IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 7, Issue 1 Ver. V. (Jan.- Feb .2018), PP 48-52
www.iosrjournals.org

Prospective Study on The Prevalence of Urinary Tract Infections In Pregnancy: Al Dawadmi, Riyadh, Saudi Arabia.

Entesar* M., Makhlouf & Amal** A. Abdelhafez
** Assistant professor of Obstetrics & Gynecological Nursing, Assiut University Egypt, **Lecturer of obstetric & Gynecological Nursing, El-Minia university Egypt*
Corresponding Author:Entesar

Abstract: *Urinary tract infections are considered as the most common bacterial infection in both pregnant and non-pregnant women. About eight million women visit a physician annually for evaluation of urinary tract infections. Aim: to assess the prevalence of urinary tract infections during pregnancy at Al Dawadmi, Riyadh, Saudi Arabia. It was found that the more than half (58%) of women had UTI (29%) of them were due to fungal causes. Out of one hundred women, thirty one reported urinary symptoms. Most common urinary symptoms in these women was (35%) had dysuria & pain ,while less than quarter (23%) had fever & only(12 %) had rigors. We concluded that the prevalence of urinary tract infection in pregnant women attending antenatal clinics found more than half (58%) of women had UTI and (29%) had fungal causes. We recommended that repeated urine analysis during pregnancy is needed.*

Keywords: *Prevalence, urinary tract infection, pregnancy*

Date of Submission:10-01-2018 Date of acceptance: 31-01-2018

I. Introduction

One of the common pregnancy complications is urinary tract infection (UTI). It's prevalence rate is high as in three pregnant ladies of child bearing age will have UTI. (Duarte et al., 2008). Women's vulnerability to UTI is due to physiologic changes associated with pregnancy. Hormonal effects and mechanical compression of the bladder by the gravid uterus impede purging of the bladder and leads to expanding bladder remaining volume and vesico-urteral reflux. Accumulation of urine in the ureters and bladder will cause hydronephrosis. Moreover, pregnancy caused some change in glumeral filtration rate which leads to increase in glucose concentration in urine and its alkalinity in this manner encouraging bacterial development. In addition to the altered immunity in pregnant women will contribute to this result. UTI in pregnancy is classified by the location of bacterial growth into: asymptomatic bacteriuria (ASB; urine), cystitis and pyelonephritis. (Joseph DiPiro et al., 2011).The causes of tremendous cases of bacterial UTI are *Escherichia coli* (Sheffield & Cunningham, 2005). The infection may be restricted to the development of bacteria in the urine (which is asymptomatic infection) or it can result in several symptoms related to invasion of bacteria. Really UTI is responsible for several forms of disorders which include asymptomatic infections as urethritis, cystitis, acute pyelonephritis and pyelonephritis with bacteremia or sepsis (Joseph DiPiro et al., 2011).Untreated UTIs during pregnancy can result in some pregnancy complications, as low birth weight infants, preterm labor, and sometimes, stillbirth. Early and effective treatment of symptomatic UTIs is needed during pregnancy. However, some debate is still exists as regards the screening and treatment of asymptomatic forms during pregnancy (Lin and Brown 2010; Lumbiganon et al., 2010; Schmiemann et al., 2010).In a later research Al Sibiani, 2010 stated that 13% of untreated females with asymptomatic bacteriuria developed pyelonephritis, in contrast to only 0.4% of women with negative screening cultures. As with any serious febrile illness during the last trimester of pregnancy, women with Pyelonephritis may need to be hospitalized for treatment and, it may lead to premature delivery. In women with pyelonephritis before using antibiotics about 23-54% of them had preterm labor. This result was also obtained by Gilstrap *Faro, 1997* who stated that one quarter of women who had gestational pyelonephritis gave birth to low birth infants compared to only 15 % in the control group. (Al Sibiani, 2010)However, a great controversy exists whether asymptomatic bacteriuria during pregnancy can cause other complications as stillbirth, intrauterine growth retardation, and preterm labor in the absence of acute pyelonephritis. (Mazor , et.al, 2009) .

Mazor , et.al, 2009 on reviewing birth data of women with UTI during pregnancy, they reported higher rate of fetal mortality and prematurity about two and half times greater than their controls. Moreover, delivery of low birth weight infants had a higher rate of 2.04 greater than those of controls.

Blondeau , et al.,2005 found the incidence of perinatal mortality was double in women with UTI within two weeks of labor. They also added that two factors contribute to the delivery of low birth infants which are

preterm labor and delayed growth of the fetus. More than half of cases with gestational pyelonephritis can be prevented by screening and treatment. (Scoles, et al. 2005). So, urinalysis is recommended for early detection of asymptomatic bacteriuria. (Moore et al., 2008). It is important to note that prevalence of asymptomatic bacteriuria during pregnancy is 10 % which if not treated can lead to symptomatic cystitis in 30% of cases. Moreover, it can lead to the development of pyelonephritis in 50% of cases and have a greater risk of preterm labor and intrauterine growth retardation. (Al Sibiani, 2010)

Significance of the study:

Hence there is a deficient update data about Urinary tract infections during pregnancy which make it difficult to estimate the cost of screening, there is a great need for this study. Moreover Al- Dawadmi in Saudia Arabia is a rural area with the majority of women living in it lack the necessary information about asymptomatic bacteriuria. (Al Sibiani, 2010)

Aim of the study:

The current study aimed to estimate the prevalence of Urinary tract infections particularly bacteriuria among pregnant women attending antenatal clinics.

Research methodology:

Type of study: Prospective study

Sample:

A convenience sampling with a total of 100 pregnant women were enrolled during 6 month period. All pregnant women irrespective of age, parity and gestational age were included, However, those with any history of renal diseases or diabetes and those who received immuno suppressive drugs were excluded.

Setting

The study was conducted at Aldwadmi General Hospital, Kingdom of Saudi Arabia.

Tools

Two tools were used for this study: tool one; a questionnaire consisted of three parts: personal data as age, residence, education and working condition of women.
Part two: included data about urinary tract infection as its symptoms and type.
Part three which included obstetric data as semester of pregnancy, parity and previous abortion
Tool two: urinary infection assessment sheet included all variables of urinalysis and urine culture

Methods of data collection

1. The researcher had the permission to conduct the study from the head of the Dawadmi General Hospital, Kingdom of Saudia Arabia
2. A written consent was signed from pregnant women who agreed to participate in this study.
3. The study started from August 2015 to February 2016 and the approved by ethical-committee.
4. Pregnant women were screened for the presence of UTI which is defined as increasing bacterial urine culture in the samples.
5. A sterile container was used to obtain a mid-stream urine sample from each woman after explaining to her how to get a midstream sample. Then, the researchers sent the samples to the laboratory for microscopic examination and culture. Significant growth means the presence of > 100,000 organisms/ml urine of a single bacterium, while heavy mixed growth means the presence of > 100,000 organisms/ml urine of more than one type of bacteria.
6.

Ethical consideration

1. Risk benefits assessment, there is no risk at all during application of the research.
2. Confidentiality, this research was carried out by using codes of names and information was used only for the research work.

Validity of the study tool: tool one was tested for its content validity by a panel of five experts in obstetrics and gynecology and in microbiology. They revised the tool and required modifications were done. Content validity index (CVI) was 0.85.

LSERSTLU

This study found more than half (58%) of women had UTI (29%) had fungal causes. Out of 100 women, 31 women reported urinary symptoms. The most common urinary symptoms in these women were (35%) had dysuria & pain, while less than quarter (23%) had fever & only (12 %) had rigors.

The socio-demographic characteristics of women in the study sample (n=100) were the mean age of women were 28.4±6.0 years, more than half (68% & 62.0%) live in Urbana & a house wife respectively, also (70.0%) of them have basic education . Table 3 presents the relation between the presence of urinary tract infection and women's personal characteristics. A significant increase of UTI among urban women was found compared to rural ones. P- value <0.001 a significant rise in prevalence of UTI was also obtained among illiterate and basically educated women compared to women of the same educational level who didn't develop UTI (P- value <0.04). finally housewives had higher prevalence of UTI compared to working women (86.3% Vs. 42.9%) P-value <0.001Table 4 illustrates the relation between presence of UTI and women's obstetric characteristics. No significant relation was found between all obstetric characteristics (parity, previous abortions and trimester) and occurrence of UTI.

Table (1): Urinary tract infection among women in the study sample (N= 100)

Variable	Estimated results
Urinary tract infection (UTI):	
No	42
Yes	58
Type (n= 58):	
Fungal	29
Bacterial	25
Toxoplasmosis	4

T**able (2**): Symptoms of urinary tract infections in the sample. No=58

Variable	Estimated results
Urinary tract symptoms:	
No Symptoms	27
Symptoms	31
Irritative symptoms	38
Dysuria	35*
Pain	35*
Supra pubic pain	34*
Change in urine color	14*
Fever	23*
Rigors	12*

* The patient may have more than one symptom

Table (3): Urinary tract infections among women and their personal characteristics

Variable	Urinary tract infection. N= 100				X^2 Test	*p*-value
	Yes n=58		No n=42			
	No.	%	No.	%		
Age (years):						
<25	15	25.8	17	40.4		
25-	12	20.7	11	26.2	4.28	0.12
30+	31	53.4	14	33.3		
Range	17.0-42.0					
Mean ± SD	28.4±6.0					
Rural	17	29.3	15	35.7		
Urban	41	70.7	27	64.3	13.77	<0.001*
Education:						
Illiterate	11	18.9	1	2.4		
Basic/Intermediate	43	74.1	27	64.3	13.94	<0.001*
High	6	10.3	12	28.6		
Working condition:						
Housewife	50	86.3	18	42.9		
Working	16	13.7	22	52.3	13.90	<0.001*

Table (4): Urinary tract infections among women and their obstetrical characteristics.

Obstetric history	Urinary tract infection. N= 100				X^2 Test	*p*-value
	Yes n=58		No n=42			
	No.	%	No.	%		
Parity:						
Primi	9	15.5	9	21.4		
Multi	49	84.5	33	78.6	0.51	0.47
Previous abortions:						
No	21	36.2	18	42.9		
Yes	37	63.8	24	57.1	0.57	0.45
Trimester:						

1st	13	22.4	9	21.4		
2nd	27	46.6	21	50.0	0.34	0.84
3rd	18	31.0	12	28.6		

II. Discussion

This study aimed to assess prevalence of urinary tact infection among pregnant women attending antenatal clinics at Al Dawadmi General Hospital – Saudia Srabia. This study found that prevalence of UTI was 58%. This is similar to the findings of African study by Oladeinde et al., 2015 who reported prevalence of UTI among pregnant women to be 55%. It is higher than reported figures in other African studies conducted by Imad et al., 2010 and Turpin et al., 2007. Moreover Ayoyi et al., 2017 stated that prevalence of asymptomatic bacteriuria was 21.5 5 among pregnant women. A similar result was obtained by Tadesse et al., 2014. the prevalence in our study is higher than that reported by Hamdan et al., 2011 in Khartoum.In addition to the higher prevalence compared to Tanzania and Ethiopia which were 14.6% and 11.6 &, respectively (Masinde etal., 2009 and Assefa et al., 2008. Moreover Tazebew et al., 2012 stated that the prevalence of UTI was 9.5 % among pregnant women in North Ethiopia. This prevalence is still higher than that reported by Haider et al., 2010 who found prevalence of UTI among pregnant women to be 46.5%. also Tosin et al., 2014 reported prevalence of UTI was 37.1%. This may be interpreted as the majority of these women had low education and perhaps their hygienic habits need to be developed. The present study found that 46.5% out of the 58% of women with UTI were asymptomatic. This is lower than figures reported by Tazebew et al., 2012 in North West Ethiopia and Hamdan et al., 2011 who reported 89.9% d 71.9% were asymptomatic pregnant women with UTI, respectively. According toour study in table 1 more than half (58%) of women had recurrent UTI (29%) of them had fungal causes. this agrees with the studies of Morgan (2004) &. Amiri *et al.* (2009).Urinary tract problems among women shows in table 2, it was found that (35%) of women had dysuria & pain ,while less than quarter (23%) had fever & only(12 %) had rigors, this agrees with the studies of Al Senani,(2011)The result found that more than half of pregnant women with UTI aged 30 years or more. Several studies reported similar findings as Imade et al., 2010 who found highest prevalence of UTI among pregnant women of the age group 26- 40 years. This was also reported by other studies (Turpin et al., 2007 and Amadi et al., 2007). In the other hand, several studies reported no significant association between maternal age and prevalence of UTI (Hamdan et al., 2011; Emiru et al., 2013 and Tadesse et al., 2014). Advanced maternal age (≥ 35 years) was reported as risk factor for asymptomatic bacteriuria in pregnancy (Akinloye et al., 2006). Another reason could also be due to the fact that many women within this age bracket are likely to have had many children before the present pregnancy and it has been reported that multiparty is a risk factor for acquiring asymptomatic bacteriuria in pregnancy (Akinloye et al., 2006 and Fatima & Ishrat, 2006).The present study found that about three quarters (74.1%) of pregnant women with UTI had basic education. This is in agreement with that of Oli et al., 2010 who found that women with primary education had the highest prevalence (27.5%) of UTI. In contrast to that of Oladeinde et al., 2015 who found that there was no significant association between educational status and UTI among pregnant women. This may be because women with basic education lack the necessary information needed to prevent UTI during pregnancy.

This study found that 84.5% of pregnant women with UTI were mutiparous. This is in accordance with the findings of Haider et al., 2010 who reported that multiparity was significantly associated with UTI in pregnant women. However Emiru et al., 2013 and Oladeinde et al., 2015 found no significant association between multiparity and UTI among pregnant women.In present study, Table 4, more than half of them (63.8%) had previous abortion and less than half (46.6%) in the 2nd trimester of pregnancy, these results are in accord with the results of Tugrul *et al.* (2005). The present results are in agreement with Emilie (2011). However Oli et al., 2010 found that pregnant women with highest prevalence of UTI (25.7%) were in the 3rd trimester. Moreover Tadesse et al., 2014 found no significant association between trimester with UTI. The susceptibility of UTI during this period (2nd trimester) is due to urethral dilatation which started as early as 6 weeks & reaching the maximum during 22-24 weeks Tugrul *et al.* (2005).

III. Conclusion

The prevalence of UTI in pregnant women who attending antenatal clinic found more than half (58%) of women had recurrent UTI and (29%) had fungal causes. UTI was higher among pregnant women aged 30 years or over, were multiparous and had basic education.

IV. Recommendations

1. Simple &correct hygiene measures may be appropriate to prevent UTI.
2. Repeated urine analysis during pregnancy is needed to detect UTI as early as possible.
3. Further researches are needed with a large sample size and among Upper Egypt to determine prevalence of UTI in this area which is characterized by traditions and customs that may adversely affect people's health.

References

[1]. Akinloye O, Ogbolu DO, Akinloye OM, Terry Alli OA. Asymptomatic bacteriuria of pregnancy in Ibadan, Nigeria: a re-assessment. Br J Biomed Sci 2006; 63:109-112.

[2]. Al Senani N,(2011) Asymptomatic Bacteriuria in Pregnant Women MBBCh, MSc Bahrain Medical Bulletin, Vol. 33, No. 4, December 2011

[3]. Al Sibiani S (2010): Asymptomatic Bacteriuria in Pregnant Women in Jeddah,MB, BCH, CABOG , Department of Obstetrics and Gynecology. Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi ArabiaJKAU: Med. Sci., Vol. 17 No. 1, pp: 29-42 (2010 A.D. / 1431 A.H.) DOI: 10.4197/Med. 17-1.4

[4]. Amiri ,M.H. Rooshan ,M.H.Ahmady & M.J. Soliamani (2009): Hygiene practices and sexual activity associated with urinary tract infection in pregnant women La Revue de Sante de la Mediterranee orientale vol 15 No1, 104-10.

[5]. Amiri M, Lavasami Z, Norouzirad R, Najibpour R, Mohamadpour M, Nikpoor A, Raeisi M, and Marzouni H: (2015): Prevalence of urinary tract infection among pregnant women and its complications in their newborns during the birth in the hospitals of Dezful city, Iran, 2012- 2013, Iran. Red Crescent Med J; 17 (8): pp. 1-8.

[6]. Ayoyi A, Kikuvi G, Bii C, and Kariuki S: (2017): Prevalence, etiology and antibiotic sensitivity profile of asymptomatic bacteriuria isolates from pregnant women in selected antenatal clinic. Pan African Medical Journal; 26: 41.

[7]. Blondeau JM. (2005): ,Evaluation of the cultdip plus dip slide method for urinary tract infection .Journal of Clinical Pathology .48(8) : 710-3

[8]. Duarte, G., Marcolin, A.C., Quintana, S.M. & Cavalli, R.C. (2008) [Urinary tract infection in pregnancy]. Rev Bras Ginecol Obstet, 30, 93-100.

[9]. Emilie Katherine Johnson, MD, chief Editor: Edward Savid Kim, MD, Facs (2011): Urinary tract infections in pregnancy J Social Med 2006;15:104-10

[10]. Emiru T, Beyene G, Tsegaye W and Melku S: (2013): Associated risk factors of urinary tract infection among pregnant women at Felege Hiwot Referral Hospital, Bahir Dar, North West Ethiopia. BMC Research Notes; 6: 292.

[11]. Fatima N, Ishrat S. Frequency and risk factors of asymptomatic bacteriuria during pregnancy. J Coll Physicians Surg Pak 2006; 16:273-275.

[12]. Gilstrap L and Faro S (1997): Infections in pregnancy, 2nd ed, A John Wiley & Sons Inc Publication.

[13]. Haider G, Zehra N, Munir A, and Haider A: (2010): Risk factors of urinary tract infection in pregnancy. JPMA; 60 (3): pp. 213-216.

[14]. Hamdan Z Hamdan ,Abdel haliem M, Salah K & Ishag Adam (2011): Epidemiology of urinary tract infections & antibiotics sensitivity among pregnant women at Khartoum North Hospital

[15]. Imade P, Izekor P, Eghafona N, and Enabulele O: (2010): Asymptomatic bacteriuria among pregnant women. North American Journal of Medical Sciences; 2 (6): pp. 263- 266.

[16]. Masinde A,Gumodoka B,Kilonzo a, Mshana SE (2009): Prevalence of urinary tract infection among pregnant women at Bygando Medical centre ,Mwanza,Tanzania 11(3) 9-154

[17]. Mazor – dray E Levy a Schlaeffer F, Sheiner E.(2009): Maternal urinary tract infection is it independently associated with adverse pregnancy outcome articles .22(2) 8-124

[18]. Mittal, P. & Wing, D.A. (2005) Urinary tract infections in pregnancy. Clin Perinatol, 32, 749-764.

[19]. Moore EE,Hawes SE,ScholesD,Boyko EJ Hughes JP, Fihn SD. (2008): Sexual intercourse and risk of symptomatic urinary tract infection in post menopausal women J Gen Intern Med 2008;23: 595-9.

[20]. Morgan KL .(2004):Management of UTIs during pregnancy. American Journal of Maternal Child Nursing, 2(4) : 254-8

[21]. Oladeinde B, Omoregie R, and Oladeinde O: (2015): Asymptomatic urinary tract infection among pregnant women receiving antenatal care in a traditional birth home in Benun city, Nigeria. Ethiop j Health Sci; 25 (1): pp. 3-8.

[22]. Oli A, Okafor C, Ibezim E, Akujiobi C, and Onwunzo M: (2010): The prevalence and bacteriology of asymptomatic bacteriuria among antenatal patients in Nnamdi, Azikiwe University Teaching Hospital Nnewi, South Eastern Nigeria. Nigerian Journal of Clinical Practice; 13 (4): pp. 409- 412.

[23]. Schmiemann, G., Kniehl, E., Gebhardt, K., Matejczyk, M.M. & Hummers-Pradier, E. (2010)The diagnosis of urinary tract infection: a systematic review. Dtsch Arztebl Int, 107, 361-367.

[24]. Scoles D .(2005): Risk factors associated with acute pyelonephritis in healthy women .Annals of Internal Medicine 142: 20-7

[25]. Sheffield, J.S. & Cunningham, F.G. (2005) Urinary tract infection in women. Obstetric Gynecology, 106, 1085-1092.

[26]. Tadesse E, Teshome M, Merid Y, Kibert B, and Shimelis T: (2014): Asymptomatic urinary tract infection among pregnant women attending antenatal clinic of Hawassa Referral Hospital, Southern Ethiopia. BMC Research Notes; 7, 155.

[27]. Tazebew D, Getenet B, Selabat M, and Wondewosen T: (2012): Urinary bacterial profile and antibiotic susceptibility pattern among pregnant women in North West Ethiopia; Ethiopia J Health Sci; 22 (2): pp. 121- 128.

[28]. Tosin O, Mathew A, Bello F, oludare I, Dolapo A, and Abosede A: (2014): Asymptomatic bacteriuria among antenatal women attending private hospital in Lagos, Nigeria. Scholars Journal of Applied Medical Sciences; 2 (6D): pp. 3076- 3080.

[29]. Tugrul S, Oral O ,Kumru P,Kose D,Alkan A,Yildirim G. (2005): Evaluation and importance of a symptomatic bacteriuria in pregnancy .Clinical Exp. Obstetric Gynecology ,32(4) 237-40 .

Entesar* ,'Prospective Study on The Prevalence of Urinary Tract Infections In Pregnancy: Al Dawadmi, Riyadh, Saudi Arabia." IOSR Journal of Environmental Science, Toxicology and Food Technology (IOSR-JESTFT) 7.1 (2018): PP 48-52.