Survival Measurement Tools

The two most common survival measurement tools are the Child-Turcotte- Pugh (CTP) classification and the Model for End Stage Liver Disease (MELD). CTP has been used widely for many years and was originally developed as a prognostic tool for determining operative risk for patients undergoing portosystemic shunt surgery. It is comprised of 5 clinical variables: ascites, encephalopathy, serum bilirubin, serum albumin and prothrombin time. It classifies patients as A = 90% chance of 5-year survival, B = 80% chance of 5-year survival, or C = median survival of about 1-year.

The MELD classification was developed in 2001, and was also designed to predict 90-day mortality in those undergoing portosystemic shunts. It has since been adopted by the United Network for Organ Sharing to determine priorities for allocating donor livers and has been used to determine prognosis of groups of patients with chronic liver disease. It is comprised of 5 variables: serum bilirubin, creatinine, sodium, International Normalized Ratio (INR) for the prothrombin time, and presence or absence of kidney dialysis. MELD has improved the ability to predict 90-day mortality risk.

Accurate estimates of risk of mortality are important in determining timing of care interventions. Current classifications do not clearly align with patients' reported functional status and sense of well-being, and alone are not useful in determining individual risk or timing for initiation of palliative or end-of-life (EOL) care. However, functional status and ability to manage daily activities are especially important measures in assessing and discussing desired patient-centered outcomes that extend beyond physiological measures and, along with MELD and CTP, should be incorporated into clinical practice.

References:

Child, CG, & Turcotte, JG (1964). Surgery and Portal hypertension. *Major Problems in Clinical Surgery*, 1, 1-85.

Kamath, PS, Wiesner, RH, Malinchoc, M, Kremers, W, Therneau, TM, & Kosberg, CL (2001). A model to predict survival in patients with end-stage liver disease. *Hepatology,* 33, 464–470.