

In hemodialysis patients, the decrease in blood zinc and selenium concentrations strongly influences life prognosis

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Abstract

Deficiency of essential trace elements are common in hemodialysis patients (HDP) . The purpose of this study was to investigate the relationship between blood zinc and selenium concentrations and life prognosis in HDP.

Blood zinc and selenium concentrations were measured by PIXE method for 340 patients (age 65 ± 12 years old) undergoing hemodialysis at our hospital. Patients were divided into 4 groups (survival group, died group within 0 to 2 years, died group within 2.1 to 4 years, died group within 4.1 to 6 years), and blood zinc and selenium concentrations were compared. We also compared low group of both zinc and selenium and low group of either zinc or selenium.

As a result, mean blood zinc and selenium concentrations were significantly lower in HDPs than in healthy subjects. Furthermore, mean blood zinc and selenium concentrations were significantly lower in the died groups than in survival group.

In low group of either zinc and selenium, 19% died within 2 years and 25% died within 6 years. In low group of both zinc and selenium, died 27% within 2 years and 55% died within 6 years.

Our data suggested that although the cause is unknown, in HDPs, the decrease in blood zinc and selenium concentrations strongly influenced their life prognosis.