

A review of urinary tract infections in pregnant women: Risks factors.

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Abstract

Urinary tract infection refers to both microbial colonization of the urine and tissue invasion of any structure of the urinary tract. Bacteria are most commonly responsible although yeast and viruses may also be involved. Urinary tract infection (UTI) is the most common disorder caused by bacterial agents in pregnancy, which can lead to important complications in newborn of such mothers in case of inappropriate diagnosis and treatment. Urinary tract infection during pregnancy is common and high in age group between 26-35 years. The high incidence of UTI in the young reproductive age group is due to early pregnancy particularly in the remote settings. UTI remain a prevalent problem during pregnancy especially, in developing countries. Genital hygiene, urination habits and low socioeconomic status play significant role in the occurrence of UTI during pregnancy. These could be attributed to lack of knowledge about UTI risk factors and its prevention during pregnancy.

Keywords: Urinary tract infection, Pregnancy, Risk factors.

Introduction

Urinary tract infection refers to both microbial colonization of the urine and tissue invasion of any structure of the urinary tract. Bacteria are most commonly responsible although yeast and viruses may also be involved [1, 2].

Urinary tract infection (UTI) is the most common disorder caused by bacterial agents in pregnancy, which can lead to important complications in new-born of such mothers in case of inappropriate diagnosis and treatment [3].

Urinary tract infections are the most common bacterial infections of pregnancy. Urinary tract infection is a major health problem, it has been reported among 20% of the pregnant women and it is the most common cause of admission in obstetrical wards. Symptomatic and asymptomatic bacteriuria has been reported among 17.9% and 13.0% pregnant women, respectively [4].

Globally, urinary tract infection and its associated problems are the cause of nearly 150 million deaths per year. The disease can progress in 40-50% of women. The prevalence of urinary tract infections in pregnancy ranges from 13-33%, with asymptomatic bacteriuria occurring in 2-10%. Asymptomatic bacteriuria is now are cognized entity in the range of urinary tract infections. Asymptomatic urinary tract infection is separation of a stated quantity of bacteria and suitably collected urine sample obtained from a person with no symptoms or signs of urinary tract infection.

Urinary tract infections represent the most common bacterial infection in pregnancy. Expectant women are at a greater risk for urinary tract infection, beginning in week 6 and peaking during weeks 22 to 24. This is due to a number of structural and physiological factors, with the occurrence of infection of the kidney increasing in the third trimester of pregnancy. The prevalence is constant and most of the recent studies, in developing and developed countries, report similar rates [3].

Risk factors associated with urinary tract infections

Age

Urinary tract infection during pregnancy is common and high in age group between 26-35 years. The high incidence of UTI in the young reproductive age group is due to early pregnancy particularly in the remote settings. Many studies considered advances in age a risk factor for getting UTI in pregnancy because there is decline in glycogen level, deposition and decrease in the Lactobacillus as part of ageing progression which increases bacterial adherence and attack by pathogens and make them more vulnerable.

Majority of urinary tract infection among pregnant women is well-known in age group 26-30 years, followed by 21-25, and 31-35years. The youngest among those studied was 18 years and oldest 45 years [5].

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Education level

Lower levels of education and low socio-economic grade have correlation with higher prevalence of ASB in many studies and reports [6]. This is because education improves the attitudes and beliefs of women. However, according to [7], level of education of the participants did not have any significant association with ASB; which disagrees with [6].

Socio-economic factors

The prevalence of urinary tract infection was found to vary with socio-economic status of respondents. The prevalence was higher in women with low socio-economic status compared to middle and higher classes [8].

Obstetric factors

Gravidity: According to, urinary tract infection in pregnancy was more common among women with first pregnancies (53.85%) compared to multi-gravidae (46.15%). This study shows that nulliparous women are more susceptible to UTI compared to multiparous women. A study by [9] in Nigeria also gave similar results [5].

Parity and gestational age considerably affect the prevalence of urinary tract infection. These have been previously reported in many studies [10].

Gestational age: Pregnant women in their third trimester of current pregnancy and those having more than one child were mostly susceptible to acquire urinary tract infection. Numerous anatomical and hormonal variations in pregnant women lead to urethral dilation and urinary inertia which increased changes of developing UTI [11].

Studies have shown that with respect to trimester, majority of the pregnant women with UTI were in third trimester, followed by second trimester and first trimester [12]. Bacteriuria is common in five to ten weeks of gestation, followed by ten to fifteen weeks and fifteen to twenty weeks. This finding was in line with the finding of the study conducted by [13].

Genetic factors

The presence of P-antigens on ABO blood group in the uro-epithelial cells act as receptors for *E. coli* adhesion. In people with secretor status, ABO blood group antigens are secreted in body fluids to cover the receptors for *E. coli* adhesion. Therefore, such persons hardly suffer from UTI. Comparatively, for persons having no secretor status, the receptors for *E. coli* adhesion are uncovered and exposed for attachment of bacteria hence resulting into recurrent UTI [5]. Around 4-7 per cent of pregnant mothers suffer from UTI during their pregnancies and about 25- 30% of them develop acute pyelonephritis. The important cause for their predilection is dilatation of pelvis and ureters, impediment to flow of urine from the bladder and hormonal changes [14].

Abnormalities such as vesico-rectal and vesico-vaginal fistulae, trauma to urinary tract from accident or operation, increases the chances of getting urinary tract infection in pregnant women. Such mothers do not go for checkup and may progress to complicated UTI [15].

Metabolic factors like diabetes mellitus are associated with a high prevalence of perianal colony by potential pathogens. Presence of glucose in urine increases occurrence and severity of infection in mothers with diabetes mellitus [16].

Conclusion

UTI remain a prevalent problem during pregnancy especially, in developing countries. Genital hygiene, urination habits and low socioeconomic status play significant role in the occurrence of UTI during pregnancy. These could be attributed to lack of knowledge about UTI risk factors and its prevention during pregnancy.

References

1. Onyenweaku FC, Amah HC, Obeagu EI, et al. Prevalence of asymptomatic bacteriuria and its antibiotic susceptibility pattern in pregnant women attending private ante natal clinics in Umuahia Metropolitan. *Int J Curr Res Biol Med.* 2017;2(2):13-23.
2. Ifediora AC, Obeagu EI, Akahara IC, et al. Prevalence Of Urinary Tract Infection in Diabetic Patients Attending Umuahia Health Care Facilities. *J Bio Innov.* 2016;5(1):68-82.
3. Nwosu DC, Obeagu EI, Amajioyi O, et al. Prevalence Of Bacterial and Parasitic Urinary Tract Infections In Female Students of Imo State University. *World J Pharm Pharm Sci.* 2015;4(5):152-67.
4. Okorie N, Obeagu EI, Odigbo CN, et al. Cytological Evaluation of Urinary Samples among Vesicovaginal Fistula Patients in National Obstetrics Fistula Centre, Southeastern Nigeria. *Asian Journal of Medicine and Health.* 2022;20(10):136-46.
5. Care A, Alrass C, Qassim A, et al. The Prevalence of Urinary Tract Infection among Pregnant Women Attending Antenatal Clinic at, 2016;5(5):23-7.
6. Mokube MN, Atashili J, Halle-Ekane GE, et al. (2013) Bacteriuria amongst Pregnant Women in the Buea Health District, Cameroon: prevalence, predictors, antibiotic susceptibility patterns and diagnosis. *PLoS ONE.* 2013;8(8):e71086.
7. Onu FA, Ajah LO, Ezeonu PO, et al. Profile and microbiological isolates of asymptomatic bacteriuria among pregnant women in Abakaliki, Nigeria. *Infect Drug Resist.* 2015;8: 231-5.
8. Fatima N, Ishrat S. Frequency and risk factors of asymptomatic bacteriuria during pregnancy. *J Coll Physicians Surg Pak.* 2006;16(4):273-5.
9. Ajayi AB, Nwabuisi C, Aboyeji AP, et al. Asymptomatic Bacteriuria in Antenatal Patients in Ilorin, Nigeria. *Oman Med J.* 2012;27(1):31-5.
10. Halder G, Munir A, Zehra N, et al. Risk factors of urinary tract infection in pregnancy. *J Pakistan Med Assoc.* 2010;60(3):213-6.

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11. Bankole OBH, Omoregie R, Oladeinde OB. Asymptomatic urinary tract infection among pregnant women receiving ante-natal care in a traditional birth home in Benin City, Nigeria. *Ethiop J Health Sci Jan.* 2015;25(1):3-8.
12. Length F. Urinary tract infection amongst pregnant women. 2015;9(6):355-9.
13. Chandel R, Kanga A, Thakur K. Prevalence of Pregnancy Associated Bacteriuria: A study done in a tertiary care hospital. *The J Obstet Gynecol India.* 2012;62(5):511-14.
14. Musbau S, Muhammad Y. Prevalence of Asymptomatic Bacteriuria among Pregnant Women Attending Antenatal Clinic at Federal Medical Centre Nguru Yobe State. *Sch J App Med Sci.* 2013;1(5):658-60.
15. Samuel O, Victoria O, Ifeanyi O. Prevalence of Asymptomatic Bacteriuria among the Pregnant Women Receiving Antenatal Care at Federal Medical Centre Owerri, Nigeria. *Univers J Clin Med.* 2016;4(1):1-5.
16. Emilie A, Johnson K, Editor C et al. *Urinary Tract Infections in Pregnancy.* WebMD LLC. 2012.