DISCUSSION
DISCUSSION

This study was conducted in Bundelkhand region with the help of renal disease detection camps. In these camps, all age and sex groups patients attending the renal camps were screened by urine routine and microscopic examination.

A total of 279 patients of various age and sex groups were screened by urine examination. Of these 279 cases, 172 were males and 107 were females making a male to female ratio of 1.6:1. For convenience of screening, the study population was divided into discrete study groups according to age. The maximum number of patients who attended the renal camps belonged to the age group 21-40 years and minimum to 61 and above years group.

A very similar study has been done by N. Vidya Acharya et al. This study conducted in the city of Bombay involved the study of 430 subjects. A similar division according to age was also done in this study. In addition in this study done by N. Vidya acharya et al, the subjects attending the renal camps were divided further into low socio economic group and middle socio economic group. In the present study in Bundelkhand region however, no such division could be been done, because almost all patients who attended our renal camps belonged to the low economic group thus the scope for comparison was minimal.

In the study asymptomatic urinary abnormalities in Bundelkhand region, out of 279 patients screened by urine routine microscopy examination 68 patients turned out to have detectable urinary abnormality
in their urine. These included symptomatic cases, follow up cases and fresh asymptomatic cases. These 68 cases out of 279 made up 24.37%. In the study of N. Vidya acharya et al., out of 430 patients screened, 151 had detectable urinary abnormalities, this made up 45.5% of the study population. Thus as compared to this 45% of detectable urinary abnormality in the Bombay study, the present study here in Bundelkhand region had 24.37% of detectable urinary abnormality. These 24.37% cases of urinary abnormality included proteinuria, hematuria, Pyuria, crystalluria and Glycosuria. In the study conducted in Bombay however, the only urinary abnormalities stressed on were hematuria, proteinuria and ketonuria, while pyuria and crystalluria were not screened for. In the study done by N.Vidya Acharya et al., the method used to detect asymptomatic urinary abnormalities was dipsticks examination of urine, while method used the present study here was routine and microscopic examination of urine.

Amongst the 68 patients out of 279 detected to have urinary abnormalities, 50 (17.9%) cases were asymptomatic. The maximum prevalence of patients with asymptomatic urinary abnormalities was seen in the age group 61 and above (30%) and the minimum prevalence in 13-20 years age group (11.11%). In this study of 279 people 143 were males and out of these 29 had asymptomatic urinary abnormalities (20.27%), while 86 were females out of which 21 were having asymptomatic urinary abnormalities (24.11%). Thus females were found to have asymptomatic urinary abnormalities a little more frequently as compared to males. In males asymptomatic urinary abnormalities were most prevalent in the age group 61 and above but maximum cases were seen in 21-40 years age group, while in females it was most prevalent in the group 41-60 years with maximum number of cases in 21-40 years
group. Minimum prevalence was seen in 13-20 years age group in both sexes.

Amongst various asymptomatic urinary abnormalities, asymptomatic proteinuria was found in 19 cases out of 50 cases of asymptomatic urinary abnormalities thus making 38% of this group (19 out of 50). Out of these 19 patients, 14 had isolated proteinuria making 28% asymptomatic urinary abnormalities (14 out of 50). Considering these 19 cases of proteinuria and 14 cases of isolated proteinuria as a percentage of the whole population screened (279 people), proteinuria was seen in 6.9% (19 out of 279) and isolated proteinuria in 5% (14 out of 279). In the pediatric age group 0-12 years number of cases of proteinuria were 2 and number of total people screened in this age group were 25, thus the prevalence of proteinuria was 8% (2 out of 25) in this study as compared to 4% in the study done by Pygia M.J., Lott JA et al who studied 6197 school children in 1974 in Japan. In the study done by N. Vidya acharya et al, the prevalence of proteinuria was 23.2% in the whole study group and of isolated proteinuria was 7.2%. Amongst the causes of asymptomatic proteinuria, Hypertension was seen in 42.1%, Diabetes material in 21.2%, Chronic glomerulo nephritis in 15.8%, Renal Amyloidosis in 5.2%, Benign prostatic hyperplasia in 5.2%, Focal segmental glomerulosclerosis in 5.2% and IgA Nephropathy in 5.2% cases of Asymptomatic proteinuria.

Asymptomatic Pyuria was detected in 26 patients out of 50 patients with asymptomatic abnormality making 52% (26 out of 50). Out of there 26 patients, 17 had isolated pyuria making 34% (14 out of 50). Maximum number of Pyuria in both sexes was seen in the age group 21-40 years (sexually active group). Amongst all the causes of Asymptomatic pyuria, urinary tract infection was seen in 42.3% (11 out of 26), Diabetes mellitus
in 23.1% (6 out of 26), Nephrolithiasis in 15.3% (4 out of 26), Benign prostatic hyperplasia in 15.3% (4 out of 20) and Vesico ureteral reflux in 3.8% (1 out of 26). In the study of N.V. Acharya et al, pyuria was not screened for and nor has it been screened in other studies, so a comparison could not be made as to what prevalence of asymptomatic pyuria is there in other parts of the country or world.

Asymptomatic Glycosuria was detected in 8 cases out of all patients (50) of asymptomatic urinary abnormalities, thus it was 16% (5 out of 50) while isolated glycosuria made up 8% (4 out of 50) of all asymptomatic urinary abnormalities. Majority of cases detected were in age group 21-40 and 41-60 years but maximum prevalence was for the age group 61 and above. Only 1 case was seen in 0-12 years (pediatric) age, and the cause was Fanconi’s syndrome. In all other cases, the cause of Glycosuria turned out to be Diabetes mellitus. Therefore causes of glycosuria were, Diabetes mellitus 87.5% (7 out of 8) and Fanconi’s syndrome 12.5% (1 out of 8). Glycosuria when considered as a fraction of the whole population screened, was found to be 2.86% (8 out of 279). The study of V.N. Acharya et al showed a prevalence of glycosuria in 4.4%.

Asymptomatic Crystalluria was detected in 6 cases out of 50 cases, thus prevalence was 12% (6 out of 50). Maximum number of cases were detected in the age group 21-40 years and was exclusively detected in male population in this study. Out of all cases asymptomatic cryptalluria detected (6) majority were due to Nephrolithiasis 83.3% (5 out of 6) and another less frequent cause was Hyperparathyroidism 16.7% (1 out of 6).

Amongst all cases of Asymptomatic urinary abnormalities (50), hematuria was seen in 5 cases thus making 10% (5 out of 50) and isolated
hematuria was seen in 1 case 2% (1 out of 50). Maximum number of cases of hematuria were seen in the 21-40 years age group (3 cases), but the prevalence was most in pediatric age group (25% of all asymptomatic urinary abnormalities. Considering it as a percentage of total population screened the prevalence was 1.79% (5 out of 279). In the pediatric age group the prevalence was 8% (1 out of 25 cases). In the study by Vidya N Acharya et al, the prevalence of isolated proteinuria was found out to be 3.9% and that of asymptomatic hematuria with proteinuria was found out to be 16.6%. Amongst the causes of Asymptomatic hematuria, Nephrolithiasis was seen in 40% (2 out of 5), while IgA Nephropathy, Hypertensive nephropathy, and Benign prostatic hyperplasia made 20% each (1 out 5 cases each).

Discussing all Asymptomatic urinary abnormalities together, it was seen that, out of 50 cases of Asymptomatic urinary abnormalities 26 had Asymptomatic pyuria thus making 52% of all Asymptomatic urinary abnormalities, 19 had asymptomatic proteinuria making 38% of all Asymptomatic urinary abnormalities, 8 had asymptomatic glycosuria thus making 16% of all Asymptomatic urinary abnormalities, 6 had asymptomatic crystalluria thus making 12% of all Asymptomatic urinary abnormalities, 5 had asymptomatic hematuria making 10% of all Asymptomatic urinary abnormalities.

Considering each type of Asymptomatic urinary abnormalities as a percentage of the whole population screened, pyuria was found in 9.3% of all cases (26 out of 279), proteinuria in 6.8% (19 out of 279), glycosuria in 2.8% (8 out of 279), crystalluria in 2.15% (6 out of 279) and hematuria in 1.79% (5 out of 279). A variety of diseases were detected as causes of
asymptomatic urinary abnormalities in this study the details of which has been discussed as below.

Of all diseases, there were 13 cases of Diabetes mellitus of which 6 were males and 7 were females. Thus out of 50 cases of asymptomatic cases detected 13 were due to diabetes making 26 % (13 out of 50). Considering Diabetes in context to the whole study group, it made up 4.65 % (13 out of 279). Out of Total 13 cases 4 presented as Glycosuria (30.76%); 3 presented as Proteinuria (23.07%); 2 presented as Pyuria (15.38%); 3 presented as Glycosuria +Pyuria (23.07%); 1 Presented as Glycosuria +Proteinuria (7.7%). Most common presentation was as glycosuria (30.76%) and least common was as glycosuria + proteinuria (7.7%).

Another commonly detected disease as cause of asymptomatic urinary abnormalities was asymptomatic urinary tract infection. There were total 11 cases of asymptomatic Urinary tract infection detected. Out of these 2 were males and 9 were females. Thus Urinary tract infection was 22% of all asymptomatic urinary abnormalities (11 out of 50 cases). Considering asymptomatic Urinary tract infection in the whole study population, it made up 3.94 % (22 out of 279 cases). Total 11 cases of asymptomatic Urinary tract infection were detected in this study and all (100%) of them presented as pyuria.

There were 7 cases of asymptomatic Nephrolithiasis detected in this study. Out of these all of them were males. Thus asymptomatic Nephrolithiasis made up 14% (7 out of 50 cases) of asymptomatic urinary abnormalities. Nephrolithiasis was seen in 2.51% of total people screened (7 out of 279). Total 7 cases of Nephrolithiasis were detected, of which 2
presented as calcium oxalate crystalluria (28.57%) ; 1 as oxalate crystals + pyuria (14.28%) ; 1 as oxalate crystals + pyuria + hematuria (14.28%) ; 1 as oxalate crystals + hematuria + phosphate crystals (14.27%) ; and 1 as isolated hematuria (14.27%) . Most common presentation was as asymptomatic calcium oxalate crystals. Other presentations were calcium oxalate crystals with other abnormalities like hematuria, pyuria and phosphate crystals.

Out of 50 cases of asymptomatic abnormalities, Hypertensive nephropathy was detected in 7 cases. Out of these 5 were males and 2 were females. Thus Hypertensive nephropathy made up 14% (7 out of 50) of all asymptomatic urinary abnormalities. Hypertensive nephropathy was seen in 2.51% (7 out of 279) of total patients screened. Of total 7 cases detected, 6 presented as proteinuria (85.77%) and 1 presented as proteinuria with hematuria (14.23%). Most common presentation was as proteinuria.

There were 3 cases of chronic glomerulonephritis seen out of 50 cases thus making 6% (3 of 50) of all asymptomatic urinary abnormalities. All cases were males. It was seen in 1.07% (3 out of 279 cases) of the study population. Total 3 cases detected and all (100%) presented as proteinuria.

There were 4 cases of asymptomatic Benign prostatic hyperplasia making 8% (4 out of 50) of all asymptomatic urinary abnormalities. All these cases were males. Considering it in the total population screened, it was seen in 1.43% of the total study population (4 out of 279). Total 4 cases detected 2 presented as pyuria (50 %) ; 1 as pyuria + proteinuria (
25%); and 1 as proteinuria + hematuria (25%). Most common presentation was as pyuria.

Only 1 case of Renal Amyloidosis was seen, thus making 2% of all asymptomatic urinary abnormalities (1 out of 50). This case was male. Considering the total study population, Renal Amyloidosis was seen in 0.35%(1 out of 279). This case presented as proteinuria.

Only 1 case of Hyperparathyroidism was seen, thus making 2% of all asymptomatic urinary abnormalities (1 out of 50). This case was male. Considering the total study population, Hyperparathyroidism was seen in 0.35%(1 out of 279). This case presented as oxalate crysatalluria.

Only 1 case of IgA Nephropathy was seen, thus making 2% of all asymptomatic urinary abnormalities (1 out of 50). This case was female. Considering the total study population, IgA Nephropathy was seen in 0.35%(1 out of 279). This case presented as hematuria and proteinuria.

Only 1 case of Fanconi's syndrome was seen, thus making 2% of all asymptomatic urinary abnormalities (1 out of 50). This case was female. Considering the total study population, Fanconi's syndrome was seen in 0.35%(1 out of 279). This case presented as glycosuria.

Only 1 case of Focal segmental glomerulosclerosis was seen, thus making 2% of all asymptomatic urinary abnormalities (1 out of 50). This case was female. Considering the total study population, Focal segmental glomerulosclerosis was seen in 0.35%(1 out of 279). This case presented as proteinuria.
Only 1 case of Vesiculo ureteral reflux disease was seen, thus making 2% of all asymptomatic urinary abnormalities (1 out of 50). This case was female. Considering the total study population Vesiculo ureteral reflux disease was seen in 0.35 % (1 out of 279). This case presented as pyuria.