STUDY OF ANTIBACTERIAL RESISTANCE OF URINARY PATHOGENS IN CHANDRAPUR AREA OF MAHARSHTRA STATE

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Abstract:
Urinary tract infection is most common infection experienced by both human male and female of all ages. The retrospective study was conducted to find out the antibiotic resistance pattern in patients with urinary tract infection in Chandrapur area. Total 40 urine samples were cultured and sensitivity assay was analyzed. Of the total 40 urine samples 32 (80%) samples showed culture positive and 8 samples (20%) were culture negative. Out of 32 culture positive samples 25 (78.12%)samples shows E. Coli , 3 (9.37) samples shows Klebsiella , 2 (6.25%) samples Staphylococcus species and 2 (6.25%) proeus species. Most common organism isolated was E. coli. More than 80% isolates were sensitive to Gentamycin and Amikacin.

Keywords:
Urinary tract infection , Uropathogens , Antibiotic , Sensitivity pattern.

Introduction:

The Urinary tract infection with bacterial infection is most common and major health problem found in all ages and both the sexes. (Stamm WE , 2001). It is estimated that about 150 millions reports of urinary tract were recorded per anuum in world and 35 % of this recorded as nosocomial origin. (Drekonja DM,Johnson JR,2008). When the bacterial count in the urine is 1*105 or more in per ml urine sample , at that time patient is suffering from urinary tract infection.(Stammand WE and Hotoon ,1999). E. coli is most commonest causative organism of urinary tract infection . Staphylococcus , Klebsiella , Proteus , Pseudomonas species are vary rarely isolated . (Nicolle LE ,2001). Our aim to study to know the antibacterial resistance and susceptibility in the bacterial uropathogens isolated from the patients with urinary tract infection in chandrapur area.

Material and Method:

The present study includes the examination of total 40 urine specimens randomly collected from the indoor and outdoor patients from various hospitals and pathology laboratories situated in chandrapur area. Midstream clean catch urine specimens were collected in a sterile disposable plastic containers with aseptic condition. A loopful of urine sample from each of the patient was streaked on Nutrient agar medium. The plates were incubated overnight at 37 C. Pure , isolated each type of colonies was separately cultured on UTI isolation agar (Himedia) plates and antibiotic assay was carried out on Muller-Hinton agar medium. It was done on Muller –Hinton agar plates by Kirby-Bauer disc diffusion technique by using single antibiotic Himedia discs (Bauer AW et . Al. , 1966) following the Clinical Laboratory Standard Institute (CLSI) guidelines.(CLSI ;2007). The antibiotic discs used were Amikacin , Cefotaxim , Clindamycin , Colistin , Ciprofloxacin, Cefixime , Erytromycin, Gentamycin, Norfloxacin, Ofloxacin , Prulifloxacin.

Result and Discussion:

In the present study total 40 urine samples were studied. Of the total 40 urine samples 32 (80%) samples showed culture positive and 8 samples (20%) were culture negative. Out of 32 culture positive samples 25 (78.12%)samples shows E. Coli , 3 (9.37) samples shows Klebsiella , 2 (6.25%) samples Staphylococci species and 2 (6.25%) proeus species. Antibiotic assay was carried out for all 32 culture positive samples. Of these 26 (81.25%) isolates are sensitive to Amikacin and Gentamycin , Most 24 or more (75 % or more) isolates of the isolates were resistant to erythromycin , Clinamycin and , cefotaxime.

Urinary tract infection is more coomon infection are found in all ages of male and female and was reported in various studies of urinary tract infection (Andrade SS et. Al. 2006 , A. Moirangthem et al 2013). The present study shows the mo

Table 1. Distribution of sterile and infected urine samples.

Sr. No.	Bacteria	Number	Percentage
1	*E. coli*	25	78.12 %
2	*Klebsiella spp.*	03	9.37 %
3	*Staphylococcus spp.*	02	6.25 %
4	*Proteus spp.*	02	6.25 %

Table 2. Organisms isolated from urine sample

Samples (Total No. of samples (n=40)	Number	Percentage
Sterile samples	8	20 %
Infected samples	32	80 %

Table 3. Percentage of resistant pattern of UTI isolates.

Antibiotic	*E. coli (n=25)*	*Klebsiella spp. (n=3)*	*Staphylococcus spp. (n=2)*	*Proteus spp. (n=2)*
Amikacin	8.00%	00.00%	00.00%	00.00%
Cefotaxim	40.00%	100.00%	100.00%	100.00%
Clindamycin	20.00%	100.00%	100.00%	100.00%
Colistin	60.80%	100.00%	50.00%	50.00%
Ciprofloxacin	24.00%	66.66%	100.00%	100.00%
Cefixime	72.00%	33.33%	50.00%	100.00%
Erytromycin	72.00%	100.00%	100.00%	00.00%
Gentamycin	24.00%	33.33%	00.00%	00.00%
Norfloxacin	48.00%	33.33%	00.00%	50.00%
Ofloxacin	36.00%	100.00%	50.00%	00.00%
Prulifloxacin	44.00%	50.00%	50.00%	50.00%

Conclusion:

The present study concluded that the urinary tract infection is common to the large number of population and increases the risk antibiotic resistance . Proper selection of antibiotic helps the doctors to choose antibiotic therapy of urinary tract infection to overcome the problem of antibiotic resistance in patients

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