1], Khaing Khaing Mar[1], Thandar Myint Thaw[1], Khin Phyu Phyu[1], Kyaw Zin Thant[3]

1. Department of Medical Research (Upper Myanmar)
2. No.1 Military Hospital (700-Bedded), Pyin Oo Lwin
3. Department of Medical Research (Lower Myanmar)

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Abstract

In Myanmar, acute respiratory tract infection is one of the five leading causes of morbidity and mortality in under-five children. Deficiency of trace elements has shown to increase incidence and severity of pneumonia. Therefore, this hospital and laboratory-based, cross-sectional, comparative study was aimed to identify trace elements status in children hospitalized with pneumonia. Six months to five years old 50 children hospitalized with pneumonia at 1/700 Military Hospital, Pyin Oo Lwin and 50 apparently healthy children with age, sex and nutritional status matched controls were enrolled. Serum zinc and copper levels were determined by using atomic absorption spectrophotometer. Mean serum zinc level among cases (39.25±29.6 µg/dl) was significantly lower than that of controls (63.92±35.5µg/dl). Mean serum copper level among cases (102.52±52.4 µg/dl) was significantly higher than that of controls (76.97±49.0 µg/dl). Mean serum zinc levels of both males and females patients were significantly lower than those of normal children. Mean serum copper level of female patients was significantly higher than that of control female group. Regarding the age groups, both mean serum zinc levels of patients' age under one year and above one year were significantly lower than those of control groups. Mean serum copper level of patients above one year of age was significantly higher than that of control group with the same age. Nutritional status was divided into normal, grade-I and grade-II according to Modified Gomez Classification. All three groups of patients had significantly lower mean serum zinc levels than control groups except grade-II groups. Grade-I patients had significantly higher mean serum copper levels than that of controls. Therefore, in this study, children suffering from pneumonia had decreased mean serum zinc and increased mean serum copper levels than age, sex and nutritional status matched controls. These results will be useful for prevention and management of childhood pneumonia.