

Eur J Surg Oncol

. 2022 Aug 20;S0748-7983(22)00595-9. doi: 10.1016/j.ejso.2022.08.006. Online ahead of print.

Tumor biology reflected by histological growth pattern is more important than surgical margin for the prognosis of patients undergoing resection of colorectal liver metastases

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PMID: 36031469 DOI: 10.1016/j.ejso.2022.08.006

Abstract

Introduction: The histological growth pattern (HGP) of colorectal liver metastases (CRLMs) reflects tumor biology and local infiltrating behavior. In patients undergoing surgery for CRLMs, we investigated whether HGP and surgical margin status interact when influencing prognosis.

Methods: Clinicopathological data, margin status, and HGP were reviewed in patients who underwent resection of CRLMs. R1 margin was defined when cancer cells were present at any point along the margin. HGPs were scored according to international guidelines, identifying patients with desmoplastic (DHGP) or non-desmoplastic (non-DHGP) CRLMs.

Results: Among 299 patients, 16% had R1 resection and 81% had non-DHGP CRLMs. Non-DHGP was the only predictive factor for R1 resection (18.7% versus 7.4% in DHGP, $p = 0.04$). Poorer 5-year overall survival was observed in both R1 and non-DHGP groups in univariate analysis (27.6% in R1 versus 45.6% in R0, $p = 0.026$, and 37.2% in non-DHGP versus 59.2% in DHGP, $p = 0.013$), whereas non-DHGP but not R1 remained associated with worse prognosis in multivariate analysis. In patients with non-DHGP, R1 margin has no prognostic impact.

Conclusions: In patients undergoing resection of CRLMs, the prognostic value of poor tumor biology, such as in patients with non-DHGP, exceeds that of surgical radicality.

Keywords: Colorectal; Histological growth pattern; Liver metastasis; Prognosis; Surgical margin.

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Conflict of interest statement

Declaration of competing interest The authors have no conflicts of interest to disclose.

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