Association of GnRH receptor type-II overexpression and poor clinical profiles in ovarian cancer: Possibility of novel targeted treatment

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ABSTRACT

Introduction: Ovarian cancer is considered as a 'silent lady killer' due to high mortality rate. This is due to late diagnosis of ovarian cancer that correlates with poor prognosis. Receptor type-II of GnRH (GnRHR-II) is relatively novel surface receptor that recently attracts attention due to overexpression in several diseases. Study of GnRHR-II in ovarian cancer in association with clinical profiles may provide important evidence to develop novel therapeutic modality. **Materials and Methods:** We measured in-situ expression level of GnRHR-II in microarray of ovarian cancer tissues. Expression level was quantified with ImageJ software to provide accurate measurement. expression level of GnRHR-II among different subtypes in the microarray was tested statistically (unpaired t-test). **Results:** Compared to another histotypes, endometrioid type showed significant overexpression of GnRHR-II ($p<0.05$). in addition, GnRHR-II expression was also higher in patients with larger tumor size and more advanced stage ($p=0.035$; $p=0.042$). **Conclusion:** We found that ovarian cancer tissues, especially endometrioid type overexpressed GnRHR-II and was associated with poorer clinical outcome. Our findings may benefit ovarian cancer, especially patients with endometrioid histotype, to receive antiGnRH targeted treatment.

Keywords: Ovarian cancer, GnRH receptor type II, targeted treatment, quantitative immunohistochemistry, endometrioid type