

JAY Hi, my name is Jay Talwalkar. And I'm a transplant hepatologist here at the Mayo Clinic in Rochester, Minnesota.

TALWALKAR: Today I'd like to talk to you about the topic of frailty and how it relates to patients being evaluated and undergoing liver transplant. As patients continue to wait longer for liver transplantation, many of us have recognized the toll liver disease takes on a person's strength and physical function.

This was addressed in a recent study by Tapper and colleagues from Harvard Medical School and published in the *Journal of Hepatology* online this month. The study looked at objective measures of frailty and their ability to independently predict major clinical outcomes such as mortality, hospital readmission, or discharge to a rehabilitation hospital. The importance of frailty is that the things we look at, such as age and MELD score, to try to predict disease severity don't completely capture the risk of major clinical outcomes in patients with decompensated cirrhosis.

Frailty in the study was assessed using three conventional scales that can be applied at the bedside-- one including the Activities of Daily Living Index, a second, called the Braden Scale, and a third called the Morse Fall Risk Score. From a group of about 730 patients hospitalized with decompensated cirrhosis, Tapper and colleagues found that the overall 90-day mortality rate was almost 20% while 30-day readmissions approached almost 30%.

Approximately 20% of patients were discharged to rehabilitation facility as well. When adjusting for known risk factors that explain poor outcomes, individuals with ADL scores above 12, indicating significant frailty, had almost a two-fold higher risk of death as compared to patients with higher ADL scores. Discharge to a rehabilitation facility was also predicted by high ADL and Braden Risk Scores.

Importantly, none of these risk scores or frailty indexes could predict if a patient would be hospitalized within 30 days, which is somewhat surprising. When thinking about this study's results, we should think of a few things in the context of how to interpret these findings. Patients in this hospital were admitted to a dedicated liver unit as opposed to a general ward or other facility you might find in the community.

Frailty may actually be an even more important indicator for bad outcomes in patients with hepatic encephalopathy. But this study didn't have enough patients in the sample to fully assess the possibility of this outcome. And finally, more readmissions could have actually occurred than the authors detected in the community because they only focused on patients coming back to their own hospital within the Harvard Medical system.

So it appears that simple assessments of frailty at the bedside could help providers predict who might have a poor outcome when being hospitalized for decompensated cirrhosis. If frailty becomes severe, we have all in the transplant community observed that it can result in patients not being eligible for transplant or perhaps even being removed from the waiting list because they become too ill. Finding ways to prevent severe weakness and strength loss in these patients needs to be a clinical research priority in this area so we can help more patients achieve the goal of a liver transplant.