

Exosomal Biomarker Expression in Prostate Cancer and Benign Hyperplasia

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Introduction. Prostate cancer is a common solid malignancy and has high mortality. The tumorigenesis, metastasis and drug resistance of prostate cancer are associated with the cargos of exosomes such as miRNAs, lncRNAs and proteins. In addition, prostate cancer cells modulate surrounding stromal cells via exosomes. However, the spatial distribution and expression of exosomes' biomarkers in the tissue in benign and malignant lesions is still of interest.

Aim, Materials and Methods. The aim of the current study was to compare the expression of exosomal biomarkers CD9a in the tissue of patients with prostate cancer and benign hyperplasia.

The study was retrospective. Altogether, 30 patients were enrolled in the study. The patients underwent surgical treatment at Riga East University Hospital. The CD9a expression was analysed by immunohistochemistry.

Results. 20 patients with prostate acinar adenocarcinoma and 10 patients with prostate benign hyperplasia were enrolled in the study. CD9a staining was cytoplasmic, vesicular, predominantly focal, mainly located apically. In benign hyperplasia no or mild staining was observed, whereas the expression of CD9a in cancer tissue was almost mild to intense. The obtained results indicate that CD9 expression was significantly increased in prostate acinar adenocarcinoma compared to control group (2.8 ± 0.42 vs. 0.60 ± 0.51 , score, $p < 0.0001$).

Conclusions. CD9a expression was significantly increased in prostate acinar adenocarcinoma. CD9a could be the potential beneficial biomarkers for prostate cancer.