

## Original Research Article

**Incidental urological problems of hemodialysis patients**Ergün Şimşek<sup>1</sup>, Hikmet Köseoğlu<sup>2</sup>, Halime Çevik<sup>3</sup>, Binnur Tavash<sup>3</sup>, Erbey Tilkioğlu<sup>1</sup><sup>1</sup>Department of Nephrology, Faculty of Medicine, Başkent University, TURKEY<sup>2</sup>Department of Urology, Faculty of Medicine, Başkent University, TURKEY<sup>3</sup>Department of Radiology, Faculty of Medicine, Başkent University, TURKEY**\*Corresponding author**

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**Abstract:** We aimed to determine the types and frequency of incidental urological problems that could be encountered in the patients on the hemodialysis program for end stage renal disease. We retrospectively analyzed the hospital records of patients who had been undergoing hemodialysis program regularly within last 4 years. Their demographics, co-morbid diseases, schedules of dialysis program, previous reports of radiological imaging studies and total PSA values of male patients were noted down and analyzed. A total of 157 patients were undergoing dialysis program. 124 of these (79%) were previously had radiological imaging studies like abdominal ultrasonography and/or abdominal computed tomography performed for symptoms related to urology or other clinics. Their mean age was 62.9±14.0 years. 57% were male and the rest were female. Most of them (89%) had some sort of co-morbid diseases other than chronic renal failure. The most common (69%) urological incidental finding was simple renal cysts, most of which were multiple (74%). Mean largest renal cyst diameter was 27.6±18.0 mm. Urinary stone disease was present in 13% and only 2% had any degree of hydronephrosis. Mean largest stone diameter was 7.4±3.0 mm. Of the males 46% had been screened for PSA and of these ones screened for PSA, only three percent (one patient) had been defined as suspicious for prostate cancer and prostate biopsy had been suggested. Mean PSA levels had been measured as 1,50 ±2,04 ng/ml and mean prostate weight were determined as 45,36 ± 21,19 grams. One patient was diagnosed as RCC and one another as bladder cancer. Incidental urological diseases seem to be more prevalent than anticipated but mainly to be benign and diagnostic work up demanding on symptoms rather than routine work up seems to be more feasible in this group of patients or at least ultrasonography seems to be feasible alone for diagnostic work up.

**Keywords:** urological problems, hemodialysis, hydronephrosis, ultrasonography.

**INTRODUCTION**

In the related guidelines of the relevant societies urological evaluation other than patients' history and physical examination has not been warranted on the routine basis [1, 2]. However, some differences are present in the recommended practices, like routine X-ray KUB to rule out prevalent stone disease [2,3], routine renal ultrasonography because of the high prevalence of renal cell carcinoma in this patient group [4] and various conflicting VCUg recommendations in terms of routine work-up [4,5,6].

In this retrospective study we aimed to determine the types and frequency of incidental urological problems which might be encountered in the hemodialysis patients with end stage renal disease to clarify the necessity of routine urological work-up versus on demand related to patients' history.

**METHODS & MATERIALS**

The hospital records of the patients who had been undergoing hemodialysis program for end stage

renal disease regularly between 2011 and 2015 were analyzed retrospectively. The demographics, co-morbid diseases, schedules of dialysis program, previous reports of radiological imaging studies of all included patients and PSA values of male patients were noted down and analyzed.

Statistical data analyses were performed using SPSS statistics software (SPSS Statistics for Windows, Version 17.0; SPSS Inc., Chicago, U.S.A). p value was set as <0.05 for significance.

**RESULTS**

A total of 157 patients were undergoing dialysis program. They were hemodialysis program for a mean of 54.8 ± 65.7 months (range 3-324 months) with a frequency of 2.9 ± 0.3 times per week. 124 of the patients (79%) had performed radiological imaging studies like abdominal ultrasonography and/or abdominal computed tomography performed for symptoms related to urology or other clinics. Their mean age was 62.9±14.0 years. 57% were male and the

rest were female. Most of them (89%) had a number of co-morbid diseases other than chronic renal failure (Figure 1.). The most common (69%) incidental finding was simple renal cysts, most of which were multiple (74%). Mean largest renal cyst diameter was 27.6±18.0 mm. Urinary stone disease was present in 13% and only 2% had any degree of hydronephrosis. Mean largest stone diameter was 7.4±3.0 mm. Of the males 46% had

been screened for PSA and of these ones screened for PSA, only three percent (one patient) had been defined as suspicious for prostate cancer and prostate biopsy had been suggested. Mean PSA levels had been measured as 1.50 ±2.04 ng/ml and mean prostate weight were determined as 45.36 ± 21.19 grams. One patient had been diagnosed to have renal cell carcinoma and one another had bladder cancer.

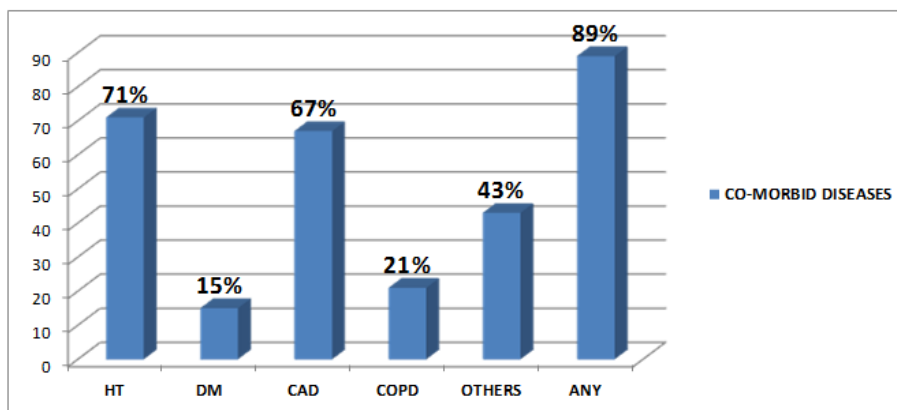


Fig-1: Co-Morbid Diseases

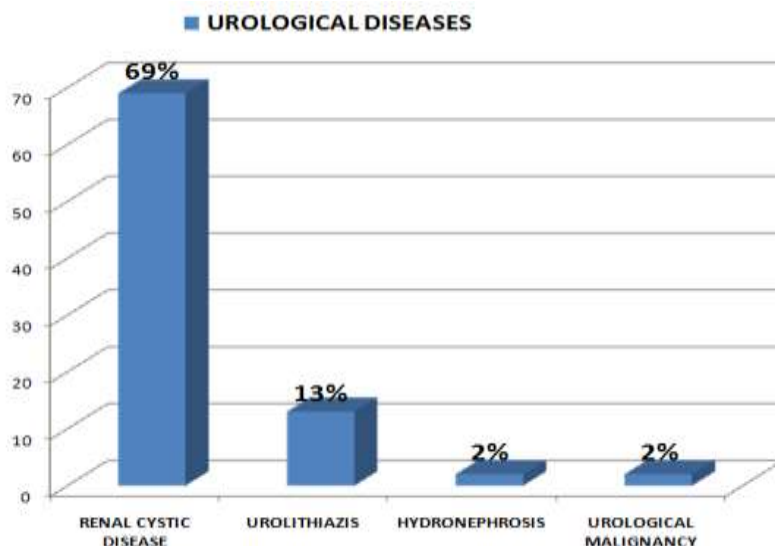


Fig-2: Urological Diseases

**DISCUSSION**

This retrospective study determines the types and frequency of incidental urological problems in the hemodialysis patients who are potential candidates for renal transplantation. In turn, it checks the feasibility of relevant societies’ guidelines on this subject, at least in the population of the present study conducted.

Previous relevant guidelines and studies conducted for the cost-effectiveness and necessity of some diagnostics work-ups have in common commented to perform these studies in patients on demand in case of relevant urological history; signs or symptoms related any urological disease [1-6].

Although cases with end stage renal disease (ESRD) have been reported to be secondary to lower urinary tract abnormality in as low as 6% [8], lower urinary tract abnormality was found in a significant percentage (25%) of patients with ESRD in a study in which diagnostic work up included cystoscopy, cystometry, voiding cystography, bilateral retrograde pyelograms, history and physical examination, and appropriate serum and urinary studies [9]. In our study the incidence of urological pathology was higher than reported with simple renal cysts (69%), urinary stone disease (13%), hydronephrosis (2% ) and urological malignancy [2]. Our study was retrospective and the diagnostic work up was performed in accordance with previous guidelines therefore in included mainly

ultrasonography alone for radiological diagnostic work up.

Patients on hemodialysis for ESRD have defunctionalized bladders with probably low bladder capacities. Regarding the bladder function, abnormalities of different degrees were reported to be in 77% of patients with ESRD, including bladder hypersensitivity (31%), poor bladder compliance (38%), detrusor instability (25%) and detrusor-sphincter dyssynergia (33%) [9]. Our study did not include any specific diagnostic work up to rule out bladder function however, not all bladder dysfunction types but just low bladder capacity was reported not to be a major issue for transplantation patients[10].

In our study we also report mean PSA levels and mean prostate weights of patients with ESRD, which were mainly within normal ranges for relevant age groups.

## CONCLUSIONS

Incidental urological diseases seem to be more prevalent than anticipated but mainly to be benign and diagnostic work up demanding on symptoms rather than routine work up seems to be more feasible in this group of patients or at least ultrasonography seems to be feasible alone for diagnostic work up.

**Conflicts of Interest:** All authors do state that no financial or commercial interests from any drug company or others were taken and there is no relationship of authors that may pose conflict of interest

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