EFFECTIVENESS OF ROUTINE URINE ANALYSIS OF PATIENT ATTENDING RURAL HEALTH CENTERS IN ABBOTTABAD

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Background: Renal diseases may be discovered accidentally during routine urinalysis. This study was done to see the significance of urinalysis and study the magnitude of abnormal urinalysis in patients with no symptoms of renal disease. **Methods:** From 15th February to 16th March 2005, a total of 1000 samples of urine were collected from the patients attending three rural health centers of Abbottabad. Dipstick Method was used for urinalysis. **Results:** there were 600 males and 400 female patients. The age ranged from 1 to 55 years. Proteinuria was present in 2.3%, hematuria in 4.8 % patients, pyuria in 10.2% and glycosuria in 2% patients. **Conclusion:** In our setup routine urine analysis should be performed in all patients to identify the presence of unrecognized renal diseases which may benefit from simple therapeutic measures.

Keywords: Urine, urinalysis, Proteinuria

INTRODUCTION

Urinary tract diseases are a growing health problem. Urinary tract diseases are often diagnosed in patients with no symptom.[1] An abnormal urine test may be the earliest warning of a significant renal disease.[2] Because of its simplicity, routine urine analysis is the best way in early detection of most frequent conditions like proteinuria, hematuria or glycosuria at a very low cost.[3,4] This is useful in selecting asymptomatic patients with renal diseases who may benefit from early treatment, counseling or who require long term follow up.[5] This study was done to see the value of routine urine analysis and study the magnitude of abnormal urinalysis in patients with no symptoms of urinary tract disease.

MATERIAL AND METHODS

This cross sectional study was done from 15th February to 16th March 2005. A total of 1000 samples of urine were collected from all the patients attending the three rural health centers in Abbottabad. Pregnant and menstruating patients were excluded. Patients with known renal disease were also excluded. A clean catch mid stream urine specimen was obtained in sterile containers. A dipstick method (Multistix, Bayer) was used for urine testing.

RESULTS

1000 urine samples were screened in the study period. There were 600 males and 400 females. The age ranged from 1 to 55 years. Abnormal urine findings are shown in table-1. Proteinuria was present in 2.3%, hematuria in 4.8 % patients, pyuria in 10.2% and glycosuria in 2% patients. Pyuria was seen more in females than in males. Glycosuria was seen more in patients above 40 years of age.

DISCUSSION

Routine urinalysis of asymptomatic patients has been shown to detect a variety of urinary tract disorders.[6,7] A number of studies have demonstrated the usefulness of dipstick in screening asymptomatic patients.[8,9] Urine dipstick is sensitive for detection of proteins, blood and pus cells.[10,11] Carl et al screened 2100 healthy adults by dipstick method and found that 10% adults had at least one urine abnormality detected.[12] Because of its simplicity, a general practitioner or a nurse can carry it out. This would reduce the workload on the laboratories.

The results of this study are comparable to some other studies. Oviasu et al reported that routine urinalysis of aymptomatic adolescents in Nigeria detected proteinuria in 4.7% and hematuria in .55% adolescents.[13] However in a study of urinalysis in primary health care centers in Saudi Arabia, Al-Homrany and his colleagues found that proteinuria was present in 11.7% patients, hematuria in 11%patients, glycosuria in 4.7% patients and leucocytes in 10.6% patients.[14] This appears significantly higher than this study. So this significant prevalence of urinary tract abnormalities justifies routine urinalysis of patients in primary health care centers.

The presence of proteinuria is 2.3% in this study. Proteinuria is a strong independent predictor and risk factor of End Stage Renal Disease (ESRD). Therefore asymptomatic proteinuria warrants further work up and intervention to reduce the incidence of ESRD.[15] Similarly a long term follow up of patients with asymptomatic hematuria is needed. 16 In this study pyuria was seen in 66 (64.5%) females and 36 (35.5%) males. This also supports the findings of other studies where pyuria is seen more in females.[14]

This study shows that an effective screening urinalysis program at primary health care level can

Table-1: Distribution of abnormal urinalysis by sex and age groups

Age	Sex	No.	Protein	Blood	Leucocytes	Glucose		
1-10	M	50	2(4%)	2(4%)	2(4%)	0	10	6
	F	30	1(3.3%)	1(3.3%)	2(6.6%)	0		4
			3(3.77%)	3(3.77%)	4(5%)			
11-20	M	125	3(2.4%)	5(4%)	8(6.4%)	0	34	16
	F	90	2(2.22%)	4(4.44%)	12(13.33%)	0		18
			5(2.32%)	9(4.2%)	20(9.30%)			
21-30	M	120	4(3.33%)	5(4.16%)	7(5.83%)	0	36	16
	F	80	2(2.5%0	4(5.0%)	13(16.25%)	1(1.25%)		20
			6(3.0%)	9(4.5%)	20(6.6%)			
31-40	M	115	2(1.74%)	5(4.35%)	5(4.3550	2(1.74%)	34	14
	F	80	1(1.2550	4(5%)	14(17.5%)	1(11.25%)		20
			3(1.54%)	9(4.61%)	19(9.74%)	3(1.54%)		
41-50	M	110	2(1.82%)	5(4.54%)	6(5.45%)	4(3.64%)	39	17
	F	70	1(1.43%)	4(5.71%)	13(18.6%)	4(5.71%)		22
			3(1.66%0	9(5%)	19(10.55%)	8(4.44%)		
50 +	M	80	2(2.5%)	5(6.25%)	8(10%)	4(5%)	40	19
	F	50	1(2.0%)	4(8%)	12(24%)	4(8%)		21
			3(2.31%)	9(6.92%)	20(15.4%)	8(6.15%)		
Total	M	600	15(2.5%)	27(4.5%)	36(6%)	10(1.66%)	193	88
	F	400	8(2.0%)	21(5.25%)	66(16.5%)	10(2.5%)		105
		1000	23(2.3%)	48(4.8%)	102(10.2%)	20(2%)		193

identify patients with asymptomatic renal diseases for further evaluation and disease modifying intervention. The rural health centers can participate by performing urinalysis of all patients attending their centers Moreover the public should be educated in order to have health check for asymptomatic renal disease.

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