



KOREA-JAPAN 1

ADV score is a quantifiable prognostic prediction model for surgical resection of hepatocellular carcinoma: A Korea-Japan collaborative validation study with 10,606 patients

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Background: We previously demonstrated that multiplication of α -fetoprotein (AFP), des- γ -carboxy prothrombin (DCP) and tumor volume (TV) (ADV score, expressed in log10) is an integrated surrogate marker of post-resection prognosis for hepatocellular carcinoma (HCC). This study aimed to validate the ADV score as a quantifiable biomarker for oncological aggressiveness of HCC on its prognostic impact following resection of HCC.

Methods: A multicenter validation cohort with 10,606 patients (4,900 [46.2%] from Korea and 5,706 [53.8%] from Japan) was established through the Korea-Japan collaboration study groups managed by the Korea and Japan Society of Hepatobiliary Pancreatic Surgery.

Results: In the Korean cohort, disease-free survival (DFS) and overall survival (OS) rate at 5 years were 66.7% and 93.0% in ADV score <2log; 56.0% and 84.1% in ADV score 2.0-2.9log; 51.0% and 79.7% in ADV score 3.0-3.9log; 45.7% and 75.3% in ADV score 4.0-4.9log; 44.4% and 69.4% in ADV score 5.0-5.9log; 38.4% and 64.3% in ADV score 6.0-6.9log; 32.6% and 62.9% in ADV score 7.0-7.9log; 28.7% and 53.2% in ADV score 8.0-8.9log; 30.4% and 46.5% in ADV score 9.0-9.9log; 30.5% and 47.7% in ADV score 10.0-10.9log; 22.5% and 35.7% in ADV score 11.0-11.9log; and 18.1% and 33.8% in ADV score ≥ 12 log, respectively (both $p < 0.001$). The ADV-score dependent DFS and OS rates in the Japanese cohort were very similar with those of the Korean cohort. Consequently, the overall study cohort also revealed similar ADV-score dependent DFS and OS rates. Multiplication of AFP and DCP (AD score) and TV were independent risk factors for DFS and OS. The 5-year DFS and OS rates were visualized according to AD score and TV as like weather prediction diagrams.

Conclusions: This high-volume international validation study revealed that the preoperative ADV score is a reliable surrogate biomarker for quantifiable prediction of post-resection prognosis in the Korean and Japanese patients with HCC.

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