

# The importance of liver functional reserve in the non-surgical treatment of hepatocellular carcinoma

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## Abstract

The aim of any oncological treatment is not just to eliminate the tumour, but to maximise patient survival and quality of life. Since the liver has a vital function, any radical treatment that severely compromises liver function will result in a shortening of life expectancy, rather than a prolongation.

Furthermore, even non-severe liver damage may prevent the delivery of further effective therapies. This is particularly important in the case of hepatocellular carcinoma (HCC), as it is associated with underlying cirrhosis in most patients - cirrhosis itself is not only a potentially lethal disease and independent prognostic factor in HCC, but it also makes liver function fragile.

Accordingly, some information about liver dysfunction is included in most staging systems for HCC and can be used to guide the selection of treatments that the functional liver reserve can tolerate.

Unfortunately, the prediction of functional damage to the liver in the case of antitumor treatments is very challenging and still suboptimal in any given patient. Moreover, while the assessment of functional reserve can now be used to avoid postoperative liver failure in the surgical setting, its use has been less well clarified for non-surgical therapies, which is of particular relevance today, as several lines of effective non-surgical treatments, including systemic therapies, have become available.

The present article will

- a) critically review the implications of the assessment of liver functional reserve in patients with HCC,
- b) illustrate the available tools to assess liver functional reserve and
- c) discuss the role of functional assessment for each type of non-surgical therapy for HCC.