Digital International Liver Congress 2020: A lifeline for liver transplant patients on waiting list as new model reduces mortality in Europe

Wednesday 26 August, 2020

Digital ILC 2020: European study reports that prioritizing patients for liver transplantation using MELD-Na could reduce 90-day waiting-list mortality compared with current practice.

EUROPEAN ASSOCIATION FOR THE STUDY OF THE LIVER (EASL)

27 August 2020: Prioritizing patients for liver transplantation using the Model for End-stage Liver Disease Sodium (MELD-Na) score, instead of the more commonly used MELD score, could increase the chances of high-risk patients receiving a transplant and reduce the risk of dying while on the waiting list, according the results of a large study using data from the Eurotransplant network. Researchers from Leiden University Medical Center in the Netherlands evaluated more than 5,000 patients with chronic liver disease who had been allocated to the Eurotransplant liver waiting list using the MELD score, and found that more than one-quarter of those who died within 3 months of being listed might have received a transplant if the MELD-Na score had been used instead.

The MELD score, which estimates mortality risk for patients with end-stage liver disease using laboratory variables, has been used to prioritize patients on liver transplant lists for almost 20 years.[1,2] Although MELD has been very successful in prioritizing patients,[1] it does not accurately reflect the risk of death in patients with hyponatremia (low sodium levels), which is an important predictor of mortality in patients on liver transplant lists.[3,4] The MELD-Na score, which includes serum sodium in the risk calculation, was adopted in the United States in 2016 for liver transplant prioritization,[5] but is not yet used routinely across Europe.

To test whether the use of the MELD-Na score in the Eurotransplant region (which includes Austria, Belgium, Croatia, Germany, Hungary, Luxembourg, the Netherlands, and Slovenia) could improve outcomes, the Leiden team evaluated 5,223 patients who were allocated onto the Eurotransplant liver transplant waiting list between 2007 and 2018 using their MELD scores. These patients were followed from their first listing to the time of delisting or until 90 days after listing. As part of the study, each patient was reclassified retrospectively based on their MELD-Na score, allowing an estimation of the number of lives saved if MELD-Na allocation had been used.

According to Dr Ben Goudsmit from Leiden University Medical Center, who presented the study results at this year's Digital International Liver Congress™, a large proportion (40%) of patients on the transplant waiting list had hyponatremia, and these patients had a three-fold increased risk of dying within 90 days of being listed.

'We also found that, if the MELD-Na score had been used to prioritize patients instead of the MELD score, 26.3% of those who died within 90 days would have had a significantly higher chance of receiving a liver transplant', he said. 'This equates to a 4.9% reduction in 90-day waiting-list mortality'.

The research team believes that, since there is a shortage of liver grafts and the prevalence of cirrhosis is increasing globally, better prediction of mortality and improved prioritization for liver transplantation are becoming increasingly important. 'We believe that MELD-Na-based allocation would help to prioritize patients on European liver transplant waiting lists and reduce the number of patients who die before they get the chance of receiving this life-saving treatment'.

'The MELD score was a breakthrough in the field of liver transplantation, as it ensured equity in patients assessed and listed for a transplant. Over the years, it became apparent that the addition of Na to the original equation improved the classification of patients, and the MELD-Na was subsequently adopted in the US in 2016', explained Professor Emmanuel Tsochatzis of the Royal Free Hospital and University College London, UK, and an EASL Governing Board member. 'This study is an important step in introducing MELD-Na in the European liver transplant programs, as it demonstrated an almost 5% improvement in 90-day waiting list mortality'.

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About The European Association for the Study of the Liver (EASL)

Since its foundation in 1966, this not-for-profit organization has grown to over 4,500 members from all over the world, including many of the leading hepatologists in Europe and beyond. EASL is the leading liver association in Europe, having evolved into a major European association with international influence, and with an impressive track record in promoting research in liver disease, supporting wider education, and promoting changes in European liver policy.

Contact

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Session details

Session title: General session I

Date and time of session: Thursday 27 August 2020, 14.15–14.30

Presenter: Ben Goudsmit

Abstract: Validation of the model for end-stage liver disease sodium score for the Eurotransplant region (GS05)

Author disclosures

Ben Goudsmit and the study authors have no relevant disclosures.

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3. Biggins SW, et al. Serum sodium predicts mortality in patients listed for liver transplantation. *Hepatology*. 2005;41(1):32–9.
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5. United Network for Organ Sharing. OPTN/UNOS Liver and Intestinal Organ Transplantation Committee. Report to the board of directors. Richmond, Virginia. 2014 Jun. Available from: https://optn.transplant.hrsa.gov/media/1834/liver_boardreport_20140702.pdf. Accessed 17 February 2020.

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