AMERICAN SOCIETY OF CLINICAL ONCOLOGY
www.asco.org

Human kallikrein 6 (hK6) and 10 (hK10): new potential serum biomarkers for diagnosis and prognosis of epithelial ovarian cancer

Sub-category: Gynecologic Cancer
Category: Gynecologic Cancer
Meeting: 2002 ASCO Annual Meeting

Abstract No: 817
Citation: Proc Am Soc Clin Oncol 21: 2002 (abstr 817)
Author(s): Dionyssios Katsaros, Stefano Fracchioli, George M Yousef, Liu-Ying Luo, Andreas Scorilas, Manuela Puopolo, Ulf-Hakan Stenman, Ate G van der Zee, Ignace Vergote, Eleftherios P Diamandis, Dept of Gynecology, Gynecologic Oncology Unit, University of Turin, Turin, Italy; Dept of Pathology and Laboratory Medicine, Mount Sinai Hospital, Toronto, Canada; Dept of Pathology and Laboratory Medicine, Mount Sinai Hospital, Toronto, ON, Canada; National Center for Scientific Research 'Demokritos', Athens, Greece; Dept of Clinical Chemistry, Helsinki University Central Hospital, Helsinki, Finland; Dept of Obstetrics and Gynecology, University Hospital Groningen, Groningen, Netherlands; Dept of Obstetrics and Gynecology, University Hospital Groningen, Leuven, Belgium.
Abstract: Background: The human kallikrein gene family consists of 15 genes, twelve of them recently identified by us and other groups, all tandemly localized on chromosome 19q13.4. Many kallikreins appear to be disregulated in ovarian cancer. Human kallikrein 6 and 10 are secreted serine proteases highly expressed in ovarian tissue. Materials and Methods: We measured, by immunoassay, human kallikrein 6 (hK6) and 10 (hK10) concentrations in serum of 97 apparently healthy women, 141 women with benign gynecological diseases, and 146 patients with histologically-proven primary ovarian carcinoma. We then calculated the diagnostic sensitivity and specificity of this test and examined the association of serum hK6/hK10 concentration with various clinicopathological variables, response to chemotherapy and patient survival. Results: Serum hK6/hK10 concentration between normal and benign disease patients was not different. However, hK6/hK10 in pre-surgical serum of ovarian cancer patients was highly elevated ($p<0.001$). Both hK6 and hK10 decreased significantly after surgery. The diagnostic sensitivity of both biomarkers at 90% specificity is 54%. 25-35% of CA125 negative ovarian cancer patients were hK10 positive at 95-90% specificity, respectively. The use of these two markers in stage I-II patients results in a 20% increase in sensitivity compared to CA125 alone. Pre-operative serum hK6/hK10 concentration was strongly associated with serous histological type, late stage, high grade, large residual tumor (>1cm), and no response to chemotherapy (all p values <0.001) and is a powerful predictor of both PFS and OS in both uni- and multivariate analyses. Conclusions: Serum hK6/hK10 appear to be new biomarkers for ovarian carcinoma improving, in combination with CA125, sensitivity and specificity for ovarian cancer diagnosis. High preoperative serum hK6/hK10 concentration is a strong and independent unfavorable prognostic marker for ovarian cancer.