**Ghada M. Galal1, Mahmoud Saif-Al-Islam1, Mohammed Abd Al-Ghafar Abd Al Rahman2, Mona M. Abd El Rhman1**

1Tropical Medicine Department, Sohag Medical Hospitals, Faculty of Medicine, Sohag University, Sohag, Eygpt

2Audiology Department, Sohag Medical Hospitals, Faculty of Medicine, Sohag University, Sohag, Eygpt

Minimal hepatic encephalopathy (MHE) is defined as hepatic encephalopathy (HE) without symptoms on clinical/neurological examination, but with deficits in some cognitive areas that can only be measured by neuropsychometric testing.

**Aim:** Our aim was to study serum zinc levels in cirrhotic patients with and without MHE and correlate it with the results of neuropsychological tests and P300 event related potential.

**Patients and Methods:** Fifty-five patients with liver cirrhosis were recruited for the present study. All patients were subjected to full history taking, clinical examination, abdominal ultrasonography, laboratory investigations including liver function tests and serum zinc, psychometric studies (line tracing test and serial dotting test) and P300 event related potential. According to the results of psychometric studies and P300 event related potential, the patients were divided into 3 groups in addition to the control group.

**Results:** Among the 55 patients included in the study, 30 patients had no clinical evidence of HE and 25 patients had overt HE with different grades. In patients with no clinical evidence of HE, psychometric tests and P300 event related potential revealed that 13 patients had MHE, while 17 had no HE. There were significantly lower serum zinc levels in patients with MHE and in cirrhotic patients without HE compared with the healthy controls. Also, zinc levels were significantly lower in higher grades of hepatic encephalopathy.The mean P300 latency was a significantly prolonged in patients with MHE than no HE and controls. Serum zinc levels showed positive correlation with serum albumin levels and inverse correlation with serial dotting test and P300 latency.

**Conclusion:** Reduced serum zinc level and prolonged P300 latency can serve as predictors of minimal hepatic encephalopathy in cirrhotic patients. Zinc deficiency is common in cirrhotic patients with MHE. These findings may have important prognostic and therapeutic implications in MHE and overt HE patients with zinc deficiency.

**Disclosure:** we recommend using serum zinc level as a predictor for minimal hepatic encephalopathy.



**Figure (1): Serum zinc levels in the studied groups. Serum zinc levels were significantly lower in higher grades of hepatic encephalopathy (F = 5.301, P = 0.001).**

**Table (1): Comparison of age, sex, neurological tests, and serum zinc between patients with No HE, MHE, and healthy controls.**



**Table (2): Correlation between serum zinc and some laboratory data, psychometric tests (serial dotting and line tracing tests) and P300 event related potential**

