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OP 2-3

Association Between Primary Tumor Characteristics And Histopathological Growth Pattern Of Liver Metastases In Colorectal Cancer

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Background : The microarchitecture of liver metastases, or histopathological growth pattern (HGP), has been demonstrated as a significant prognostic factor in patients who underwent resection of colorectal liver metastases (CRLM). The influence of primary tumor characteristics in the development of CRLM with distinct HGP remains poorly understood. The aim of our study is to evaluate the association between pathological characteristics of the primary colorectal tumor and the HGP of related CRLM.

Methods : A retrospective series of 167 patients who underwent curative-intent resection of CRLM and in whom pathological samples from both primary tumor and liver metastases were available was reviewed. At primary tumor level, KRAS mutational status, grade of differentiation and tumor budding were assessed. HGP were scored in each resected CRLM according to consensus guidelines, and classified as desmoplastic (dHGP) or non-desmoplastic (non-dHGP). Associations between primary tumor characteristics and HGP of CRLM were evaluated using a binary logistic regression model. Overall- and recurrence-free survival were evaluated using Kaplan-Meier and multivariable Cox regression analysis.

Results : CRLM were classified as dHGP in 36% of the patients and as non-dHGP in 64%. No relation was observed between primary tumor location, stage, nodal status and KRAS mutation and HGP of CRLM. Higher rate of moderately or poorly differentiated primary tumors was observed in the group of non-dHGP CRLM, representing 80% as compared with 60% in dHGP group (OR=3.6; (95% CI: 1.6-7.05); p=0.001). Higher rate of tumor budding was observed in the group of non-dHGP CRLM, with median tumor budding of 4 as compared with 2.5 in the dHGP group (p=0.042). In the entire series, 5-years overall and disease-free survivals were 43% and 32.5%, respectively. The non-dHGP of CRLM was the most significant for poor posthepatectomy survival, with 5-years overall and disease-free survivals of 32.2% and 24.6%, as compared with 60.8% and 45.9% in the dHGP group (p=0.02).



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Conclusions : Colorectal tumors with moderate or poor differentiation and those with high tumor budding are more frequently associated with CRLM with non-dHGP. This suggests that primary tumor characteristics of local aggressiveness and migratory capacity could preferentially promote the development of CRLM with infiltrating pattern and that these parameters could be considered in new scores for predicting the HGP before the surgery.

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