ABST-0620

Tailored Diagnostic Algorithm Of Clinically Significant Hepatopulmonary Syndrome In Pre-transplant Patients

SOLA LEE, KWANG-WOONG LEE*, Su Young HONG, Nam-Joon YI, Jeong-Moo LEE, YoungRok CHOI, Sukkyung HONG, Kyung-Suk SUH

Surgery, Seoul National University Hospital, REPUBLIC OF KOREA

Background : Hepatopulmonary syndrome (HPS) is defined as arterial deoxygenation in chronic liver disease patients with intrapulmonary vasodilatation, evident in contrast-enhanced echocardiography or lung perfusion scan. Prevalence is around 5-35%, and various threshold values defining arterial oxygenation have been reported from partial pressure of oxygen in the arterial blood of 70 or 80 mmHg. We aim to determine different HPS prevalences from echocardiography and lung perfusion scans and establish a tailored algorithm for the diagnosis of clinically significant hepatopulmonary syndrome in pre-transplant patients.

Methods : From January 2015 to December 2020, 699 adult patients underwent liver transplantation at Seoul National University Hospital. We analyzed 442 patients who had transthoracic contrast echocardiography tested for detection of pulmonary vasodilatation and blood gas analysis as preoperative work-up for liver transplantation.

Results : Two hundred and thirty-nine patients showed positive on agitated saline test (54.1%), and 192 patients who underwent lung perfusion scans showed positive hepatopulmonary shunt in 9 patients (4.7%). From ROC analysis, the areas-under-the curve of partial pressure of oxygen (PaO2) and alveolar-arterial oxygen pressure difference (A-a DO2) for predicting positive agitated saline test were 0.550 and 0.586, respectively. From ROC analysis, the areas-under-the curve of PaO2 and A-a DO2 for predicting positive lung perfusion scan were 0.825 and 0.858. PaO2 and A-a gradient significantly correlated with hepatopulmonary shunt on lung perfusion scan at the cut-offs of 76.3 mmHg and 36.25 mmHg, respectively. The positive predictive value was higher than echocardiography (80 vs. 30 in lung perfusion scan). The negative predictive value was higher in the lung perfusion scan (99.5 vs. 48.5 compared to echocardiography).

Conclusions : In addition to contrast-enhanced echocardiography, selective patients should undergo lung perfusion scans based on alveolar-arterial oxygen pressure difference for a tailored and cost-effective diagnosis of hepatopulmonary syndrome in patients undergoing liver transplantation.

Corresponding Author : **KWANG-WOONG LEE** (kwleegs@gmail.com)