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Bacteriological Profile and Antibiotic Resistance in Urinary tract infection patients.

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Objectives: To study the Bacteriological Profile and Antibiotic Resistance in patients with Urinary tract infection in Tertiary care teaching Hospital in western Rajasthan India.

Methods: Present study was carried out in tertiary care hospital in Jodhpur. Out of 215 patients 119 found to have culture positive We included patient of more than 15 years of age. Isolation and of uropathogens was done by a loopful of centifused sample was inoculated into the **Blood Agar** plate and **Cysteine Lysine Electrolyte Deficient agar** or **Mac-Conkey Agar** plate using the semi quantitative method.Antimicrobial susceptibility and resistance was tested by the standard Kirby Bauer's disc diffusion method. Standard inoculums adjusted to 0.5 McFarland was swabbed on Mueller Hintonagar and was allowed to soak for 2 to 5 minutes.

Results: Prevalence of UTI in females was (28.31%) and in males it was (26.8%) but statistically not significant.In this study E.coli was found to be the most prevalent (67.2%) bacteria. Second most common isolate is klebsiella pneumonia (18.5%) followed by Enterococcus species (5.9%), Pseudomonas species (3.4%), Staphylococcus saprophyticus (1.7%), Proteus species (1.7%), Enterobacteriaceae (1.7%). Overall co-trimoxazole was found most resistant (79%) antibiotic followed by cefuroxime (78.2%), ciprofloxacine (75.6%), Amoxycillin-clavulanate (74.8%).

Conclusions: The prevalence rate (55.3%) in this study is higher than prevalence rate in other studies like 24.9 % reported by Ali B et al and , 38.6% K.O. Akinyemi et al. As compared to study by Ali B et al we also have high rate of UTI in females. Commonest pathogen and its antibiotic resistance are also comparable to studies done by Kolawole et al, Shalini et al and Lavanya et al.

Figure 1: Prevalence of urinary tract infection in relation to gender.

Sex	Prevalence		Total	Chi-Square	P-Value	Interpretation
	Bacteriuria Absent	Bacteriuria Present				
Male	59 (27.5%)	58 (26.9%)	117 (54.7%)	2.97	.084	No Significant Difference
Female	37 (17.2%)	61 (28.4%)	98 (45.3%)			
Total	**96 (44.7%)**	**119 (55.3%)**	**215 (100%)**			

Figure 1: Prevalence of urinary tract infection in relation to gender.

Figure 2: Resistance rate of isolates in urinary tract infection

	Isolates							Total	P value
	E.coli	Klebsiella pneumonia	Enterococcus spp.	Pseudomonas spp.	Staphylococcus saprophyticus	Proteus spp.	Enterobacter spp.		
LEV	31 (38.75%)	9 (11.25%)	6 (7.5%)	2 (2.5%)	1 (1.25%)	0 (0%)	0 (0%)	49 (41.2%)	x^2=3.70 p=0.054
OFL	43 (53.75%)	13 (16.25%)	4 (5.0%)	3 (3.75%)	2 (2.5%)	0	2 (2.5%)	67 (56.3%)	x^2=1.89 p=0.168
CIP	58 (72.50%)	19 (23.75%)	7 (8.75%)	3 (3.75%)	2 (2.5%)	0	1 (1.25%)	90 (75.6%)	x^2=31.26 P < 0.0001
AMK	21 (26.25%)	16 (20.0%)	1 (1.25%)	2 (2.5%)	1 (1.25%)	0	1 (1.25%)	42 (35.3%)	x^2=10.29 P =0.001
CET	40 (50.0%)	15 (18.75%)	2 (2.50%)	3 (3.75%)	1 (1.25%)	0	2 (2.5%)	63 (52.9%)	x^2=0.412 P =0.521
NTF	25 (31.25%)	12 (15.0%)	2 (2.50%)	3 (3.75%)	1 (1.25%)	2 (2.5%)	1 (1.25%)	46 (38.7%)	x^2=6.12 P =0.01
TCC	45 (56.25%)	14 (17.5%)	2 (2.50%)	3 (3.75%)	1 (1.25%)	2 (2.5%)	0	67 (56.3%)	x^2=1.89 p=0.168
PT	27 (33.75%)	13 (16.25%)	2 (2.50%)	2 (2.5%)	0	2 (2.5%)	1(1.25%)	47 (39.5%)	x^2=5.25 p=0.02
CS	38 (47.50%)	14 (17.5%)	3(3.75%)	1 (1.25%)	2 (2.5%)	2 (2.5%)	0	60 (50.4%)	x^2=0.008 p=0.927
MRP	28 (35.0%)	9 (11.25%)	2(2.50%)	3 (3.75%)	2 (2.5%)	0	1(1.25%)	45 (37.8%)	x^2=7.06 p=0.007
TGC	23 (28.75%)	15 (18.75%)	1 (1.25%)	1 (1.25%0	1 (1.25%)	2 (2.5%)	0	43 (36.1%)	x^2=9.15 p=0.002
IMP	21 (26.25%)	5 (6.25%)	1 (1.25%)	3 (3.75%)	1 (1.25%)	1 (1.25%)	1(1.25%)	33 (27.7%)	x^2=23.60 p < 0.0001
AMC	60 (75.0%)	16 (20.0%)	6 (7.50%)	3 (3.75%)	1 (1.25%)	2 (2.5%)	1(1.25%)	89 (74.8%)	x^2=29.25 p<0.0001
CEFU	62 (77.50%)	15 (18.75%)	7 (8.75%)	4 (5.0%)	1 (1.25%)	2 (2.5%)	2 (2.50%)	93 (78.2%)	x^2=37.72 p<0.0001
COT	63 (78.75%)	19 (23.75%)	3 (3.75%)	3 (3.75%)	2 (2.50%)	2 (2.5%)	2 (2.50%)	94 (79.0%)	x^2=40.00 p<0.0001
Total	80 (67.2%)	22 (18.5%)	7 (5.9%)	4 (3.4%)	2 (1.7%)	2 (1.7%)	2 (1.7%)	119 (100%)	

Figure 2: Resistance rate of isolates in urinary tract infection