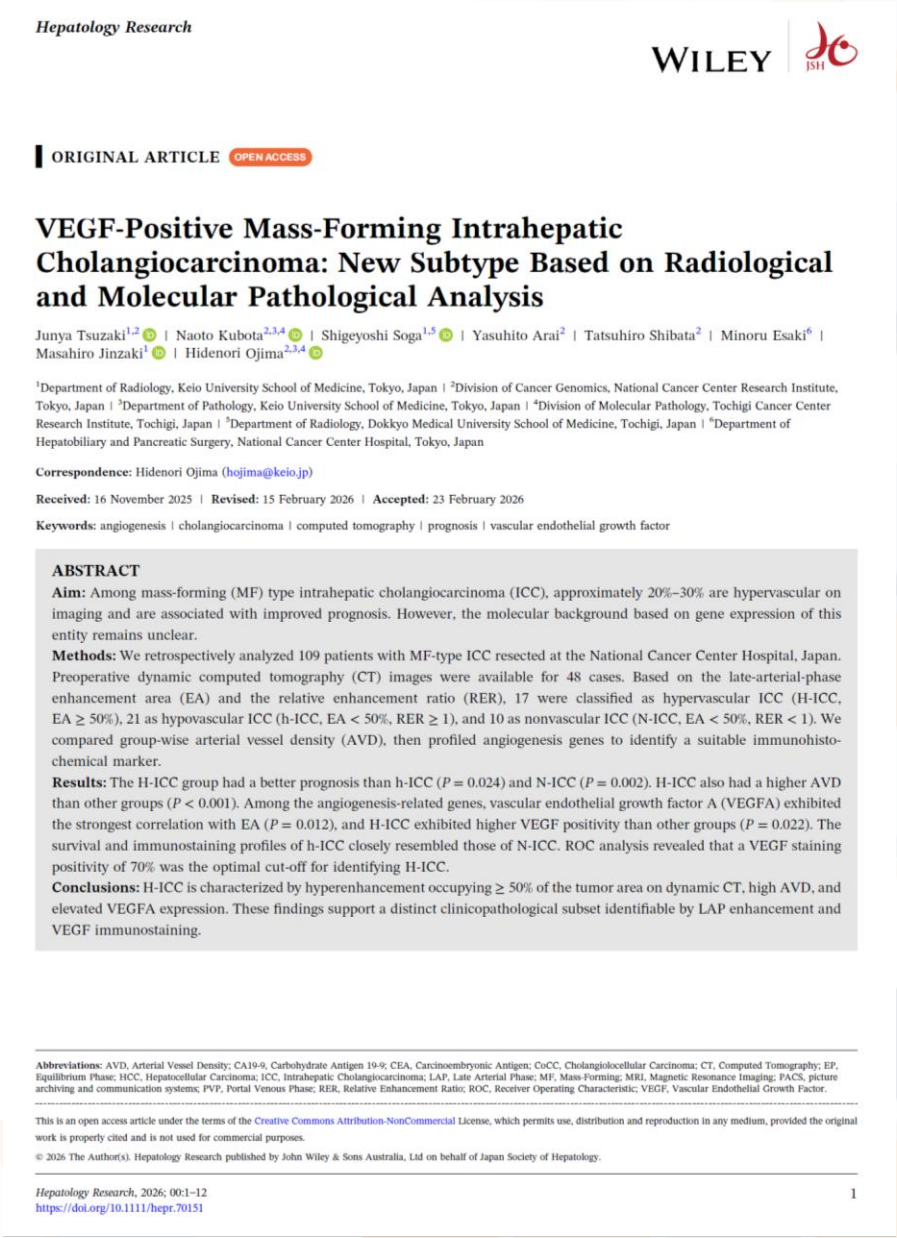
2026年3月 津崎盾哉先生の論文がHepatology Research (IF 3.4)に掲載されました。

予後が非常に悪い肝内胆管癌（ICC）の中で、造影効果を有する腫瘤形成型肝内胆管癌（MF型ICC）は、予後が比較的良好であることが報告されていましたが、その臨床病理学的・分子病理学的検討は行われていませんでした。本研究では、腫瘤形成型肝内胆管癌の一部にみられる、dynamic CT動脈有位相で強い造影効果を示す症例に注目し、画像所見、病理組織学的所見、ならびに血管新生関連遺伝子発現を統合して検討しました。その結果、この群は通常の造影効果の乏しいICCとは異なり、VEGFA高発現、腫瘍内動脈密度（AVD）高値、良好な予後を特徴とする新たなサブタイプであることが明らかになりました。そこで、我々の研究グループは、この1群を新たな肝内胆管癌のグループとして報告しました。特に、VEGF免疫染色は実臨床で利用可能な病理学的マーカーとなり得ることが示され、CT所見と併せてMF型ICCの予後層別化や病態理解の再構築につながる成果と考えられます。（尾島）

オープンアクセスhttps://doi.org/10.1111/hepr.70151



Hepatology Research

WILEY JSH

ORIGINAL ARTICLE OPEN ACCESS

VEGF-Positive Mass-Forming Intrahepatic Cholangiocarcinoma: New Subtype Based on Radiological and Molecular Pathological Analysis

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Received: 16 November 2025 | **Revised:** 15 February 2026 | **Accepted:** 23 February 2026

Keywords: angiogenesis | cholangiocarcinoma | computed tomography | prognosis | vascular endothelial growth factor

ABSTRACT

Aim: Among mass-forming (MF) type intrahepatic cholangiocarcinoma (ICC), approximately 20%–30% are hypervascular on imaging and are associated with improved prognosis. However, the molecular background based on gene expression of this entity remains unclear.

Methods: We retrospectively analyzed 109 patients with MF-type ICC resected at the National Cancer Center Hospital, Japan. Preoperative dynamic computed tomography (CT) images were available for 48 cases. Based on the late-arterial-phase enhancement area (EA) and the relative enhancement ratio (RER), 17 were classified as hypervascular ICC (H-ICC, EA ≥ 50%), 21 as hypovascular ICC (h-ICC, EA < 50%, RER ≥ 1), and 10 as nonvascular ICC (N-ICC, EA < 50%, RER < 1). We compared group-wise arterial vessel density (AVD), then profiled angiogenesis genes to identify a suitable immunohistochemical marker.

Results: The H-ICC group had a better prognosis than h-ICC ($P = 0.024$) and N-ICC ($P = 0.002$). H-ICC also had a higher AVD than other groups ($P < 0.001$). Among the angiogenesis-related genes, vascular endothelial growth factor A (VEGFA) exhibited the strongest correlation with EA ($P = 0.012$), and H-ICC exhibited higher VEGF positivity than other groups ($P = 0.022$). The survival and immunostaining profiles of h-ICC closely resembled those of N-ICC. ROC analysis revealed that a VEGF staining positivity of 70% was the optimal cut-off for identifying H-ICC.

Conclusions: H-ICC is characterized by hyperenhancement occupying ≥ 50% of the tumor area on dynamic CT, high AVD, and elevated VEGFA expression. These findings support a distinct clinicopathological subset identifiable by LAP enhancement and VEGF immunostaining.

Abbreviations: AVD, Arterial Vessel Density; CA19-9, Carbohydrate Antigen 19-9; CEA, Carcinoembryonic Antigen; CoCC, Cholangiolocellular Carcinoma; CT, Computed Tomography; EP, Equilibrium Phase; HCC, Hepatocellular Carcinoma; ICC, Intrahepatic Cholangiocarcinoma; LAP, Late Arterial Phase; MF, Mass-Forming; MRI, Magnetic Resonance Imaging; PACS, picture archiving and communication systems; PVP, Portal Venous Phase; RER, Relative Enhancement Ratio; ROC, Receiver Operating Characteristic; VEGF, Vascular Endothelial Growth Factor.