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The efficacy of carvedilol vs. propranolol in decreasing portal hypertension among cirrhotic patients - A meta-analysis

Higinio T Mappala and D K Gurung

Jose Reyes Memorial Medical Center, Philippines

Background: Despite advances in management of acute variceal bleeding, the hospital mortality of cirrhotic patients remains as high as 20%. It has been established that hemodynamic response to drug treatments either with propranolol or nadolol alone or with a beta-blocker in combination of propranolol and nitrates. A decrease in hepatic venous pressure gradient (HPVG) to 12 mm HG or 20% is of clinical significance in reducing complications related to liver cirrhosis. Mortality increases when portal hypertension is not addressed therapeutically.

Aim: Aim of this study is to compare the hemodynamic effect of carvedilol vs. propranolol in cirrhotic patients in reducing portal hypertension measured in terms of hepatic venous pressure gradient.

Materials & Methods: Meta-analysis and randomized control trials were extracted from different sources, from PubMed, Embase, Cochrane Library, Google, and Science Citation Index (ISI Web of Science), *BMJ*, Best practice, Cochrane, GastroHep, Medscape, and other web sources, comparing carvedilol and propranolol in cirrhotic patients. 14 articles were searched and reviewed and after exclusion, four articles with a total of 28 patients were included, whose primary outcome is a hemodynamic response, a decrease in hepatic venous pressure gradient (HVP) induced by the respective drugs. Patients (N=38) received carvedilol (N=21) at a dose range of 6.5 to 50 mg per day and propranolol dose at 10 mg-320 mg per day.

Results: The forest plot showed results in favor of carvedilol, which reduced HVP by 19% compared to propranolol, which reduced HPVG by 12% from baseline (p value=0.0004).

Conclusion: The meta-analysis shows that carvedilol is superior to propranolol in decreasing HVP - 19% and 12% respectively (p value of 0.0004). This may have significant clinical implications in terms of reducing complications due to liver cirrhosis, like variceal bleeding in portal hypertensive patients.

Biography

Higinio Mappala is currently working as an Associate Professor at Department of Internal Medicine-Gastroenterology-Clinical Nutrition-Clinical Toxicology, Jose Reyes Memorial Medical Center in Philippines. He graduated at University of Santo Tomas (UST), College of Medicine. He is the member of Hepatology Society of the Philippines and Philippine Society of Enteral/Parenteral Nutrition. He has published numerous research papers and articles in reputed journals and has extended his valuable service towards the scientific community with his extensive research work.

genemapmd@yahoo.com

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