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Titel des Beitrags: Disease processes may be reflected by correlations among tissue kallikrein proteases but not with proteolytic factors uPA and PAI-1 in primary ovarian carcinoma.

Abstract: In epithelial ovarian cancer, the high mortality rate is usually ascribed to late diagnosis, since these tumors commonly lack early-warning symptoms, but tumor-associated biomarkers useful for prognosis or therapy response prediction are in short supply. However, members of the tissue kallikrein serine protease family, the serine protease uPA and its inhibitor PAI-1, are associated with tumor progression of ovarian cancer. Therefore, we used ELISA to determine uPA, PAI-1, and tissue kallikreins hK5-8, 10, 11, and 13 in extracts of 142 primary tumor tissue specimens from ovarian cancer patients and studied the strength of association between protein expression levels of these tumor tissue-associated factors. uPA, PAI-1, hK5, and hK8 were related to FIGO stage; hK5 expression was higher in FIGO III/IV than in FIGO I/II patient tissues. PAI-1 and hK5 differed significantly according to nuclear grading; expression of hK5 was higher in G3 than in G1/2 tumors. Associations between uPA, PAI-1, and the tissue kallikreins were weak. There were strong pairwise correlations within the cluster of tissue kallikreins hK5, 6, 7, 8, 10, and 11, but their bivariate distributions depended on nuclear grading. These results support the notion that several tissue kallikreins are co-expressed in ovarian
cancer patients, substantiating the existence of a steroid hormone-driven tissue kallikrein cascade in this disease.