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Molecular Detection of Prostate Specific Antigen in Patients with Prostate Cancer or Benign Prostate Hyperplasia the First Investigation from Iran

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Abstract:

Prostate cancer is the second common form of cancer in men. Detection of circulating Prostate Specific Antigen (PSA) transcripts has effectively been used for early diagnosis of prostate cancer cells. This investigation employed a reverse transcriptase polymerase chain reaction (RT-PCR) technique to distinguish the patients with either localized or metastatic prostate cancer (CaP) vs. Benign Prostate Hyperplasia (BPH) and control subjects, as compared with clinical and pathological records. With reservation of ethical issues, blood samples were collected from 60 cases. Based on pathological and clinical findings, 25 patients (20 with localized cancer, 5 with metastatic), 22 with BPH, and 13 healthy (including 3 females) subjects as negative controls, were selected from Shariati, Mehrad, Sina, Khatam and Atie Hospitals in Tehran, Iran. RT-PCR for a 260 bp PSA transcript was then performed. Clinical and pathological records were used for the assessment and comparison of PSA RT-PCR results. None of the control subjects and BPH (with 7 exceptions) were found positive by RT-PCR (Relative specificity= 72.7%). In patients with prostate cancer, 21 out of 25 were found PSA positive (Relative sensitivity=83.4%) and the remaining 3 have been shown to be PSA negative (Positive predictive value= 83.4%). All of 5 metastatic patients (100%) revealed PSA positive results. Our data reflects the clinical relevance and significance of RT-PCR results as assessed with clinical and pathological examinations. PSA RT-PCR might be used as a powerful means for diagnosis, even when either pathological or clinical findings are negative, and could be employed for further molecular epidemiology surveys.

Keywords:

[PSA](#) , [BPH](#) , [Prostate cancer](#)

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