Human kallikrein 8 protein (hK8) in ovarian cancer cytosols: A new marker of favorable prognosis.

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Human kallikrein 8 (hK8/neuropsin/ovasin/PRSS19; encoded by the KLK8 gene) is a member of the kallikrein family of secreted serine proteases. Previous reports indicate that KLK8 is regulated by steroid hormones, differentially expressed in ovarian cancer tissues and that tissue KLK8 mRNA is a marker of favourable prognosis in ovarian carcinoma. Recent evidence shows that the hK8 protein is elevated in 55% of ovarian tumor tissues and 62% of ovarian cancer patient sera, compared to normal, suggesting that hK8 is a prospective diagnostic ovarian cancer biomarker. Given the above, the aim of the present study was to determine if tissue hK8 bears any prognostic significance in ovarian cancer. Using a newly developed ELISA, hK8 levels were quantified in 136 ovarian tumor extracts and correlated with various clinicopathological variables and outcome [progression-free survival (PFS), overall survival (OS)], over a median follow-up period of 42 months. hK8 concentration in ovarian tumor cytosols ranged from 0 to 478 ng/mg of total protein, with a median of 30 ng/mg. An optimal cutoff value of 25.8 ng/mg total protein (75th percentile) was selected, based on the ability of hK8 values to predict the PFS of the study population, to categorize tumors as hK8-positive or negative. Women with hK8-positive tumors most often had lower grade tumors (G1), no residual tumor after surgery and optimal debulking success (p < 0.05). Univariate and multivariate Cox regression analyses revealed that patients with hK8-positive tumors had a significantly longer PFS and OS than hK8-negative patients (p < 0.05). Kaplan-Meier survival curves further confirmed a reduced risk of relapse and death in women with hK8-positive tumors (p = 0.001 and p = 0.014, respectively). These results indicate that hK8 is an independent marker of favourable prognosis in ovarian cancer.