Human kallikrein 7: an unfavorable prognostic marker of ovarian cancer

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ABSTRACT

Serous ovarian cancer is the most lethal gynecologic malignancy for women in the industrialized countries. Independent prognostic biomarkers can facilitate disease management. Human tissue kallikreins (hKs) are potential prognostic markers.

RATIONALE & HYPOTHESIS

Quantify hK7 protein expression in ovarian cancer tissue cytols.

Correlate hK7 expression with other clinicopathological variables.

Determine the prognostic value of hK7 using univariate and multivariate Cox regression analysis and Kaplan Meier survival curves.

EXPERIMENTAL DESIGN

MATERIALS & METHODS

Data on 259 women with primary ovarian cancer treated at a single institution were screened. Tissue specimens were microdissected and stored in liquid nitrogen. hK7 protein expression was determined by immunohistochemistry. Clinically and pathologically relevant variables were recorded. The association between hK7 expression and clinicopathological variables was analyzed with a Fischer's exact test, univariate and multivariate Cox analyses, and Kaplan-Meier survival curves. Data analysis was performed using SPSS for Windows (version 17, SPSS, Chicago, IL, USA). The statistical significance of results was defined as p < 0.05.

BACKGROUND

Ovarian cancer:

The most lethal gynecologic malignancy for women in the industrialized countries.

Independent prognostic biomarkers can facilitate disease management.

Human tissue kallikreins (hKs) are potential prognostic markers.

Secreted serine proteases

Human tissue kallikrein 7 (hK7, human stratum corneum chymotryptic enzyme [HSCCE])

PROGNOSTIC SIGNIFICANCE OF hK7

CONCLUSIONS

hK7 was significantly up-regulated with an average concentration that was approximately 15 fold of normal and benign ovarian tissues, and 8 fold of non-ovarian metastatic tumors.

Patients with hK7-positive ovarian tumors had later stage (stage III/IV) diseases, higher tumor grades, suboptimal debulking, and serious papillary histotypes.

hK7-positive patients had shorter progression-free survival and 54% increase in risk of cancer relapse.

hK7 is an independent molecular marker of unfavorable prognosis that can be used in conjunction with other prognostic markers in a multi-parametric approach to determining ovarian cancer prognosis.

REFERENCES


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