The Expression of the High Mobility Group A2 Protein in Colorectal Cancer and Surrounding Fibroblasts is Linked to Tumor Invasiveness

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Tumor staging of colorectal cancer is typically based on conventional TNM and Dukes classifications. However, there is a significant interest in identifying molecular markers that are related to genetic or epigenetic processes. Using immunohistochemistry, the expression of the high-mobility group A2 protein was analysed in 103 colorectal cancer cases to determine its use as a biomarker in colorectal cancer to integrate morphological staging. Increased high-mobility group A2 expression is strongly associated with an increase in tumor invasiveness, which was measured through both budding and vascular invasion (P < .0001). Kaplan-Meier estimates showed a decrease in overall survival when vascular invasion is present (P = .023). Moreover, a fraction of the analyzed samples showed high-mobility group A2-positive stromal fibroblasts. Although high-mobility group A2-positive tumors were associated with cell invasiveness, high-mobility group A2-positive stromal fibroblasts were correlated with less invasive tumors. High-mobility group A2 protein expression could be used as a prognostic marker to provide prospective information on patient outcome, complementing the data obtained using conventional pathologic staging systems.