

Routine Staging Using Chest Computed Tomography in Workup of Treatment-Naïve Hepatocellular Carcinoma Prior to Locoregional Therapy: Is There a Need?

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Abstract

Introduction: The lung is the most common site of distal metastasis in patients with hepatocellular carcinoma (HCC), as seen in more than half of patients with extrahepatic disease. The incidence of pulmonary metastasis in all patients with HCC, however, remains low (between 4.5% to 20%). Their presence, nevertheless, contraindicates curative locoregional therapies. The role of staging chest computed tomography (CT) before locoregional treatment is not well defined. This study aimed to assess the utility of pre-treatment chest CT prior to locoregional therapy. **Materials and Methods:** Retrospective review of continuous cases of treatment-naïve HCC referred for locoregional therapy from 2004 to 2013 was performed. Patients with pre-treatment chest CT were evaluated for the presence of pulmonary metastases. HCC features (size, numbers, vascular invasion, nodal status and bone metastases) were recorded. Univariate analysis and multivariate logistic regression were performed for significant association. **Results:** A total of 780 patients were reviewed, of which 135 received staging chest CT. Pulmonary metastases (n = 17, 12.6%), benign lesions (n = 41, 30.4%) and indeterminate lesions (n = 11, 8.1%) were detected. Among the indeterminate lesions, there were losses to follow-up (n = 2) and deaths within the study period (n = 3). All patients with pulmonary metastases were declined locoregional therapy. Univariate analysis showed statistical significant association between pulmonary metastases with the number of intrahepatic lesions ($P < 0.01$), primary tumour size ($P = 0.018$) and presence of vascular invasion ($P < 0.01$). On multivariate analysis, the number of intrahepatic lesions (OR: 9.7; 95% CI, 1.6 to 57.2; $P = 0.012$) and presence of both hepatic and portal venous invasions (OR: 11.8; 95% CI, 1.1 to 128.8; $P = 0.043$) were the 2 independent positive predictors of pulmonary metastases. **Conclusion:** The prevalence of pulmonary metastasis is low in HCC and our study does not support the routine use of staging chest CT in all treatment-naïve patients. It can, however, be considered in cases with multiple lesions or vascular invasion.

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