Medical Xpress

Some receive unnecessary prioritization for liver transplantation, study says

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Patients waiting for liver transplants who develop hepatopulmonary syndrome (HPS), a lung disorder associated with end-stage liver disease, are eligible to move up on the wait list. In a new paper published in *Gastroenterology*, however, Penn Medicine researchers argue the so-called "exception points" given to these patients award some HPS patients unnecessary priority over others on the list, which includes about 17,000 patients.

The current U.S. transplant allocation system prioritizes patients based on medical urgency using the Model for End Stage Liver Disease (MELD) score, which takes into account the expected three-month survival due to end-stage liver disease, but does not consider other, unrelated medical complications. As a result, a system that allows wait-list candidates with certain conditions, HPS among them, to be eligible for exception points to increase their waitlist priority has been developed.

"To examine the impact of HPS MELD exception points on outcomes, we examined the relationship between patients' blood oxygen levels and outcomes in a national cohort of patients who received HPS exception points, and compared survival in HPS vs. non-HPS patients," says David Goldberg, MD, MSCE, instructor of Medicine at the Perelman School of Medicine of the University of Pennsylvania and lead author on the study.

HPS is found in approximately 20 percent of patients awaiting liver transplant and is associated with a worse health-related quality of life.

The condition is known to double the risk of death among patients evaluated for liver transplantation.

The Penn researchers looked at data from February 2002, the date the exception point program commenced, to December 2012. During this time, 973 patients on the liver transplant list received HPS exception points. While post-transplant survival was similar in HPS vs. non-HPS patients, post-transplant survival in HPS patients varied based on the severity of pre-transplant oxygen saturation levels.

The team found that patients with the poorest oxygen saturation levels (lower than 44 mm Hg) had a significantly lower three-year post-transplant patient survival rate.

Comparatively, significantly more non-HPS waitlisted patients, who did not receive exception points, died on the waitlist or within 90 days of waitlist removal, while a great proportion of HPS waitlist candidates were transplanted (73 percent vs. 43 percent). In addition, the study showed that only 49 percent of HPS transplant recipients had clear evidence of clinical indications for transplantation aside from HPS, as compared with 89 percent of non-HPS transplant recipients.

The findings refute recent reports and demonstrate an association between pre-transplant oxygen levels and post-transplant mortality, suggesting that the criteria for doling out exception points be adjusted based on patients' oxygenation, and suggesting an over-prioritization of all HPS patients in the current system.

This study represents the largest analysis of liver transplant waitlist candidates with HPS to date.

"These data, we hope, can provide some guidance to UNOS, as the exception point policy comes under revision," says Goldberg. "As organs

are a scarce resource, we want to make it easier for the [patients](#) in the most urgent need to be prioritized as such, according to evidence-based criteria."

Provided by University of Pennsylvania School of Medicine