

Correlation between branched chain amino acids to tyrosine ratio and child pugh score

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Abstrak

Background: The determination of branched chain amino acids (BCAA) to tyrosine ratio (BTR) was available in making differentiation of chronic hepatitis from liver cirrhosis, because there was a strong association between BTR and staging (fibrosis) scores. Branched chain amino acids to tyrosine ratio have a correlation with Fischer ratio and the examination is easier because it can be done by enzymatic assay.

Materials and Methods: To evaluate the correlation between BTR and Child-Pugh score, we examined the amino gram of 52 liver cirrhosis patients consisted of 26 Child-Pugh A, 19 Child-Pugh B, and 7 Child-Pugh C. The examination of amino gram was done by High Pressure Liquid Chromatograph (HPLC) analyzer. Branched chain amino acids to tyrosine ratio were compared to Child-Pugh score, albumin, ammonia level, number connection test to Fischer ratio.

Results: Significant differences in BTR among Child-Pugh A, B, C were observed (Child-Pugh A 7.75 ± 1.2 ; Child Pugh B 6.0 ± 1.23 and Child Pugh C 4.38 ± 3.14 ($p = 0.000$)). Branched chain amino acids to tyrosine ratio had a weak correlation with albumin ($r = -0.292$; $p = 0.036$), ammonia level ($r = 0.376$; $p = 0.006$) and strong correlation with Fischer ratio ($r = 0.818$; $p = 0.000$). There was no significant correlation between BTR and number connection test.

Conclusion: These results showed that the determination of the molar ratio of branched chain amino acids to tyrosine well reflected the severity of liver cirrhosis and it can be used as a substitute of Fischer ratio.