

The Effectiveness of Probiotics in the Treatment of Minimal Hepatic Encephalopathy Among Patients with Cirrhosis: An Expanded Meta-Analysis

Authors : Erwin Geroleo, Higinio Mappala

Abstract : Introduction Overt Hepatic Encephalopathy (OHE) is the most dreaded outcome of liver cirrhosis. Aside from the triggering factors which are already known to precipitate OHE, there is growing evidence that an altered gut microbiota profile (dysbiosis) can also trigger OHE. MHE is the mildest form of hepatic encephalopathy(HE), affecting about one-third of patients with cirrhosis, and close 80% of patients with cirrhosis and manifests as abnormalities in central nervous system function. Since these symptoms are subclinical most patients are not being treated to prevent OHE. The gut microbiota have been evaluated by several studies as a therapeutic option for MHE, especially in decreasing the levels of ammonia, thus preventing progression to OHE Objectives This study aims to evaluate the efficacy of probiotics in terms of reduction of ammonia levels in patient with minimal hepatic encephalopathies and to determine if Probiotics has role in the prevention of progression to overt hepatic encephalopathy in adult patients with minimal hepatic encephalopathy (MHE) Methods and Analysis The literature search strategy was restricted to human studies in adults subjects from 2004 to 2022. The Jadad Score Calculation was utilized in the assessment of the final studies included in this study. Eight (8) studies were included. Cochrane's Revman Web, the Fixed Effects model and the Ztest were all used in the overall analysis of the outcomes. A p value of less than 0.0005 was statistically significant. Results. These results show that Probiotics significantly lowers the level of Ammonia in Cirrhotic patients with OHE. It also shows that the use of Probiotics significantly prevents the progression of MHE to OHE. The overall risk of bias graph indicates low risk of publication bias among the studies included in the meta-analysis. Main findings This research found that plasma ammonia concentration was lower among participants treated with probiotics ($p < 0.00001$.) Ammonia level of the probiotics group is lower by $13.96 \mu\text{mol/}$ on the average. Overall risk of developing overt hepatic encephalopathy in the probiotics group is shown to be decreased by 15% as compared to the placebo group Conclusion The analysis showed that compared with placebo, probiotics can decrease serum ammonia, may improve MHE and may prevent OHE.

Keywords : minimal hepatic encephalopathy, probiotics, liver cirrhosis, overt hepatic encephalopathy

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