

New hepatocellular carcinoma prognostic model improves prediction of patient survival

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The ITA.LI.CA prognostic system, a model integrating tumor staging, liver function, functional status, and alpha-fetoprotein level, builds on previous models of hepatocellular carcinoma (HCC) prognosis and shows superior survival prediction in Italian and Taiwanese cohorts, according to a study published this week in *PLOS Medicine* by Alessandro Vitale of Azienda Ospedaliera Universitaria di Padova, Italy, and colleagues.

Primary liver cancer is the sixth most common cancer and the second leading cause of cancer-related deaths worldwide. Current prognostic models for HCC (the most common liver cancer) do not integrate a number of patient-level factors that affect prognosis and treatment eligibility. Using the ITA.LI.CA dataset, prospectively collected from 5,290 consecutive patients with HCC from 19 institutions in Italy, Vitale and colleagues created an ITA.LI.CA staging system using tumor characteristics, and then developed a parametric multivariable survival model integrating ITA.LI.CA stage, Eastern Cooperative Oncology Group performance status, Child-Pugh score, and alpha-fetoprotein. The resulting prognostic score had concordance indices of 0.71 and 0.78 in internal (a subset of ITA.LI.CA) and external (Taiwanese, n=2,651) validation cohorts, respectively, and compared favorably (p

Prospective trials beyond the two populations studied are needed to validate the generalizability of the ITA.LI.CA prognostic score.

Nonetheless, strong performance in two distinct cohorts suggests that

Vitale and colleagues have developed a promising tool. In a Perspective on the study, Neehar Parikh of University of Michigan, Ann Arbor, Michigan (US) and Amit Singal of UT Southwestern Medical Center, Dallas, Texas (US) (both uninvolved in the study) discuss why ITA.LI.CA is timely and provides an advance, and propose next steps. On this study's impact, they say, "[t]his system is an important iteration in the evolution of staging for HCC, and, while it enters a crowded field, the ITA.LI.CA staging system is a worthy entrant."

More information: Farinati F, Vitale A, Spolverato G, Pawlik TM, Huo T-l, Lee Y-H, et al. (2016) Development and Validation of a New Prognostic System for Patients with Hepatocellular Carcinoma. *PLoS Med* 13(4): e1002006. [DOI: 10.1371/journal.pmed.1002006](https://doi.org/10.1371/journal.pmed.1002006)

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