

ETIOLOGY OF DYSURIA IN PREGNANT WOMEN

CHITRA BIAT • PATIL C. S.

SUMMARY

125 pregnant women were investigated for detecting acute bacterial cystitis and acute vaginitis as a cause of their dysuria. Urine samples and vaginal swabs were processed in each case. 98 patients had either acute cystitis or acute vaginitis or both while in 27 patients, neither was the cause. Most cases were in the third trimester and were multigravid. The commonest bacterial isolate causing UTI was *Escherichia coli* (32.5%) followed by *Proteus sp.* (18%), *Klebsiella sp.* (14.25%), *Pseudomonas* (13%) and *Enterococci* (10.3%), *Citrobacter* (6.5%), *Staphylococcus aureus* (5.1%) and *S. saprophyticus* (3.9%). *Candida* species and *Trichomonas vaginalis* were responsible for most of the cases of acute vaginitis. Maximum sensitivity of the bacteria was exhibited against Netilmicin, Ciprofloxacin and Norfloxacin while it was minimum for Ampicillin.

Investigating and promptly treating cases of dysuria during pregnancy is important because it can be associated with a number of complications.

INTRODUCTION :

'Dysuria' which literally means difficult urination is a very common complaint among women in general and pregnant women in particular. External dysuria is secondary to acute vulvo-vaginitis

while internal dysuria is due to acute cystitis or acute urethritis (Edward et al 1983). A number of physiological changes in the pregnant women, predispose them to UTI as well as acute vulvovaginitis (Norden et al 1965).

Out of the Several micro organisms known to produce UTI in pregnant women, *Escherichia coli* heads the list followed

by Proteus, Klebsiella and others (Donald 1991). Micro-organisms commonly involved in vulvovaginitis are Candida species and Trichomonas vaginalis. (Faro 1989). These clinical conditions can have long long term effects on the health of the mother as well as the foetus or baby (Kriger 1986). Therefore, various etiological factors causing dysuria in pregnant women are important entities and need proper investigations and evaluation for a preventive approach to maternal and foetal complications (Andriole, 1975).

MATERIALS AND METHODS

One hundred and twenty five pregnant women attending the antenatal clinic with symptoms of dysuria were included in the study.

Clean catch midstream urine sample and vaginal swab were obtained from each case. Urine samples were examined microscopically. Grams stain of uncentrifuged sample and wet cover slip

preparation of centrifuged sample were studied. Urine was cultured aerobically on blood agar and Macconkey's agar by semiquantitative technique. Isolates were identified by standard biochemical tests (Duguid & Marmiou 1989) and sensitivity to various antibiotics carried out.

The vaginal swabs were examined for the presence of Trichomonas vaginalis and Candida species by carrying out direct microscopy. Candida species were isolated on Sabaraud's dextrose agar and identified by germ tube test and cornmeal agar morphology.

OBSERVATIONS:

Out of the 125 cases studied, 98 patients had a definite etiological agent responsible for dysuria. Among these, 72 patients had acute cystitis, 21 had acute vaginitis while 5 patients had both. In 27 patients, no definite etiological agent could be detected. Among, these, 16 had nonsignificant

TABLE I
SHOWING DISTRIBUTION OF CASES OF ACUTE BACTERIAL
CYSTITIS AND ACUTE VAGINITIS ACCORDING TO
DURATION OF PREGNANCY.

S. No.	Duration of Pregnancy	Total No. of cases	No. of cases with acute cystitis	No. of cases with acute vaginitis
1.	First trimester	6	3 (50%)	Nil
2.	Second trimester	54	30 (55.5%)	8 (14.8%)
3.	Third trimester	65	39 (60%)	13 (20%)
	Total	125	72 (57.6%)	21 (16.8%)

TABLE II
SHOWING RELATION OF ACUTE BACTERIAL CYSTITIS AND
ACUTE VAGINITIS TO AGE :

S. No.	Age group in Yrs.	Total cases	Cases with acute cystitis	No. of cases with acute vaginitis.
1.	16-25	66	36 (54.5%)	10 (15.1%)
2.	26-35	53	32 (60.3%)	10 (18.8%)
3.	36 & above	6	4 (66.6%)	1 (16.6%)
Total		125 A	72 (57.6%)	21 (16.8%)

TABLE III
SHOWING RELATION OF ACUTE CYSTITIS AND
ACUTE VAGINITIS TO PARITY.

S. No.	Gravida	Total No. of cases	No. of cases with acute cystitis	No. of cases with acute vaginitis.
1.	Primi-gravida	40	19 (47.5%)	3 (7.5%)
2.	Multi-gravida	85	53 (62.3%)	18 (21.1%)
Total		125	72 (57.6%)	21 (16.8%)

bacteriuria and in 11 cases, no microorganisms were isolated.

Maximum number of cases available for the study were in the third trimester, belonged to younger age group and were multigravid.

The incidence of acute cystitis as well as acute vaginitis was more in the third trimester (Table - I).

The incidence of acute cystitis as well

as acute vaginitis was more in multigravid women and in older age groups. (Table II and III).

The various bacteria isolated from urine samples have been shown in table - IV.

The microorganism showed maximum sensitivity to Netilmicin and Ciprofloxacin while minimum sensitivity was observed against Ampicillin and Cotrimoxazole.

TABLE IV
SHOWING VARIOUS BACTERIAL SPECIES ISOLATED FROM
URINE IN 77 CASES OF ACUTE CYSTITIS.

S. No.	Bacterial species	No. of isolates
1.	<i>Escherichia coli</i>	25 (32.5%)
2.	<i>Proteus species</i>	14 (18.0%)
3.	<i>Klebsiella spp.</i>	11 (14.28%)
4.	<i>Pseudomonas spp.</i>	10 (13%)
5.	Enterococci	8 (10.3%)
6.	<i>Citrobacter spp.</i>	5 (6.5%)
7.	<i>Staphylococcus aureus</i>	4 (5.1%)
8.	<i>Staphylococcus epidermidis</i>	3 (3.9%)

Among the 26 cases of acute vaginitis, *Candida sp* were isolated in 14 cases and *Trichomonas vaginalis* visualised in 11 cases and in one case, both were present.

DISCUSSION :

Urinary tract infection as well as vaginitis are common complications of pregnancy. 40% of women with bacteriuria develop acute pyelonephritis which could be prevented by proper treatment in early pregnancy. (Kass, 1960).

In the present study, acute cystitis was more common than acute vaginitis as a cause of dysuria. The incidence of acute cystitis as well as acute vaginitis was maximum in patients in the third trimester, in older age groups as well as in multigravid women. Similar findings have also been reported by Stuart Cummins (1965) and McNeelis

(1977). Increase in pressure effect of the enlarging gravid uterus due to softening of ureters following hormonal changes is basically responsible for increase in significant bacteriuria with an increase in gestational age. The effect of parity and increasing age is seen in the form of laxity of the pelvic tissue support, thus providing easier access of microorganisms into the urethra and then to the bladder and upper urinary tract.

Our study revealed that *Escherichia coli* was the predominant bacterial isolate. Similar observations have been made by Bhujwala et al (1974). However, Fule et al (1979) found *Klebsiella* to be the chief offending organism. The higher incidence of infection by *E.coli* could be explained on the basis of their predominance in the faecal flora leading to colonisation of the urinary

tract as well as the presence of certain virulence factors which help them to invade the urinary tract. Maximum sensitivity to higher antibiotics like Netilmicin, Ciprofloxacin and Norfloxacin with increased resistance to Ampicillin and Co-trimoxazole can be explained due to acquisition of drug resistance to the routinely used antibiotics.

Vaginitis due to *Candida* is common during pregnancy due to high levels of reproductive hormones which provide a higher glycogen content in the vaginal environment providing an excellent carbon source for *Candida* to grow and germinate (McCowitie et al 1981). Therefore it is necessary to thoroughly investigate cases of dysuria during pregnancy in order to prevent the complications which ensue. The treatment of such cases should also be

tailored to minimise the risks of therapy.

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