

## **Does the hemodialysis program affect the Prostate Specific Antigen (PSA) serum level in patients with end stage renal disease (ESRD)?**

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### **Abstract :**

#### **Background:**

Measurement of total prostate specific antigen ( tPSA) is a useful clinical tool in screening and follows up of Prostate cancer, but its diagnostic validity is uncertain in hemodialysis patients. We studied the effect of high-flux membrane hemodialysis on serum tPSA concentration.

#### **Methods:**

Total of 75 patients with mean age of (50.5±2.17 years) were included. tPSA and Hct serum levels were measured before and after hemodialysis with high flux membranes. Hct serum level was measured to define the hemoconcentration level after hemodialysis. The changes in tPSA serum level and Hct value were calculated. The correlation between the changes in the tPSA and Hct was investigated. The mean period of hemodialysis program was (36.8± 39 months) and all patients underwent standard hemodialysis: three times per week and four hours period for each session. Any patient with Pca or previous history of prostatic surgery or had liver insufficiency was excluded.

#### **Results:**

Significant increment in tPSA values after hemodialysis occurred; the mean values of tPSA before and after dialysis were (0.95±0.97 and 1.15±0.11) respectively (p =0.002). The pre- and post-hemodialysis Hct levels were (32.35±4.68 and 35.75±5.99) respectively (p=0.001). The percentage of changes in tPSA and Hct values after hemodialysis were 20% and 12% respectively. No significant correlation was detected between the changes in tPSA and Hct level (r=0.152, p=0.215).

#### **Conclusions:**

Hemodialysis resulted in statically significant elevation in serum tPSA level. Although hemoconcentration is the most valid explanation for the increment in tPSA serum level, statistically we couldn't document a significant correlation between tPSA and Hct changes. None of the patients had clinically significant elevation in tPSA value after hemodialysis which may mandate prostate biopsy. Therefore high flux membrane hemodialysis doesn't seem to compromise the diagnostic value of tPSA in hemodialysis patients.