

# A Year Screening Study According to the Renal Functions



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The slogan of the IFKF and ISN for the "World Kidney Day 2007" has been selected as "Are your kidneys O.K.?". With this slogan and activities held all around the world, the main goal is promoting early detection and prevention of Chronic Kidney Disease (CKD), by stimulating awareness and increasing knowledge of the public, about the organs "Kidneys" and their health.



## Dr. Ridvan Ege Hospital, Ankara



The aim of this preliminary study was to prepare a database of the patients with CKD evaluated and treated in our university hospital and by reaching, getting them enrolled into follow-up of the department of Nephrology.



## PATIENTS AND METHODS

The initial part of this study is essentially a retrospective and descriptive analysis of the patients with CKD, evaluated/treated both on an out-patient or an in-patient basis during the period February 1st 2006 – February 1st 2007.

By using our computer based "Laboratory Database", the serum creatinine (SCr) values of the patients were obtained. The patients with an elevated SCr (SCr > 1.2 mg/dL) remaining stable over a three months period were elected for the "CKD Database". With a second step of "Laboratory Database" search, the Blood Urea Nitrogen (BUN), Fasting Plasma Glucose (FPG), HDL Cholesterol (HDL-C), LDL

Cholesterol (LDL-C), and Triglyceride (TG) measurements together with Urine Analysis (UA) results were obtained for these patients.

Both the demographic and clinical characteristics and Blood Pressure (BP) measurement readings of these patients were recruited by a hospital-file search. A minimum of three BP measurements for patients evaluated/treated on an out-patient basis, and a minimum of five BP measurements for hospitalized patients were sought for analysis.

## FINDINGS

During the period February 1st 2006 – February 1st 2007, the total number of patients with SCr measurement was 5571, the number of patients with SCr values > 1.2 mg/dL was 182 (3.27 %), and the number of patients with elevated SCr values whose hospital-files could have been reached was 168. The number of patients evaluated/treated on an out-patient basis was 46 (27 %), while the number was 122 (73 %) for hospitalized patients.

Age distribution of the patients was between 19 – 93, while the median age was 68.05 with a standard deviation of 13.77 (Figure 1). The 168 patients consisted of 121 male (72 %) individuals, while there were 47 female (28 %) patients (Figure 2). Educational status of the patients is presented in Figure 3.

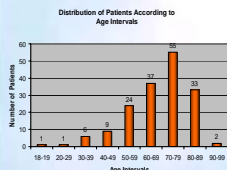


Fig. 1. Distribution of the patients according to their ages.

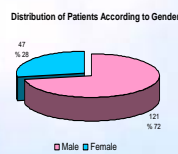


Fig. 2. Distribution of the patients according to gender.

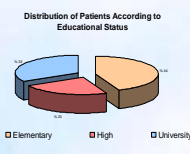


Fig. 3. Distribution of the patients according to their educational status.

The distribution of the patients according to their SCr and BUN measurements are presented in Figure 4 and Figure 5 respectively.

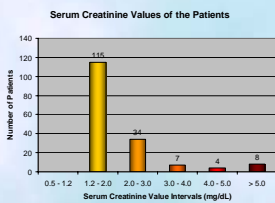


Fig. 4. SCr values of the patients.

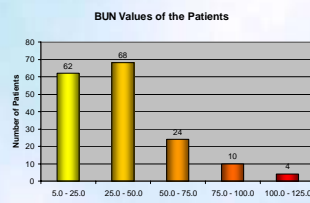


Fig. 5. BUN values of the patients.

The glucose and lipid metabolism status of the patients are presented in Figure 6 through Figure 9. Among the 168 patients, there were 27 individuals (16.07 %) on statin therapy. Also, elevated levels (> 7.5 mg/dL) of uric acid were determined in 41 (43.61 %) of the 94 patients with measured uric acid values.

## Discussion

The median age of our CKD patient population was 68.05 with a SD of 13.77. The glomerular filtration rate (GFR), physiologically starts decreasing by the third and fourth decades of life. The rate of this physiological decline increases with renal insults and is shown to be directly correlated with BP values.

As a clear fact, the most important mortality cause in CKD patients is shown to be cardiovascular events. Diabetes and associating lipid abnormalities is a major risk factor for atherosclerosis and also if uncontrolled causes a progressive renal disease. The high percentage of blood glucose regulation abnormality in our population (47 %) seems to be a very important factor that must be taken into consideration during the follow-up of these patients.

The presence and degree of proteinuria is shown to carry a diagnostic and prognostic value in CKD patients. The percentage of proteinuria in our patients was 27 %, and it showed an important association with blood glucose abnormality.

For the definition of CKD, either (1) reduced excretory function with an eGFR <60mL/min/1.73 m<sup>2</sup>, or (2) the presence of albuminuria (>300 mg/d or 200 mg/g creatinine) is used.

In our CKD patient population, diabetes and hypertension appeared to be the most common causes of CKD. This finding is consistent with the data of other major studies.

Following the completion of the database, all the 168 patients were reached by phone calls and were questioned about their present health. They were also invited to enter the follow-up program specifically designed for CKD patients. Until recently, 15 of these patients appeared at our clinic. Clearly this number is much lower than expected, and our efforts is continuing to expand the number of CKD patients entering our follow-up program.

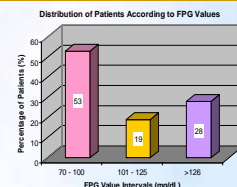


Fig. 6. FPG values of the patients.

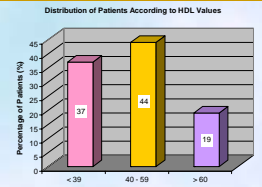


Fig. 7. HDL-C values of the patients.

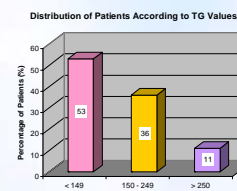


Fig. 8. LDL-C values of the patients.

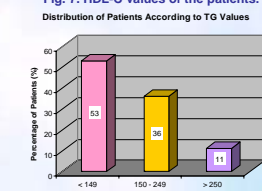


Fig. 9. TG values of the patients.

The presence of proteinuria in UA is presented in Figure 10. When the patients were grouped as FPG ≤ 100 mg/dL and FPG ≥ 101 mg/dL, there appeared an important association with the FPG group and the presence of proteinuria (p < 0.05).

An etiological classification of the patients with respect to their potential CKD etiologies is presented in Figure 11.

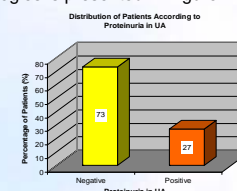


Fig. 10. Proteinuria status of the patients.

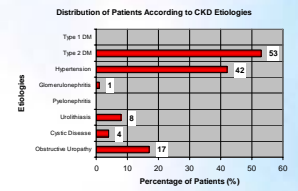


Fig. 11. CKD etiologies of the patients.

The presence of hypertension among the patients with respect to medical history and the success of BP control among the hypertensive patients are presented in Figures 12 and 13 respectively.

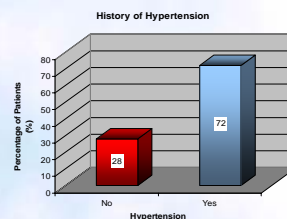


Fig. 12. Hypertensive status of the patients with respect to medical history.

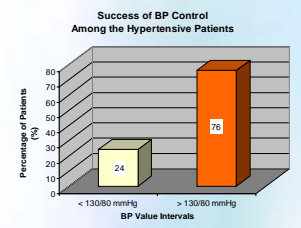


Fig. 13. Success of BP Control among the hypertensive patients.

## CONCLUSIONS

The data of this study has been collected before the initiation of Nephrology Division. This preliminary work showed that the medical approach for CKD patients was not complete and carried important gaps. All of these facts motivated us to organize a specific unit for the follow-up and medical management of CKD patients.

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