New scoring system can help clinicians predict 30-day mortality risk for patients with alcohol-associated hepatitis

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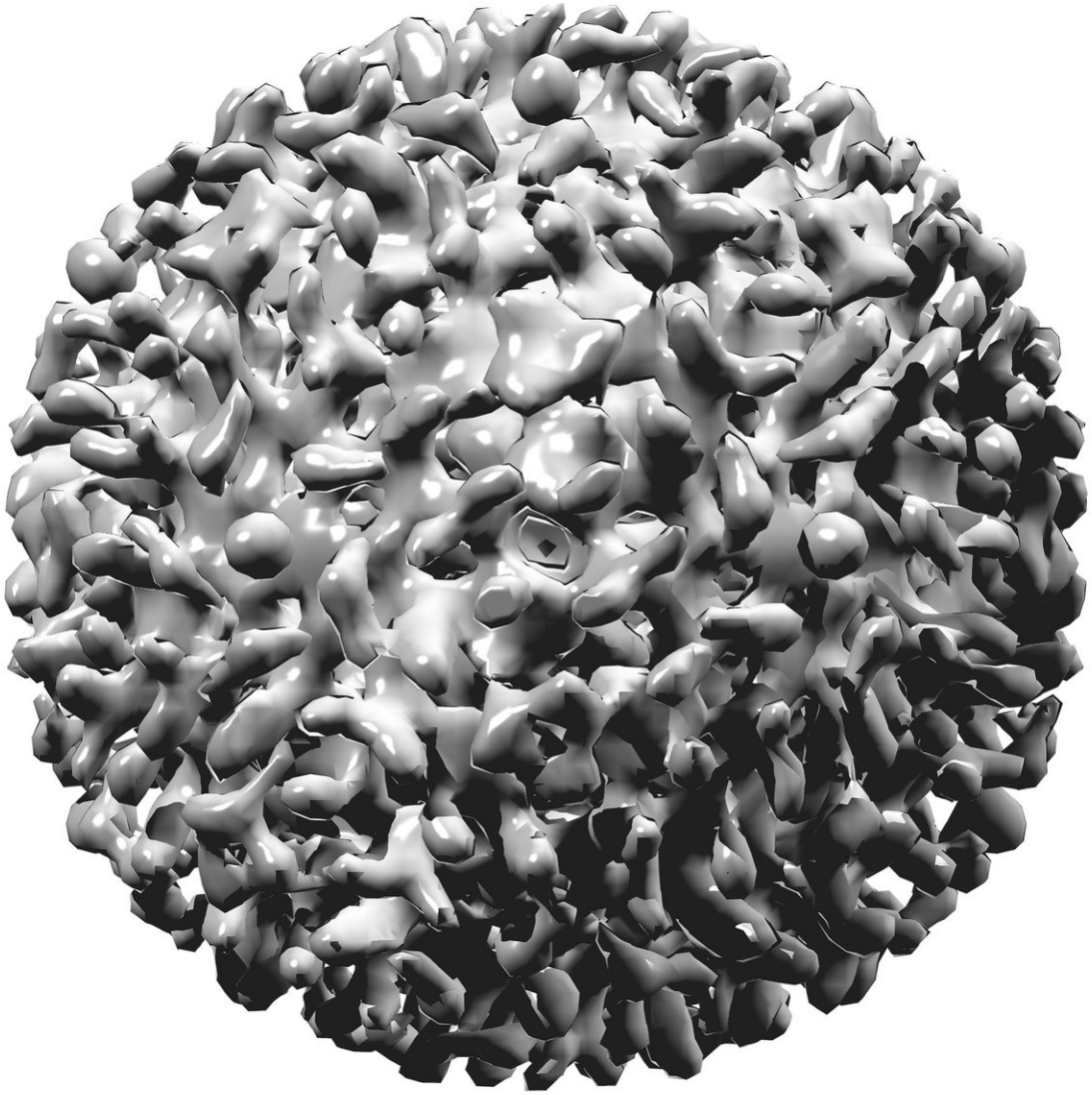

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Mayo Clinic researchers have developed a new scoring system to help health care professionals predict the 30-day mortality risk for patients with alcohol-associated hepatitis, and the tool appears to more accurately identify patients at highest risk of death and those likely to survive.

The new scoring system, called the Mortality Index for Alcohol-Associated Hepatitis (MIAAH), is at least as accurate as existing models in identifying patients with alcohol-associated hepatis who are at high risk of death, according to results of a study published in *Mayo Clinic Proceedings*.

"While we believe the MIAAH will be refined over time, possibly in conjunction with an existing model, our study finds that it's a useful tool in assessing mortality risk," says Douglas Simonetto, M.D., a Mayo Clinic gastroenterologist and the study's senior author. "Given the significant mortality seen in patients with alcohol-associated hepatitis, assessing disease severity and prognosis is critical."

Alcohol-associated hepatitis is an acute inflammatory process in the liver that occurs in patients who consume excessive amounts of alcohol. Patients with milder forms of the disease often improve with limited treatment, but severe disease is associated with significant short-term mortality. No pharmacologic treatments have been found to reduce 90-day mortality in severe cases. Accurate prognostic tools are essential for clinicians to identify patients at high risk of death and determine appropriate treatment.

At least four prognostic models are available, but the Mayo research team set out to develop a new system that more accurately predicts 30-day mortality. Using deidentified patient health records from Mayo Clinic in Rochester from 1998 to 2018, researchers identified 266 adult patients with a diagnosis of alcohol-associated hepatitis. Of those patients, the 30-day mortality rate was 19.2%. The study derived several variables, such as blood urea nitrogen and bilirubin, and developed a model scoring system that incorporated the variables.

The MIAAH model then was used to predict outcomes for an external validation cohort of 249 patients from health care centers at the University of South Dakota and the University of Kansas. The model was found to be at last as accurate as existing tools in identifying patients at high risk of short-term mortality.

"The MIAAH also showed advantageous performance characteristics in its ability to increasingly accurately identify patients at highest risk of death versus those who are more likely to survive," says Camille Kezer, M.D., a Mayo Clinic resident physician and the study's first author. "It also has the advantage of performing well in patients, regardless of whether they've been treated with steroids, which makes it generalizable."

Despite decades of research, treatment options for patients with alcohol-associated hepatitis remain limited, with questionable efficacy. Prognostic models are important for determining which treatments may have value and whether patients are responding to treatment. Modeling is also integral in determining whether patients are candidates for a liver transplant.

"This is why a prognostic model that accurately identifies short-term mortality risk has such value," says Dr. Simonetto. "With this study, we set out to create a novel model with more consistent and reliable

accuracy, based on laboratory variables and demographic data that's routinely obtained at the time of admission. While the optimal process may include a combination of models, the MIAAH can be an important tool in helping our patients."

More information: Camille A. Kezer et al, The Mortality Index for Alcohol-Associated Hepatitis: A Novel Prognostic Score, *Mayo Clinic Proceedings* (2022). DOI: 10.1016/j.mayocp.2021.10.026

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