Editorial

HVPG as a Predictor of Mortality in Non-Critically-Ill Cirrhotic Patients

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► See the article “The New Cutoff Value of the Hepatic Venous Pressure Gradient on Predicting Long-Term Survival in Cirrhotic Patients” in volume 34, number 33, e223.

Portal hypertension (PH) is defined as an increased portal venous pressure gradient above 5 mmHg, and is closely related to complications and mortality of cirrhosis.¹ In particular, PH is greatly important before the onset of decompensation state where the degree of PH is well correlated to the prognosis. Portal pressure is known to be more useful in predicting development of complications of cirrhosis in chronic liver disease than the degree of fibrosis observed in liver biopsy. Direct measurement of portal pressure is excessively invasive and no longer used in clinical practice. Instead, because hepatic venous pressure gradient (HVPG) is safe, reproducible, and relatively less invasive, it is most widely used and standard test that reflects portal pressure. Recently, HVPG has been used in variety of fields such as diagnosis and prognosis of cirrhosis, risk stratification, monitoring therapeutic response of beta-blocker, and prediction of development of hepatocellular carcinoma.²

The HVPG value is mainly used for classifying the stage and sub-stage of liver cirrhosis. Generally, it is considered to be clinically significant portal hypertension (CSPH) when HVPG is 10 mmHg or above.¹ CSPH is associated with an increased risk of developing varices, and clinical decompensation such as ascites, variceal hemorrhage, and encephalopathy. So far, HVPG cut-off values are derived from the studies of varices or clinical decompensation. There are a few studies on the relationship between HVPG and mortality in which an HVPG above 16 mmHg is suggested as useful cut-off value to predict mortality. However, these studies were mainly performed in decompensated patients, and mostly analyzed as a result of secondary outcome.^{3,4}

In the study by Kim et al.⁵ published in this issue of *Journal of Korean Medical Science*, the authors confirmed in a large cohort of non-critically-ill cirrhotic patients that new categorizing HVPG value (< 13 mmHg, 13–20 mmHg, > 20 mmHg) showed better prediction in mortality than traditional HVPG cut-off value (< 10 mmHg, 10–16 mmHg, > 16 mmHg). The prediction power of new categorized hemodynamic stage (HS) was further improved especially in patients with intermediate Model for End-stage Liver Disease score and hypoalbuminemia. However, the stratification of decompensation according to the presence of variceal hemorrhage or ascites was not helpful for discriminating the prognosis. This study by Kim et al.⁵ reinforces the clinical importance of HVPG and the cut-off values used for the new classification of HS might be helpful in estimating the severity of PH in real clinical practice.

Previously, the cut-off value of HVPg associated with mortality was as follows; i) > 16 mmHg: increased risk of mortality, ii) > 22 mmHg: increased mortality in acute severe alcoholic hepatitis.⁶ These studies were only performed in western countries, furthermore, these results appear to be lacking in evidence, because they were retrospective studies and had relatively fewer patient numbers. The significance of the study by Kim et al.⁵ can be elucidating the relationship between HVPg and mortality in large-scale Asian patients. However, there are some considerations in interpreting this study. First, as the authors noted, the new classification of HS is not validated internally as well as externally, so it is not yet generally applicable to all cirrhotic patients. Second, the clinical implications of HVPg in terms of assessing prognosis might be reduced in decompensated cirrhosis, because hepatic insufficiency seems to affect prognosis greater than PH in this clinical stage. Lastly, because of the cross-sectional design, it is difficult to interpret other risk factors that may affect mortality other than HVPg.

HVPg might have several clinical uses in the context of mortality. However, it requires further studies to establish which patients would benefit most likely from HVPg measurement, and which cut-off value has the greatest clinical significance for predicting mortality.

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