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Research Article

Assessment of risk factors contributing to urinary tract infections in women

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ABSTRACT:

Introduction : Urinary tract infection is a common contagion among men and women but incidence is quite high among women due to their anatomy. The incidence of the infection is higher among sexually active women and the possibilities of encountering the infection after a sexual intercourse is higher. Identified risk factors for such infections include sexual activity, spermicide-based contraception, delayed postcoital micturition, and a history of previous UTIs.

OBJECTIVES :

1. **To assess socio demographic factors among patients of urinary tract infection.**
2. **To assess risk factors contributing to urinary tract infection.**

Material and methods

Total 91 female patients, who were diagnosed to have urinary tract infection were selected in our study. Data regarding socio-demographic and various risk factors was collected and frequency distribution tables were prepared.

RESULTS : Majority females (68%) were between 18-45 years old. About 64% patients belonged to rural area, and 90% patients belong to lower, or lower middle class. About 68% patient's education was below high school and about 74% patients were married. Among risk factors for UTI, we found that sexual activity (in 83%) was most common risk factor for UTI.

CONCLUSION: Patient who are exposed to risk factors, should be given special attention by the visiting clinicians, so that early diagnosis can be made and early treatment can be started. Early diagnosis and treatment leads to less complications, morbidities and mortality.

Introduction

Urinary tract infection is a common contagion among men and women but incidence is quite high among women due to their anatomy.[1] Reproductive physiology of females makes them more vulnerable to the infection and can occur through orifices, like the urethra, vaginal opening, perineum, anus which are known to dwell their own microbial flora.[2] The incidence of the infection is higher among sexually active women and the possibilities of encountering the infection after a sexual intercourse is higher.[3,4] The infection usually affects the various parts of the urinary tract and the infection generally initiates from the lower urinary tract which comprises of the bladder and urethra and the infection is referred to as cystitis. The advancement of the condition results in the spreading of infection to the upper urinary tract affecting kidneys and the condition is referred to as pyelonephritis.[5] The symptoms associated with bladder and kidney infections are contrasting which includes painful and frequent urination in case of cystitis whereas conditions like high fever and flank pain are commonly experienced in case of pyelonephritis.[6] Identified risk factors for such infections include sexual activity, spermicide-based contraception, delayed postcoital micturition, and a history of previous UTIs.[7] Although the prevalence of bacteriuria during pregnancy is similar to that in non pregnant women, pregnancy enhances the possibility of infection among women.[8,9]

OBJECTIVES

1. To assess socio demographic factors among patients of urinary tract infection.
2. To assess risk factors contributing to urinary tract infection.

Material and methods

This study was conducted in Vindhya hospital & research centre Rewa. Total 91 female patients, who were diagnosed to have urinary tract infection (both from out patients department and in patients department) were selected in our cross sectional study. Data regarding socio-demographic and various risk factors was collected and frequency distribution tables were prepared.

RESULTS

Total 91 female patients, who were diagnosed to have urinary tract infection, were taken as study subjects. Among them majority (68%) were between 18-45 years old. About 64 % patients belonged to rural area, 90% patients belong to lower, or lower middle class. About 68% patient's education was below high school and about 74% patients were married.

Among risk factors for UTI, we found that sexual activity (in

83%) was most common risk factor for UTI. 36% patients had past history of UTI. 15% patients were taking oral contraceptive pills. 12% patients had hypothyroidism, 11% patients had urinary incontinence, about 10% patients were diabetics. 18% females were post menopausal, and 5% patients were pregnant.

Table 1 Showing Socio-Demographic Factors Among Study Patients

Socio-demographic factors	Frequency	Percentage
Age (in years)		
<12	04	4.3
12-18	08	8.7
18-45	62	68.1
>45	17	18.9
Residence		
Urban	33	36.2
Rural	58	63.8
Education		
Illiterate	11	12
Primary	13	14
Middle	20	22
High	18	20
Higher secondary	16	18
Above higher secondary	13	14
Socioeconomic status (for urban patients)		
Upper class	03	03
Upper middle	06	06.5
Lower middle	35	39
Lower class	47	51.5
Marital status		
Unmarried	18	19.7
Married	67	73.6
others	06	06.7

Table 2 Showing Risk Factors for UTI In Study Patients

Name of risk factors	Frequency	Percentage
Urolithiasis	12	13
Catheterization	04	4.3
Renal tumor	00	00
Diabetes	09	9.8
Hypertension	07	7.6
Hypothyroidism	11	12
Current Pregnancy	05	5.4
Non functional kidney	02	2.1
Urogenital surgery	06	6.5
Incontinence	10	11
Infection in other body organ	03	3.2
Post menopause	16	18
Previous history of UTI	33	36
Oral contraceptive use	14	15
No. of days with intercourse in past 7 days (Sexual activity) 0 1 2 3-7	 15 30 31 15	 16.2 33 34 16.4
Diaphragm and spermicide use	04	4.3

DISCUSSION

According to study done by Dielubanza, EJ et al[10], in postmenopausal females estrogen level decreases, this leads to loss of protective vaginal flora, and chances of getting UTI increases. Another study done by Goldstein, I et al[11] showed that in postmenopausal women sometimes vaginal atrophy can sometimes occur, which is also an important risk factor for recurrent urinary tract infections in postmenopausal females. In our study, in postmenopausal females UTI was noted in about 18% studied patients. In our study most common age group affected was between 18-45 years which is sexually active group. We found that sexual activity was most common risk factor associated with UTI, about 83% patients had history of intercourse in last 7 days of whom 33% patients had history of one intercourse in last 7 days, and more than 50% patients had history of 2 or more times intercourse in last 7 days. Similar findings were also observed in other studies.Nicolle LE[12] has shown in his study that in young sexually active women, sexual activity is the cause of 75–90% of bladder infections, with the risk of infection related to the frequency of sex. A study by Scholes D,[13]et al found that Frequency of sexual intercourse is strongest risk factor for recurrent UTIs.

A strong impact of socioeconomic class was seen with UTI in our study as about 90% patients belonged to the lower middle or lower socioeconomic group. Similar findings were noted in study conducted by Haider G[14] as 80 % UTIs cases belonged to lower socioeconomic status. In our study frequency of UTI in pregnancy was 5.4 %. Similar findings were shown in other study where the frequency of UTI during pregnancy was 2.5%-8.7%[15]. The hormonal changes in pregnancy leads to decreased bladder tone, diminished peristalsis and dilatation of renal pelvis and ureter[16,17] It has been claimed that pregnancy produces physical obstruction in the female urinary tract and obstruction is one of the important risk factor for the development of the infection.[18,19] Diabetics are at higher risk of urinary tract infection due to the unfavourable metabolic changes such as elevated blood sugar levels, which suppress the immune system. In our study 10% UTI patients were diabetics, similar findings was found in study by Ramzan M.[20]

CONCLUSION

Our study clearly shows that chances of urinary tract infection increase in the presence of risk factors. We recommend that the patient, who are having such risk factors, should be given special attention by the visiting clinicians, so that early diagnosis can be made and early treatment can be initiated to reduce morbidity and mortality.

REFERENCE

[1] http://www.jstor.org/discover/10.2307/4457547?uid=3738256&muid=2&uid=4&sid=21103681000971.

[2] http://emedicine.medscape.com/article/2040207-overview.

[3] Fatima N, Ishrat S. Frequency and risk factors of asymptomatic bacteriuria during pregnancy. J Coll Physicians Surg Pak. 200616:273-5.

[4] Mittal P, Wing DA. Urinary tract infections in pregnancy. Clin Perinatol. 2005;32:749-64.

[5] DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, et al. (2011) Pharmacotherapy: A Pathophysiologic Approach. (8th edn), McGraw-Hill Medical, Columbus, Ohio, USA. Mittal.

[6] Demilie T, Beyene G, Melaku S, Tsegaye W (2012) Urinary bacterialprofile and antibiotic susceptibility pattern among pregnant women in north west ethiopia. Ethiop J Health Sci. 22:121-128.

[7] Strom BL, Collins M, West SL, Kreisberg J, Weller S. Sexual activity, contraceptive use, and other risk factors for symptomatic and asymptomatic bacteriuria. Ann Intern Med. 1987;107:816–23.

[8] Whalley P. Bacteriuria of pregnancy. Am J Obstet Gynecol 1967;97:723-38.

[9] Dafnis E, Sabatini S. The effect of pregnancy on renal function: physiology and pathophysiology. Am J Med Sci.1992;303:184-205.

[10] Dielubanza, EJ; Schaeffer, AJ. "Urinary tract infections in women". The Medical clinics of North America. 2011;95:27–41.

[11] Goldstein, I; Dicks, B; Kim, NN; Hartzell, R. "Multidisciplinary overview of vaginal atrophy and associated genitourinary symptoms in postmenopausal women". Sexual medicine. 2013;1:44–53.

[12] Nicolle LE. "Uncomplicated urinary tract infection in adults including uncomplicated pyelonephritis". Urol Clin North Am. 2007;35:1-12.

[13] Scholes D, Hooton TM, Roberts PL, Stapleton AE, Gupta K, Stamm WE. Risk factors for recurrent UTI in young women. J Infect Dis. 2000;182:1177–82.

[14] Haider G, Zehra N, Munir AA, Haider A. Risk factors of urinary tract infection in pregnancy. J Pak Med Assoc. 2010;60:213-6.

[15] Debaun M, Rowley D, Province M, Stockbaver JW, Cole FS et al. Selected antepartum medical complications and very low birth weight infants among black and white women. Am J Public health. 1994; 84: 1495-7.

[16] Sklar AH; Caruana RJ; Lammers JE; Strauser GD. Renal infections in autosomal polycystic kidney diseases. Am J Kidney Dis. 1987;10:81-8.

[17] Plorade JJ, Sherris JC, Ryan KJ, Georgeray C. Urinary tract infection. In: Medical microbiology 1st ed . Elsiver NEW YORK * Amsterdam * Oxford ELBS. Tropical Health Technology /Butterworth.1984;247-8,601-7.

[18] Jabbar, HA, Moumena RA, Mosli HA, Khan AS, Warda A. Urinary tract Infection in pregnancy. Annal of Saudi Medicine 1991; 11: 322-24.

[19] Schneider PF, Riley TV. Staphylococcus saprophyticus urinary tract infections. Eur J Epidemiol 1996;12:51-4.

[20] Ramzan M, Bakhsh S, Salam A, Khan GM, Mustafa G. Risk factors in urinary tract infection. Gomal Journal of Medical Sciences. 2004;2:51-3.