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Original Research Article

Role of Urine Creatine Level in Newly Diagnosed Hypertensive Patients for Early Digonosis of Renal Diseases- A Hospital Based Study

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ABSTRACT
Hypertension is a chronic medical conditionin which the blood pressure in the arteries is elevated. Complication of hypertension manily affect the Heart, Brain, Eyes and Kidneys. Creatinine is a waste produced formed by the metabolism of protein. Creatinine is the substance which depend on GFR to excrete through urine and also act as marker for renal diseases. In the present study, the determination of urine creatinine level in newly hypertensive patients along with normal individuals has been done. The level of urine creatinine level is significantly lower as compared with that of normal individual. The ratio of male patients have higher values than of females who were diagnosed as newly hypertensive patients. The detection of Urine creatinine indicate the renal dieases which is the remarkable marker for the detection of renal function test along with GFR rate. The damage of kidney due to alcohol, toxic substances, etc. The life style of the individual should be change so that it will not cause any renal dieases. The present study also help the physician for the detection, preventation and treatment against various renal dieases.
Keywords: *Creatinine,Renal Dieases, Hypertyension.*

INRTODUCTION

The important of renal disease has been recognised since Hippocrates made the association between bubbles in the urine and disease of the kidney in 400 BC.(1) Hypertension is a chronic medical condition in which the blood pressure in the arteries is elevated.(2) Complication of hypertension mainly affect the Heart, Brain ,Eyes and Kidneys. It may associated with the diabetics and hypertension. Hypertensive nephropathy is a type of kidney diseases which occur due to high blood pressure. Creatinine, GFR also help to detect the abnormality in renal function due to hypertension along with Proteinuria and PCI index. Creatinine is a waste produced formed by the metabolism of protein. Creatinine is the substance which depend on GFR to excrete through urine and also act as marker for renal diseases.

AIMS & OBJECTIVES

- Prevalance of renal disease patients due to increased level of urine creatinine in newly hypertensive patients.

- To determine the urine creatinine level in newly diagnosed hypertensive patients.
- Interpretation and assessment of renal function.

MATERIALS & METHODS

In the present study 100 patients aged 25 to 65 who were diagnosed as newly hypertensive and were confirmed by the estimation of blood pressure on two accasion and questionnaire, were recruited from medicine OPD and the IPD of NIMS Medical college and Hospital. Same number of healthy patients who were aged and sex matched with the newly hypertensive patients, were selected as the control.

Estimation of Urinary Creatinine (Modified Jaffe's Alkaline Picrate Method)[3]

Table 1: Reagents Composition

R.1(Picric reagent)	Picric acid	17.5mmol/L
R.2(Alkaline reagent)	Sodium hydroxide	0.29mol/L
Creatinine Calibrator	Creatinine aqueous Primary calibrator	2mg/dl

Table 2: Procedure Tabulation

Test Tubes	Working Reagents (ml)	Calibrator (µl)	Urine sample (µl)
Blank	1	-	-
Calibrator	1	100	-
Test	1	-	100

- Mix and start the stopwatch.
- Wavelengh=520nm.
- Read the absorbance (A1) after 30 seconds and after 90 seconds.
- Calculate: ΔA=A2-A1

Calculation:

Creatinine (mg/dl)=(Sample/Calibrator)x2 (calibrator concentration)

Table 3: Reference value of urine creatinine

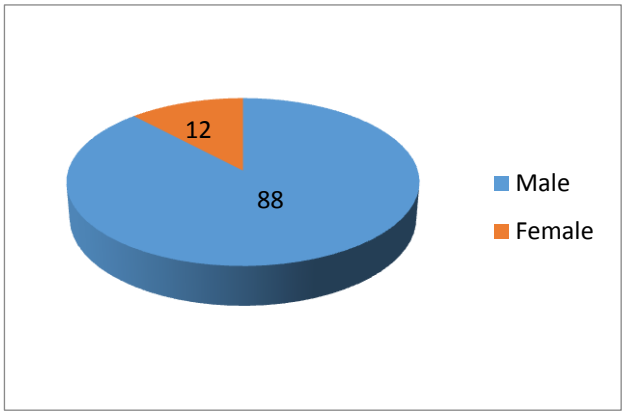
Urine Creatinine	Males	Females
mg/L/24 hours	10-20	8-18
µmol/L/24 hours	88-177	71-177
Mmol/L	0.08-0.17	0.07-0.17

OBSERVATIONS AND RESULTS

Table 4: Distribution of total no. of patients (Newly Diagnosed Hypertensive Patients)

Total no. of patients	Male	Female
100	88	12

Figure 1: Distribution of total no. of patients (Newly Diagnosed Hypertensive Patients)



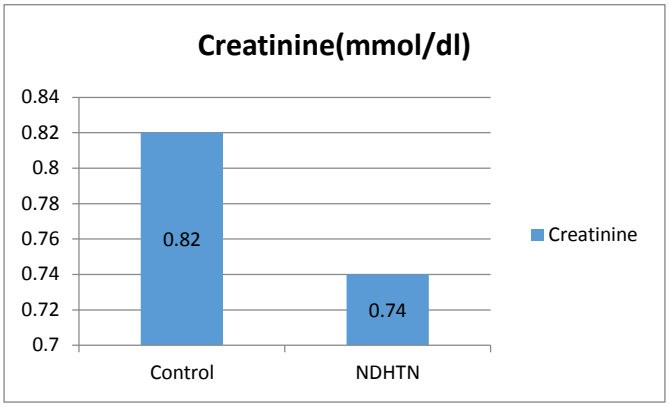
The number of male patients was more than that of female patients having newly diagnosed patients and the value was 88 and 12 respectively.

Table 4: Comparision of urine creatinine level between control and newly hypertensive group by unpaired t-test.

Parameter	Control group (n=100)	Newly Hypertensive Group (n=100)	p-value
Urinary Creatinine (mmol/dl)	0.82±0.42	0.74±0.11	>0.005

Values in mean ± SD.

Figure 2: Comparision of urine protein between control and newly hypertensive group by unpaired t-test.



The mean urine creatinine concentration which was found in newly hypertensive group was 0.74±0.11 mmol/dl whereas for control group it's was 0.82±0.42 mg/dl and creatinine excreation in spot urine samples in newly hypertensive group and control group was found significantly lower, with p value of 0.313.

DISCUSSION & CONCLUSION

The excreation of creatinine is reasonably constant throughout the day when the GFR is stable. The level of urine creatinine level indicate the renal diseases. In the present study, the level of urine creatinine is lower which indicate the renal diseases. Renal nephropathy may occur due to prolonged cases opf hypertension which cause damage the renal function and also cratinine is among the best marker to detect the presence of renal diseases. The level of Creatinine is due any cause it may due to alcoholism, toxic substances like pesticides, insecticides and due to high doses of drugs for a long time. The present study is useful for the diagnoses of renal diease and also help the physicians for the better treatment.

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