doi: 10.4274/jus.2015.04.002

Re: Exosomal Lncrna-P21 Levels May Help to Distinguish Prostate Cancer from Benign Disease

Mustafa Işın[1], Ege Uysaler[1], Emre Özgür[1], Hikmet Köseoğlu[2], Öner Şanlı[3], Ömer B. Yücel[2], Uğur Gezer[1], Nejat Dalay[1]

[1]*İstanbul University Oncology Institute, Department of Basic Oncology, İstanbul, Turkey*

[2]*Başkent University İstanbul Hospital Faculty of Medicine, Department of Urology, İstanbul, Turkey*

[3]*İstanbul University İstanbul Faculty of Medicine, Department of Urology, İstanbul, Turkey*

Front Genet 2015;6:168. doi: 10.3389/fgene.2015.00168. eCollection 2015.

EDITORIAL COMMENT

Search for a perfect biomarker to discriminate clinically significant and insignificant prostate cancer (PCa) is still continuing. Markers are still in progress, from blood, urine samples to statistical decision models by collected data.

In the present study, the authors evaluated the diagnostic utility of urine long non-coding RNAs (lncRNA); exosomal long intergenic non-coding RNA-p21 (lincRNA-p21) and Growth Arrest-Specific 5 (GAS5) levels in individuals with benign prostatic hyperplasia (BPH) and PCa.

Exosomes secreted from prostate can be detected in semen and urine. Exosomes contain proteins and various types of RNA molecules including lncRNAs.

LincRNA-p21 and GAS5 lncRNA act as tumor suppressor molecules in the cellular system. Thirty patients with PCa and 49 patients with BPH were included in the study. Urine samples were collected after digital rectal examination. Quantification of lncRNA molecules was performed by real-time PCR. The lincRNA-p21 levels were significantly higher in PCa than in BPH (median; 0.163 vs. 0.071; p=0.016, AUC=0.663). Exosomal GAS5 levels were found to be similar in the two disease groups. The sensitivity and specificity of lincRNA-p21 were 67% and 63%, respectively. The sensitivity and specificity of lincRNAp21 (lincRNA expression cut-off 0.181) in combination with PSA (PSA cut-off 2.5 ng/ml) were 52% and 94%, respectively. In the present study, the authors demonstrated that exosomal lncRNAs in urine is a promising biomarker when combined with PSA. Nevertheless, implementation of these findings into a good clinical instrument may take some time and external validations in larger cohorts.

Tayyar Alp Özkan, MD