

Margin status¹ (Core)

The status of residual tumour following treatment is classified in TNM8^{2,3} as follows: R0 – no residual tumour; R1 – microscopic residual tumour; and R2 – macroscopic residual tumour. Wittekind et al (2009)⁴ further refined this in rectal carcinoma where R1 refers to tumours with a clearance of <1 mm. This approach has subsequently been variably adopted by pathologists with respect to oesophageal, stomach and pancreatic carcinomas. It is worthy of note however that many other ICCR tumour datasets include resection margin status but do not use this form of R classification, and the TNM Cancer Staging Manuals^{2,3} do not comment on R status for liver cancers. Given the lack of an international consensus or clear evidence base in malignant liver tumours it may be most appropriate to document clearance and distance to margins (including liver parenchyma, bile ducts, vessels and porta hepatis connective tissue) with such malignancies rather than apply the refined R0, 1, 2 approach taken in gastrointestinal tumours.

Hepatocellular carcinoma

A meta-analysis of 5 trials of treatment in hepatocellular carcinoma found no difference in recurrence or survival for <10 millimetres (mm) compared with ≥10 mm minimal distance of the tumour to the resection margin.⁵ However, a review of 14 retrospective case series (4197 patients with 10 year survival data) found that a distance of the tumour >10 mm from the resection margin was a significant positive prognostic factor.⁶

More recently margins <1 mm or >1 mm are reported in several series as significant on multivariate analysis, including large HCCs >10 cm,⁷ and may be predictive of local recurrence.⁸

Intrahepatic cholangiocarcinoma

For intrahepatic cholangiocarcinoma there are a few publications citing margin status as a prognostic factor on multivariate analysis.⁹⁻¹¹ A systematic review of intrahepatic CC did not include margin status among significant prognostic factors.¹²

Perihilar cholangiocarcinoma

In the absence of published evidence for perihilar cholangiocarcinoma, and the similarities between biliary and pancreatic duct cancer, some have argued that the same approach to the definition of R1 resection - i.e., cancer cells <1 mm from the transection or dissection margin - is appropriate¹³ but evidence for the prognostic significance of this is limited.¹⁴ The presence of BILIN at the bile duct transection margin should be recorded although again the clinical significance of this is uncertain in perihilar tumours.

In summary, margin status is considered to be a required item for all three tumour types in the dataset. In line with other sites, margins should be assessed macroscopically, and blocks taken to confirm microscopically, noting that in addition to the parenchymal margin there are bile duct and vascular transection margins and porta hepatis and bile duct radial margin (for perihilar cholangiocarcinoma¹³) representing the dissection plane. For this reason, painting the surface of the specimen prior to dissection is important, so that the margins can be identified from the block key and assessed microscopically.

References

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