Alterations in blood ammonium level and psychometric test in patients with liver cirrhosis after a tempe diet

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Abstrak

Background

Hepatic encephalopathy is found in 50-70% cases of liver cirrhosis. Management of hepatic encephalopathy is based on the hypothesis of ammonia and false neurotransmitters. A vegetable diet is the diet of choice, since vegetable proteins have a high biological value, contains non-ammonigenic essential amino acids, and contains fiber. The results of soy fermentation by Rhizopus sp can increase the nutritional value to make it easier for body digestion.

Study aim

To determine improvements in hepatic encephalopathy by measuring the ammonium level and determining the psychometric test in patients with liver cirrhosis receiving a tempe diet compared to those receiving a liver diet (conventional diet).

Method

This is a random open clinical trial with a proportional stratification according to the Child Pugh criteria. Study subjects are patients with liver cirrhosis who are hospitalized at the Internal Medicine Ward and ambulatory patients at the out-patient Gastro-hepatology Polyclinic of Dr. Sarjito Public General Hospital, from January 1999 to May 2000. The trial was conducted for 20 days, where the first (trial) group was given a tempe diet, while the second (control) group was given liver diet Will (conventional). Measured outcomes include peripheral blood ammonium level, and psychometric test using the Numeric Connection Test (NCT).

Results

In the first group, we found a significant reduction of ammonium level in Child-Pugh A patients and a non-significant reduction in Child-Pugh B/C patients, a non-significant psychometric test improvement in Child-Pugh A patients, and significant psychometric test improvement in Child-Pugh B/C patients. In group II: there is no significant difference in the changes in ammonium level or psychometric test in patients from both Child-Pugh categories.

Conclusion

A 20-day tempe diet can reduce ammonium levels and improve results on the psychometric test. Key words: liver cirrhosis, hepatic encephalopathy, tempe diet, numeric connection test, Child-Pugh criteria