

Role of von Willebrand Factor Antigen as Non-Invasive Biomarker for the Prediction of Portal Hypertensive Gastropathy in Patients with Liver Cirrhosis

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Abstract : Background/aim: Recently, the Von Willebrand factor antigen (vWF-Ag) has been identified as a new marker of portal hypertension (PH) and its complications. Few studies talked about its role in the prediction of esophageal varices. VWF-Ag is considered a non-invasive approach. In order to avoid the endoscopic burden, cost, drawbacks, unpleasant and repeated examinations to the patients. In our study, we aimed to evaluate the ability of this marker in the prediction of another complication of portal hypertension, which is portal hypertensive gastropathy (PHG), the one that is diagnosed also by endoscopic tools. Patients and methods: It is about a prospective study, which include 124 cirrhotic patients with no history of bleeding who underwent screening endoscopy for PH-related complications like esophageal varices (EVs) and PHG. Routine biological tests were performed as well as the VWF-Ag testing by both ELFA and Immunoturbidimetric techniques. The diagnostic performance of our marker was assessed using sensitivity, specificity, positive predictive value, negative predictive value, accuracy, and receiver operating characteristic curves. Results: 124 patients were enrolled in this study, with a mean age of 58 years [CI: 55 - 60 years] and a sex ratio of 1.17. Viral etiologies were found in 50% of patients. Screening endoscopy revealed the presence of PHG in 20.2% of cases, while for EVs they were found in 83.1% of cases. VWF-Ag levels, were significantly increased in patients with PHG compared to those who have not: 441% [CI: 375 - 506], versus 279% [CI: 253 - 304], respectively ($p < 0.0001$). Using the area under the receiver operating characteristic curve (AUC), vWF-Ag was a good predictor for the presence of PHG. With a value higher than 320% and an AUC of 0.824, VWF-Ag had an 84% sensitivity, 74% specificity, 44.7% positive predictive value, 94.8% negative predictive value, and 75.8% diagnostic accuracy. Conclusion: VWF-Ag is a good non-invasive low cost marker for excluding the presence of PHG in patients with liver cirrhosis. Using this marker as part of a selective screening strategy might reduce the need for endoscopic screening and the cost of the management of these kinds of patients.

Keywords : von willebrand factor, portal hypertensive gastropathy, prediction, liver cirrhosis

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