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3306 Correlation between the immunohistochemical expression of human kallikreins 5, 6, 10 and 11 and histopathological variables in colorectal cancer

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Human kallikreins 5, 6, 10 and 11 (hK5/6/10/11) are immunohistochemically expressed in all cell types of the colorectal mucosa. It has been suggested that members of the human kallikrein gene family may represent candidate cancer diagnostic/prognostic factors. The aim of this study was to evaluate the immunohistochemical expression (IE) of the above hKs in colorectal adenocarcinoma (CRAC) and to correlate this IE with various histopathological variables. Included in the study were 54 CRACs resected by partial colectomy. Twenty-nine/54 (54%) cases were well or moderately differentiated (low-grade/LG) and 25/54 (46%) poorly differentiated (high-grade/HG) CRACs, respectively. Fourteen/54 (26%) cases were low-stage (LS/pT1and pT2) and 40/54 (74%) high-stage (HS/pT3) CRACS respectively. Regional lymph node metastasis (LNM) was observed in 21/54 (39%) cases. The immunohistochemical method of streptavidin-biotin-peroxidase using anti-hK5/6/10/11 monoclonal and polyclonal antibodies was performed. Negative staining included no staining and staining in <5% of the tumor. Positive staining was categorized as weak (WPS), concerning staining in 5-25% of the tumor and strong (SPS), concerning staining in >25% of the tumor. Chi-square test was used for the statistical analysis and a P value <0.05 was considered as significant. In CRAC, the IE of all hKs was decreased in relation to the IE of normal colon mucosa: 37/54 (69%) cases were positive for hK5 (WPS in 16/37, SPS in 21/37), 38/54 (70%) for hK6 (WPS in 15/38, SPS in 23/38), 43/54 (80%) for hK10 (WPS in 17/43, SPS in 26/43) and 35/54 (65%) for hK11 (WPS in 22/35, SPS in 13/35) respectively. A statistically significant (ss) correlation was observed among the IE of all hKs. HG-CRACs expressed all hKs in a higher percentage than LG-CRACs, but a ss difference was observed only in the case of hK11 (84% vs. 48%, P=0.006). When the grade of positivity was taken into account, ss difference was observed between hK6 and hK11 IE and tumor differentiation (P=0.047 and P=0.016 respectively). HS-CRACs expressed all hKs in a higher percentage than HG-CRACs, but no ss difference was observed. When the grade of positivity was taken into account, ss difference was observed between hK11 IE and tumor invasiveness (P=0.047). CRACs with LNM expressed hK5/6/10/11 in a ss higher percentage (86% vs. 58% - P=0.030, 90% vs. 58% - P=0.010, 95% vs. 70% - P=0.023 and 86% vs.52% - P=0.010 respectively). In conclusion, although the IE of hK5/6/10/11 is down-regulated in CRAC, tumors of HG and/or advanced pathological stage express one or more of the above kallikreins in a higher percentage. Strong hK6/11 positive tumors seem to be more aggressive and all the studied hKs may significantly contribute to information in predicting lymph node metastases.

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