

The GPR is an independent predictor of the development of HBV-related HCC

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Background: Recently, gamma-glutamyltranspeptidase (GGT)-to-platelet ratio (GPR) has been proposed as a non-invasive surrogate for liver biopsy in assessing the degree of liver fibrosis. The aim of this study investigate whether GPR can predict the forthcoming development of hepatocellular carcinoma (HCC) in patients with chronic hepatitis B (CHB). **Methods:** Between 2006 and 2012, patients with CHB and available GPR were retrospectively recruited. The study population was stratified into three risk groups according to pre-defined GPR cutoff values (GPR < 0.32 as low risk group, GPR 0.32-0.56 as intermediate risk group, and GPR >0.56 as high risk group). The prognostic value of FIB-4 and aspartate transaminase-to-platelet ratio index (APRI) was also tested. **Results:** A total of 1,109 patients (595 men and 514 women) with CHB were recruited. The mean age of the study population was 49 years. During the follow-up period (median 32 months, interquartile range 18-56 months), 69 (7.7%) patients experienced HCC development. Patients with HCC development showed high alpha-fetoprotein (AFP) ($p=0.001$), total bilirubin ($p=0.003$) and low albumin level ($p<0.001$). Together with age, hypertension and diabetics, multivariate analysis identified GPR as an independent predictor of HCC development [$p<0.001$; Hazard ratio(HR), 1.002; 95% confidence interval (CI), 1.001-1.003]. Furthermore we adjusted other noninvasive markers such as FIB-4 and APRI, FIB-4 was also significant predictor [$p<0.034$; Hazard ratio(HR), 1.47; 95% confidence interval (CI), 1.029-2.09], but not APRI. Using proposed cut-off value of previous study, we subdivided the patients into 3 groups: Low (<0.32), intermediate (0.32-0.56), and high group (> 0.56). The GPR values showed statistically significant differences as the risk of developing HCC increases with increasing GPR values (log-rank test, $p<0.001$). **Conclusions:** The GPR index was predictive of HCC development in patients with CHB. However, the predictive value should be compared to several recent non-invasive markers such as transient elastography.

The effect and safety of Cordyceps militaris in Korean adults who have mild liver dysfunction

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Introduction: Cordyceps militaris, an edible mushroom in the category of ascomycetes, has been used for diverse purposes, including enhancement of immunity, activation of basal metabolism, recovery from fatigue, and improvement of liver and renal functions, mainly in East Asian regions, including Korea and China. While diverse types of animal testing on the effect of C. militaris on liver function have been conducted, almost no testing has been conducted in human beings. Therefore, we studied the effect of C. militaris on liver function and its safety in human being. **Methods:** The aim of this single center, randomized, double blinded, placebo controlled clinical trial was to determine the effects and safety of C. militaris for Korean adults with mild liver dysfunction. The participants were 20 to 65-year-old male and female adults with ALT of 1.5 to 3 times the upper limit of normal. **Results:** In analysis of the liver CT scan at 8 weeks after administration compared to baseline, the mean ratio of change of HU of 8 segments of liver increased by an average of 21.43±45.11% in the C. militaris group and 9.64±11.41% in the placebo group, and showed a statistically significant difference (two sample *t*-test $p=0.0987$). **Discussions:** Low density on liver CT scan indicates accumulation of fat, such as triglyceride, in hepatocytes¹⁴, causing failure of hepatocytes and can lead to fibrosis or cirrhosis if lasting a long time¹⁵. In this study, the HU of the liver CT scan showed significant improvement in the C. militaris group compared to the placebo group, as a result of ingestion of C. militaris extract for 8 weeks by Korean adults with mild liver dysfunction. These results may be caused by a suppression effect of C. militaris extract on accumulation of fat in hepatocytes. This study is meaningful in that liver CT scan was used for functional testing. As a result, C. militaris extract was used safely in patients with mild liver dysfunction as a functional food, and is expected to protect against progression of fatty liver or cirrhosis caused by suppression of lipid accumulation in hepatocytes.