Original Research Article

POLYBACTERIA IN URINARY TRACT INFECTION AMONG ANTENATAL PATIENTS ATTENDING UNIVERSITY TEACHING HOSPITAL ADO-EKITI,EKITI STATE, NIGERIA

Abstract

A study of the polybacteria in UTI among antenatal patients attending clinics at the Ekiti State University Teaching Hospital, Ado-Ekiti, southwest, Nigeria was conducted between October, 2009 and July, 2011. Two hundred consenting symptomatic and asymptomatic pregnant women were recruited into the study and clean-catch midstream urine samples were collected from them. Structured questionnaires were also administered to the subjects to obtain relevant socio-demographic data from them. The results showed that 98(49%) out of the 200 samples had significant bacteria growth, 22 (11%) yielded growth of Candida albicans, 30 (15%) yielded no significant growth, 14 (7%) yielded mixed growth of contaminants, while 44 (22%) yielded no bacteria growth. Microscopically, the presence of Trichomonas vaginalis was detected in 8 (4%) of the samples. Thirty (28.8%) of the samples yielded growth of Escherichia coli, Klebsiella spp 28 (26.9%), Staphylococcus spp 22 (21.2%), Pseudomonas spp 10 (9.6%), Proteus spp 6 (5.8%) and Streptococcus spp 2 (1.9%). Statistical analysis of the result reveal that there's an association between polybacteria UTI and subjects' socio-economic status. It was more prevalent in subjects with low socio-economic status, was highest in subjects' in first trimester and lowest in the third trimester. Antibiotic susceptibility testing shows that the isolates had high sensitivity to peflacine, gentamicin, nitrofurantoin, rocephin and cloxacillin. They had fairly good sensitivity to ciprofloxacin and nalidixic acid, whereas

they had moderate sensitivity to chloramphenicol and zinacef. They were however resistant to tetracycline, cotrimoxazole, colisitn, streptomycin, ampicillin and penicillin.

Comment [i1]: conclusion ?

Keywords: Urinary tract, bacteria, infection, polybacteria

INTRODUCTION

Polybacteria is a phenomenon used to express the occurrence of varieties of bacteria in the course of infection especially urinary tract infection in pregnant women. Urinary tract infection (UTI) is an infection caused by the presence and growth of microorganisms anywhere in the urinary tract. It is perhaps the single most common bacterial infection of mankind (Morgan and Mckenzie, 1993; Ebie et al., 2001).

Urinary tract includes the organs that collect and store urine and releases it from the body, which includes kidney, ureter, bladder and urethra. UTIs are among the most common bacterial infections in humans, both in community and hospital settings and have been reported in all age groups in both sexes (Hooton et al.. 1995). It is a serious health problem affecting millions of people each year and is the leading cause of Gram-negative bacteriaemia. UTIs are also the leading cause of morbidity and health care expenditures in persons of all ages. UTI has become the most common hospital—acquired infection accounting for as many as 35% of nosochomial infections and it is the second most common cause of bacteriaemia in hospitalized patients (Weinstein et al., 1997; Stamm, 2002; Kolawole et al., 2009). UTI accounts for a significant part of the workload in clinical microbiology laboratories and enteric bacteria (in particular, *Escherichia coli*) remain the most frequent cause of UTI (Ojiegbe and Nworie , 2000).

Numerous reports have also suggested that UTI can occur in both males and females of any age, with bacterial counts as low as 100 colony forming units (cfu) per millimeter in urine (Akinyemi et al., 1997; Ebie et al., 2001). This is common in patients with symptoms of acute urethral syndrome, males with chronic prostatitis and patients with indwelling catheters (Karen et al., 1994) Females are however believed to be more affected than males except at the extremes of life (Ebie et al., 2001). Untreated upper UTI in pregnancy carries well documented risks of morbidity and rarely, mortality to the pregnant women (Nice, 2003). Sexually active young women are disproportionately affected. An estimated 40% of women reported having had a UTI at some point in their lives (Kunin, 1994).

Usually, a UTI is caused by bacteria that can also live in digestive tract, in the vagina or around the urethra which is at the entrance to the urinary tract. Most often, these bacteria enter the urethra and travel to the bladder and kidneys. Usually, the body removes the bacteria and shows no symptoms. The symptoms, include burning feeling during urination, frequent or intense urges to urinate, even when one has little urine to pass, pains in the back or lower abdomen, cloudy, dark, bloody, or unusual smelling urine, fever or chills (Nkudic, 2005). Women tend to have UTIs more often than men because bacteria can reach the bladder more easily in women. This is partially due to the shorter and wider female urethra and its proximity to anus. Bacteria from the rectum can easily travel up the urethra and cause infections (Ebie et al., 2001)

Moreover, the main factors predisposing married women to bacteriuria are pregnancy and sexual intercourse (NIH, 2004). Sexual activity increases the chances of bacterial contamination of female urethra. Having intercourse may also cause UTIs in women because bacteria can be pushed into the urethra. The anatomical relationship of the female urethra to the vagina makes it liable

to trauma during sexual intercourse as well as bacteria being massaged up the urethra and bladder during pregnancy / child birth (Duerden et al., 1990).

UTI is the second most common . clinical indication for empirical antimicrobial treatment in primary and secondary care, and urine samples, constitute the largest single category of specimens examined in most medical microbiology laboratories (Morgan and Mckenzie, 1993).

UTI is challenging not only because of the large number of infections that occur each year, but also because the diagnosis of UTI is not always straight forward (Kolawole et al., 2009). Criteria for the diagnosis of UTI greatly depending on the patients and context

This study focuses on the polybacteria and the incidence of UTI among pregnant women atEkiti State University Teaching Hospital, Ado-Ekiti, southwest, Nigeria

METHODOLOGY

Study Area

This study was carried out among pregnant women attending antenatal clinic at EKSUTH, Ado-Ekiti. Ado-Ekiti is a city, in southwest Nigeria and lies between latitude $7^{o}35`$ and $7^{o}38`$ North of the equator and longitude $5^{o}10`$ and $5^{o}15`$ East of the Greenwich Meridian. It has a population of 308, 626. (Oriye, 2008; Adebayo and Jegede, 2010).

Study Population

Comment [i2]: Please include information about ethical clearance and informed consent

Urine samples were collected from two hundred pregnant women between the ages of 21 to 40 years. All these persons were attending the ante-natal clinic of Ekiti State University Teaching Hospital Ado-Ekiti. The women were of low, middle and high socio-economic status. The women included those that showed symptoms and non-symptoms of urinary tract infection.

Sample collection

Clean catch mid-stream urine samples were collected from a total of 200 pregnant women. The patients were instructed to wash their hands thoroughly, spread their labia, wash their vulva with mild soap and rinse with warm water. The first part of the urine was voided out and without stopping micturition, mid-stream urine was passed into sterile universal bottle and the latter part voided out.

The samples were properly labelled and all necessary information such as name, age, religion, occupation, parity and stages/duration of pregnancy were collected through the administration of questionnaires to the patients.

SAMPLE ANALYSIS

Culture

The samples were cultured by a semi-quantitative method using a wire loop designed to deliver 0.01ml of urine. The loop was inserted and Blood agar

plates were inoculated. The plates were incubated at 37^0C overnight and the next day colony count was made.

Microscopy

The samples were mixed number of times thoroughly without shaking, 7ml of each sample was placed in centrifuge tubes and spun at 3000 r.p.m. for 15 minutes. The supernatant fluids were decanted and wet preparations were made from the deposits. These were then examined using XIO and X40 objective for the cellular and non-cellular components.

The discrete colonies of all the isolates were inoculated into peptone water which was then flooded on a sterile DST agar and the antibiotics disc were placed on the plates. The plates were incubated overnight at 37^0C

Escherichia coli NCTC 1041 S and Staphylococcus aureus_ NCTC 6571were used as control organisms.

RESULTS

Comment [i3]: Please explain whether statistical analysis of this research was carried out

Total number of pregnant women examined	200
Number with significant bacteriuria	98(49%)
Number with non-significant bacteriuria	30(15%)
Number with mixed growth	24(7%)
Number without growth	44(22%)

Out of the 200 samples examined 22 (11%) yielded viable growth of *Candida albican* and 8(4%) had*Trichomonas vaginalis* infections. Control samples from non-pregnant women who were under child bearing age were also examined alongside with the test samples, these patients were known to be healthy individual selected from Ado- Ekiti community.The result showed that only 2(5%) samples out of the 40 control samples processed yielded the growth of *E.coli*, *Candida albican* 8(20%).Out of 40 samples processed as control, 24(60%) yielded no growth while 6(15%) yielded non-significant bacterial growth.

As shown in Table 2, *Escherichia coli* had a higher prevalence of 30(28.8%), this wasfollowed by *Klebsiella spp*. 28(26.9%), *Staphylococcus spp* 22(21.2%), *Candida albican* 22(21.2%), *Pseudomonas spp Proteus spp* 6(5.8%) while *Streptococcus faecalis*; had the least prevalence of 2(1.9%). It was also noted that infection rate was highest during the first trimester 36(81.8%)and lowest in the third trimester 40(40.8%) (see Table 3).Table 4 reveals that infections rate was higher in primigravida 40(57.1%) while it's a little bit lower in multigravida 70(53.8%).

In relation to Tables 5, 7 and 8 shows the effect of socio-economical factors on the prevalence of urinary tract infection in antenatal patients at Ekiti State University Teaching Hospital, Ado-Ekiti. All strains of bacterial isolates were

susceptible to peflacine. Many of the isolates were also sensitive to rocephin, cloxacillin, gentamycin, fortum, nalidixic acid and nitrofurantoin, also moderately sensitivity was exhibited to zincef, chloramphenicol. All isolates show high resistance to tetracycline, cotimoxazole, colistin, streptomycin and ampicillin. Penicillin was highly resistance to gram positive cocci.

TABLE 1

SHOWING THE SUMMARY OF POLYBACTERIA IN URINARY TRACT INFECTION IN ANTENATAL PATIENT AT UNIVERSITY TEACHING HOSPITAL, ADO-EKITI IN RELATION WITH THE CONTROL

DETAILS ANALYSIS SAMPLES	TEST SAMPLES	%	CONTROL	%
Number of samples process	200	100	40	IOO
Number of samples yielding significant bacteria growth	98	46	2	5
Number of samples with nonsignificant bacteria growth	30	15	6	15
Number of sample with mixed growth of probable contamination	14	7	-	-
Number of samples without growth	44	22	24	60

Number of samples yielding growth of candida albican	22	11	8	20
Number of samples with presence of Trichomonas vaginalis	8	4	-	-

TABLE 2

SHOWING FREQUENCY OF OCCURRENCE OF THE BACTERIA ISOLATED

ORGANISM ISOLATED		**NUMBER ISOLATED**	
I	*Escherichia coli*	30	28.8
2	*Klebsiella spp*	28	26.9
3	*Staphylococcus spp*	22	21.2
4	*Candida alb ican*	22	21.2
5	*Pseudomonas spp*	10	9.6
6	*Proteus spp*	6	5.8
7	*Streptococcus faecalis*	2	1.9

TABLE 3

THE INFLUENCE OF GESTATIONAL AGE ON POLYBACTERIA (UTI) IN PREGNANT WOMEN

PREGNANCY DURATION	NUMBER EXAMINED	NUMBER SHOWING SIGNIFICANT BACTERIURIA	%
1st Trimester	44	36	81.8
2nd Trimester	58	29	50.0
3rdTrimester	98	40	40.8

TABLE 4

THE POLYBACTERIA (URI) BY PARITY

PARITY	NUMBER EXAMINED	NUMBER SHOWING SIGNIFICANT BACTERIURIA	%	OVERALL (%)
Primigravida				
1^0	70	40	57	57.1
Multigravida				
2^0	48	21	43.8	53.8
3^0	46	29	63.0	
4^0	16	3	18.8	
5^0 and above	20	17	85.0	

TABLE 5

DISTRIBUTION OF AGE OF POLYBACTERIA UNINARY TRACT INFECTION IN PREGNANT WOMAN

PARITY	NUMBER EXAMINED	NUMBER SHOWING SIGNIFICANT BACTERIURIA	%
Primigravida			
15-19	6	4	66.6
20-24	44	24	54.3
25-29	66	28	42.4
30-34	58	30	51.7
35-39	24	14	58.3
40 and above	2	-	-

TABLE 6

THE OCCUPATIONAL INFLUENCE OF POLYBACTERIA UTI IN PREGNAT WOMEN

OCCUPATION	NUMBER EXAMINED	NUMBER SHOWING SIGNIFICANT BACTERIURIA	%
Full Time-house Wife	12	8	66.7
Students	40	24	60.0
Trading	78	42	53.8
Civil Servant	70	34	48.5

TABLE 7

THE RELIGION EFFECT IN POLYBACTERIA UTI IN PREGNAT WOMEN

GROUP	NUMBER EXAMINED	NUMBER SHOWING SIGNIFICANT BACTERIURIA	%
Christian	152	86	56.6
Muslim	48	22	45.8

TABLE 8

THE INFLUENCE OF HOUSEHOLD POPULATION ON POLYBACTERIA UNINARY TRACT INFECTION IN PREGNANCY

NUMBER IN HOUSEHOLD	NUMBER EXAMINED	NUMBER SHOWING SIGNIFICANT BACTERIURIA	%
1-4	126	62	49.2
5-8	64	38	59.4
9 and above	8	6	75-0

TABLE 9

SUMMARY OF WHITE BLOOD CELL COUNT IN RELATION TO SIGNIFICANT POLYBACTERIA

WBC	NUMBER EXAMINED	NUMBER IN THE RAANGE	NUMBER SHOWING SIGNIFICANT BACTERIURIA	%
0-2	200	78	14	23.0
3-5	200	56	56	64.3
6-8	200	32	32	18.8
9-12	200	14	8	57.1
13 and above	200	20	18	90.0

TABLE 10

SUMMARY OF WHITE BLOOD CELL COUNT IN RELATION TO SIGNIFICANT POLYBACTERIA

WBC	NUMBER EXAMINED	NUMBER IN THE RAANGE	NUMBER SHOWING SIGNIFICANT BACTERIURIA	%
0-2	200	78	14	23.0
3-5	200	56	56	64.3
6-8	200	32	32	18.8
9-12	200	14	8	57.1
13 and above	200	20	18	90.0

TABLE 11A

THE ANTIBIOTIC SENSITIVITY PATTERN OF POLYBACTERIA (UTI) ISOLATED (GRAM POSITIVE ORGANISMS)

ANTIBIOTICS	NUMBER SENSITIVE	%	NUMBER RESISTANT	%
Peflacine	24	100	-	-
Rocephin	20	83	4	16.7
Cloxacillin	18	75.0	6	25.0
Gentamycin	17	70.8	7	29.2
Zinacef	15	62.5	9	37.5
Fortum	14	58.3	10	41.7
Erythromaycin	14	58.3	10	41.7
Chloramphenicol	11	45.8	13	54.2
Ampicillin	9	37.5	15	62.5
Penicillin	9	37.5	15	62.5
Tetracycline	9	37.5	15	62.5
Streptomycin	7	29.2	17	70.8

TABLE 11B

THE ANTIBIOTICS SENSITIVITY PATTERN OF POLYBACTERIA (UTI) GRAM NEGATIVE ORGANISMS

ANTIBIOTICS	NUMBER SENSITIVE	%	NUMBER RESISTANT	%
Peflacine	74	100	-	-
Nalidixic acid	64	86.4	10	13.5
Forum	63	85.1	11	14.9
Rocephine	58	78.4	16	27.6
Nitrofuration	52	70.3	22	29.7
Zinacef	41	55.4	33	44.6
Gentamycin	37	50.0	37	50.0
Tetracycline	29	39.2	45	60.8
Cotrimoxazole	26	35.1	48	64.9
Colistin	21	28.4	53	71.6
Setreptomycin	18	24.3	56	75.7
Ampicillin	16	21.6	58	78.4

DISCUSSION

Pregnancy is the only natural example of acceptance of a foreign tissue graft for many months by a normal healthy person. Research shows that the mothers' immune system actively enhances fetal survival by inducing the production of non-specific suppressor cells and immunoregulatory, factors which serve to protect the placenta and fetus rather than causing the rejection (Baines and Gendron, 1993). Pregnancy also seems to favour the growth of pathogen, some of which may have been introduced unknowingly at it is onset. The result of this project research is in accordance with above statement.

The research project work sought to identify the prevalence of bacterial infection in urinary tract of pregnant patients, determine the most common ones and measures the influence of socio-economic factors on their prevalence among pregnant women attending antenatal clinic at University Teaching Hospital Ado — Ekiti. This is of paramount importance because in order to obtain a comprehensive view of the adequacy of maternal service, we consider it very important factors, which cause pregnancy complications that can be detected in antenatal clinic. We went to provide candid and objective assessments of the circumstances

influencing the incidence and prevalence of bacterial infection of the urinary tract in antenatal care.

The result showed that out of 200 pregnant women recruited for the research project work 98 of them were having significant bacterial infection and this represent 49% while 22 presented with candida infection and this represent 11%. It was quite noticeable that 30 patients out of these 200 examined are with non-significant bacterial infection and these represent 15%, while those with mixed growth were about 14 and this represent 7%. It is noteworthy that only 44 patients were without bacterial growth and this figure represented 22% but with the control setup i.e. non-pregnant women was examined along with their counterpart who were pregnant, the result shows that out of 40 non-pregnant health patients who were under child bearing age and also sexually active stage: 2(5%) had significant bacterial growth, had non-significant bacterial growth, none of the control patients presented with mixed growth, 8(20%) had Candida albican isolated while 24(60%) was without growth. None of them had Trichomonas vaginalis detected in their urine. There was a statistically significant differences in ($P<0.05$) urinary tract infection prevalence rate in relation to pregnant women and non-pregnant control women, with this it is quite obvious that bacterial infection of urinary tract among the

antenatal patients was high. The causative organisms isolated were Escherichia coli_30(28.8%), Klebsiella spp 28(26.9%), Proteus spp 6(5.8%) and *Streptococcus faecalis* 2(1.9%) see table 2.

The occurrence of bacteriuria was highest at the first trimester period of pregnancy, out of 44 patients examined at this stage 36(81.8%) was having significant bacteriuria, this was attributed to the fact the changes such as dehydration which is secondary to vomiting, increased excretion of nutrients like glucose, vitamin — B complex which form a good culture medium for bacterial growth, this was in accordance with the work of both, this condition also favored bacterial multiplication in the bladder leading to cystitis. The rate of bacteriuria decreases as pregnancy progressed, out of 58 patients examined at the stage of second trimester 29(50.0%) was having significant bacteriuria and lowest at the third trimester, 98 patients were examined at this stage and 40 (40.8%) was with significant bacteriuria, this finding was in agreement with the work. The low bacteriuric pregnant women at the third trimester is due to frequency in urination at this stage of pregnancy which will not give enough time for bacterial multiplication to occur before urine is voided out. It is noteworthy that not only bacterial infections affections affect the antenatal patient, table I showed that candidiasis is one of the pathogens

contributing to urinary tract infection in pregnancy, out of the two hundred pregnant women examined 22(11%) was presented with candidiasis.

This predisposition has been ascribed to glycogen deposition in the vaginal epithelium,and to be under the influence of oestrogen. Also, there is an increase in glycogen content in vaginal and increase frequency of fungus infection during pregnancy as opposed the nonpregnant patient, the increase in candidia's infection in non-pregnant women to the available vaginal glycogen observed in the luteal phase of the menstrual cycle. Influence of parity on prevalence of bacteriuria among pregnant women was found to be high among patients who were primagravidae having 40(57.1%) but rescues in multigravidae having 70(53.8%), this trend towards a reduced level of bacteriuria with parity has been attributed to the increase in immunity that would be expected with an increase in age, this findings above complies with the work of (Bray and Anderson, 1979) has suggested by Flemming, (1987) the general belief that material growth ceases during pregnancy, very young mothers continued to grow and some even showed adolescent immune system to accommodate the developing fetus may therefore have serious consequences on matemal immune response to infectious growth spurt. Depression of an unfully developed

agents. The result above was also subjected to data analysis using one way analysis of variance (ANOVA) and the result was found to be statistically significant (P<O.05), this suggested that pregnancy duration as well s parity were important factors in determining susceptibility to bacteriuria, this was in agreement with the work of (Hytten et al., 1971).

Samples were from patients of different age groups, it could be seen from table 5 that age range of 15-19 was having the highest prevalence rate of 4(66.6%) while the age range of 2024 was with 24(54.3%) prevalence, this age range was convincingly the active sexual stage of normal healthy human life. It also corresponded to the schooling age and students are particularly known to be involved in high level of sexual immoralities especially the female students, this was due to the fact that during sexual intercourse, any organisms present in the vaginal is massaged up the urethra, moreover the occurrence of no growth at the range of 40 years and above can be as a result of colonization of lactobacilli in the vaginal which bring about the production of lactic acid and thereby making the environment uncondusive for bacterial growth, not much work has been done on this, with this certainty of this distribution is still doubtful the above data was found to be statistically not significant (P>O.05) when

tested. This then suggested that ages did not necessarily influenced the rate of prevalence of bacteriuria in pregnancy.

Findings made in this present study showed that bacteriuria in pregnancy may not be totally linked with occupation and household seize, this was subjected to statistical analysis using one-way analysis of variance (ANOVA) and it was found to be statistically not significant (P>0.05), but with the present statistic obtained from table 6. It was noticed that students were with high percentage of bacteriuria with 24(60%), this would have been best explained based on the rate of sexual activity of the Nigerian students nowadays and since this act encourages bacteriuria then it can be linked with it, full time house wife was having 8(66.7%), this would have been best explained based on the rate of sexual activity of the Nigerian students nowadays and since this act encourages bacteriuria then it can be linked with it, full time house wife was having 8(66.7%), it is observed that most of the people who were full time housewives are of low-socio-economic class and following the normal economic crush of this nation (Nigeria) most of them do not maintain good persona! hygiene and this can be attributed to the high incidence of bacteriuria in them, it is quite noticeable that those that engaged in trading were having about 42(53.8%). The nature Of the business of some traders may also be a factor

that place them favorably in the category of women with more than one sexual partners, an instance is the case of food vendor or beer sellers, it is finally observed that civil servants had the least prevalence of bacteriuria, with 34(48.5%), this may be linked with their level of education in various profession, the result obtained from the study of effect of occupation in relation with the level of education showed that level of education has some positive effects.

The women's level of education (civil servant) is the only significant predictor initiating antenatal clinic (ANC) early in pregnancy, abiding by the clinicians' instructions on antibiotics drugs and continuing the use of the drugs throughout the cause of the treatment, this was because women with high knowledge of bacteriuria are more likely to use antibiotics than those with low knowledge. Though household size does not have much significant effect on the prevalence of bacteriuria in pregnant patient but it is of no doubt that in an overcrowded family of low socioeconomic class, infections are bound to prevail and this is associated with low level of hygienic way they live, out of 200 patient examined 126 are of normal household population has suggested by Gen. Ibrahim Babangida regime i.e. range 5-8 and 9 and above is having infection rate of 38(59.4%) and 6(75.0%) respectively, with this it is of no doubt as earlier said that

overcrowdness may induce the prevalence of bacteriuria among the antenatal patient.

It was noted that Christians were having highest number of bacteriuria with 86(56.6%) while the Muslim counterpart are of 22(45.8%), the low level of bacteriuria in Muslim patient can be linked with their custom of worshipping which laid more emphasis on physical tidiness and good body hygiene which involved washing and clearing of private part before prayer at least this was carried out five times daily, in line with this it can be easily suggested that the mode of worshipping of Muslim helps reduces the prevalence of bacteriuria among them.

Significant pyuria (which is the presence of more than 3 pus cells in the centrifuged urine) was discovered in one hundred and twenty-two samples (122), 78 had pus cells in the range 0-2 pus cells/phf and was taken as not significant. It was not all cases of pyuria that showed significant bacteriuria (see Table 9) out of the 122 samples, only 64 had significant bacteriuria. the other 58 samples had no growth of bacteriuria. It is thus evident that not all cases of bacteriuria are accompanied with pyuria. Pyuria is a good index of underlying renal diseases (Fairley et al., 1971). A bacterial pyuria has also been reported to be as a result of tuberculosis.

All isolates were subjected to antibiotics sensitivity testing based on their gram reaction, it was found that all isolates of both gram-positive organisms and gram-negative organisms were totally sensitive to peflacine (Fluoroquinolone), the reason for it is high sensitivity is not far fetch, this might be due to being new in the market and therefore has not yet grossly abused. It is quite noticeable that all the isolates show good sensitivity pattern to Rocephin, Cloxacillin, Gentamycin, Fortum, Nalidixic acid and nitrofurantion. All isiolate shows high resistance to Tetracycline, Cotrimoxazonle, Colistin, Streptomycin and Ampicillin. Penicillin was applied to the Gram-positive cocci and some strains were also resistant (Table 11A and 11B). The above findings are in agreement with the works of (Owolabi and Ogunlola et al., 1997).

CONCLUSION AND RECOMMENDATION

The study was on the polybacteria in urinary tract infections among antenatal patients in University Teaching Hospital Ado — Ekiti. This study is in agreement with other reports which stress that UTI is more frequent in females than in males during youth and adulthood (Ibeawichi and Mbata, 2007); Asinobi et al., 2003; Olaitan, 2006; Mbata, 2007). This high incidence of UTI reporter in this study may also be attributed to such factors as poor housing, poor drainage systems, lack of proper personal

and •environmental hygiene, genuine population susceptibility since it is that factors such as low socio — economic status, sexual intercourse, and pregnancy among others are common among Nigerian women (Andriole, 1985; Akinyemi et al.. 1997; Kolawole et al., 2009).

The low incidence rate of polybacteria urinary tract infection reported among students in this study may be attributed to the extensive health care talk given regularly in schools and public awareness programme common among women whose husbands were transport workers, businessmen or in the armed forces. The polybacteriuria among women in their first trimester is

40.8%, Vazquez and Villar (2000) also reported that, women with bacteriuria in the first trimester develop upper UTI in the second for third trimester. Thus, pregnant women should be screened for bacteriuria by urine culture at 12 to 16 weeks of gestation. The presence of Ix105 CFU of bacteria per ml of urine should be considered significant. Only 200 urine sample were observed to have pus cells, candida ablicans (Yeast cells) and Trichomonas. The pattem and frequency of occurrence of the bacterial isolates found in this study is similar to what has been previously reported E.coli is also the most common pathogen among patients with uncomplicated UT Is (Kahlmeter, 2003) other members of the family Enterobacteriaceae such as

S. aureus some can have similar requirements (Barker et al., 1978; Tena et al., 2008). The most implicating organism causing urinary tract infections among these pregnant women in this study was E.coli responsible for 30 (28%) of the cases of UTI. This was followed by S.aureus 22 (21.2%), Pseudomonas aeruginosa 10 (9.6%) and mixed cultures of probable contamination 14 (7%). This finding is similar to other reports which suggest that gram negative bacteria, particularly E. coli is the commonest pathogen isolated in patients with UTI According to Murray et al (1998), S.aureus is believed to cause cystitis in mainly young sexually active females. The polybacteria Of urinary tract infections in pregnant women might be as a result of a variety of factors women under 50 years of age with acute symptoms such as dysuria, urgency of frequency suggesting of lower UTI or loin pain suggesting of upper UTI are extremely likely to have bacteriuria. Asymptomatic bacteriuria becomes increasingly common with age though prevalence is always lower than for women of the same age. Vaginal micro-flora also plays a critical role in encouraging vaginal colonization with coliforms and this can lead to urinary tract infection (Hooton et al., 1995). As not only do UTI pose a threat to health, but they also impose an economic and social burden due to the stigma associated with these infections. The findings of this study revealed that the commensals of

perianal and vaginal regions. This calls for increase in personal hygiene (Kolawole et al., 2009).

This study has highlighted the need to raise awareness of UTIS and to expand services for prevention and treatment for pregnant women. To do this effectively, however, it may be necessary to improve the quality of health care provided at the community level. Since UTI may be symptomatic and asymptomatic in most cases, it is therefore suggested that routine screening of patients with unexplained sources of fever be done for UTI and the appropriate antimicrobials administered after sensitivity tests have been carried out in order to prevent the cases becoming symptomatic later with resultant renal damage.

Conclusively, the two studies indicated in the use of the clean catch midstream device resulted in clinically significant relative reduction in urine contamination. Jackson et al (2005) compared with conventional collection methods. These studies were based on random allocation of urine collection methods among female population the majority of who were asymptomatic and antenatal clinic attendees. A reduction in contamination was also observed in a small number of elderly patients. Use of the clean catch midstream device could therefore lead to significant reduction of these rates.

For routine MSU collection in an antenatal setting when culture and microscopy are undertaken for all MSU specimens, the clean catch midstream urine collection device can provide savings in terms of staff time and in terms of the additional resources required for repeat collection and testing of MSU samples due to contamination. The clean catch midstream might help to achieve greater compliance and minimizes variation in the sample collection procedure (Jackson et al 2005).

Finally, in conclusion, maternal and child health will be greatly enhanced by the adoption of an affordable and inexpensive prenatal regimen, thus making it possible for all pregnant women to come for laboratory investigations at an early Stage of pregnancy to prevent the adverse effect that bacteriuria has on the foetus and mother. Also, antibiotics use without sensitivity testing should be discouraged to prevent the emergency of resistant mutants, in case of any emergency resulting from bacteriuria in pregnancy, the use of peflanine. rocephine nitrofurantoin and gentamycin is recommended.

Moreover short-course therapy should be given to women with bacteriuria and clearance of bacteriuria should be documented after therapy is complete, all women with persistent bacteriuria or recurrent infection should have follow — up cultures and a urologic evaluation after delivery,

also pregnant women and those that are not pregnant should be educated about preventive measures for UTI. As a result of the serious consequences to mothers and foetus, we advocate quantitative urine culture for all antenatal patients, especially those coming from disadvantaged socio-economic condition.

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