

Anaesthesia & Peri-operative Management

Perioperative management of liver transplantation for severe hepatopulmonary syndrome

Li-Ying SUN

Hepatopulmonary syndrome (HPS) consists of progressive hypoxemia and a series of pathophysiological changes caused by abnormal expansion of pulmonary arteriovenous vessels, leading to mismatch in perfusion and ventilation, and can occur in patients with chronic liver disease and/or portal hypertension. Currently, liver transplantation (LT) is considered the most effective treatment for HPS.

The incidence of HPS has been reported variably. We retrospectively analyzed the incidence of HPS and the efficacy of liver transplantation for HPS in patients waiting for LT at our center, including patients who were on the liver transplant waiting list from January 1, 2022 to December 31, 2022. A total of 274 patients were entered into the LT waiting list, 167 patients were excluded without a diagnosis of HPS, and 43 patients were excluded because they had hypoxemia but did not complete all tests. Ultimately 37 patients were with a definite diagnosis of HPS, 17 of whom received LT and 20 of whom did not. There was a significant difference between the survival rate of transplanted and non-transplanted patients with moderate and severe HPS, which were 87.50% and 37.50%, respectively.

Perioperative management plays a very critical role in the postoperative survival of patients with severe HPS. Higher FiO₂ and lung-protective ventilation are used to ensure that less hypoxemia occurs during the operation. After LT, Trendelenburg position, early extubation, ephedrine inhalation and intravenous methylene blue can be used, and infection prevention is very important to avoid the aggravation of hypoxemia, and when there is uncorrectable refractory hypoxemia, ECMO can be a life-saving measure.

Patients with severe HPS have a poor prognosis if they do not undergo LT. Therefore, when patients present with hypoxemia symptoms and are diagnosed with HPS, they should be entered into the transplant waiting list as early as possible.