

Microvesicles in Peripheral and Uterine Blood in Women with Atypical Hyperplasia and Endometrioid Endometrial Cancer

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Abstract : BACKGROUND: Endometrial cancer is one of the most common gynecologic malignancy in developed countries. We hypothesized that amount of circulating micro-particles in blood may be connected with the development of endometrial hyperplasia and endometrial cancer. The aim of this study was to measure the micro-particles amount in uterine venous blood and in peripheral venous blood in women with atypical endometrial hyperplasia and endometrioid endometrial cancer. MATERIALS AND METHODS: By using flow cytometry (BD Canto II cytometer) we measured micro-particles amount in citrate plasma samples from peripheral and uterine venous blood of women with atypical hyperplasia of endometrium or endometrial cancer. We determined the amount of total (TF+), endothelial (CD144+) and monocytic (CD14+) micro-particles. RESULTS: Here we show statistically significant higher micro-particle levels in women with atypical hyperplasia of endometrium or endometrial cancer in comparison to healthy women. Performing measurements of the amounts of total, endothelial and monocytic microparticles allow for reliable differentiation between healthy, atypical hyperplasia and endometrial cancer groups. In blood samples from uterine veins the circulating micro-particle levels were significantly different from peripheral blood samples. The micro-particle levels in uterine blood samples were 7-fold higher than in those from peripheral blood of women with both atypical hyperplasia of endometrium and endometrial cancer when compared to the control group of healthy women. CONCLUSION: These results strongly suggested that the level of circulating micro-particles may be a sign of endometrial cancer development, however the detailed study is needed focusing on molecular processes passed through this small circulating molecules.

Keywords : endometrial cancer, endometrial hyperplasia, microvesicles, uterine blood

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