

Urinary Tract Infection and factors associated with it among women in a private medical college

Prof. Dr. V. Radhakrishnan¹, Prof. Dr. M. Senthil Velan², Prof. Dr. Asayas
Bosco Chandra Kumar³, Dr.P.Sri Sai Janani⁴, Dr.F.Thajes Kency⁵,
Dr.C.Subalakshmi⁶, Dr.J.Yauvannasri⁷

¹(professor, Department of General Surgery, Sri Lakshmi Narayana Institute of Medical Sciences
PUDUCHERRY/BIHER, INDIA)

²(professor, Department of General Surgery, Sri Lakshmi Narayana Institute of Medical Sciences
PUDUCHERRY/BIHER, INDIA)

³(professor, Department of General Surgery, Sri Lakshmi Narayana Institute of Medical Sciences
PUDUCHERRY/BIHER, INDIA)

⁴(MS. General Surgery-post graduate, Department of General Surgery, Sri Lakshmi Narayana Institute of
Medical Sciences PUDUCHERRY/BIHER, INDIA)

⁵(CRRI, Department of General Surgery, Sri Lakshmi Narayana Institute of Medical Sciences
PUDUCHERRY/BIHER, INDIA)

⁶(CRRI, Department of General Surgery, Sri Lakshmi Narayana Institute of Medical Sciences
PUDUCHERRY/BIHER, INDIA)

⁷(CRRI, Department of General Surgery, Sri Lakshmi Narayana Institute of Medical Sciences
PUDUCHERRY/BIHER, INDIA)

Abstract:

BACKGROUND: The most common bacterial infection in middle aged females is Urinary Tract Infection (UTI), but UTI in older people could be a complicated problem in view of approach to diagnosis, treatment and prevention. It frequently presents with pelvic pain, increased urge to urinate, increased frequency, pain during micturition, foul smelling urine, cloudy urine, blood in the urine and sense of incomplete bladder emptying, fever, chills, vomiting, fatigue, malaise, vaginal irritation and a range of atypical symptoms such as delirium, gastrointestinal signs.

OBJECTIVE: The main purpose is to describe the prevalence of UTI in women, to identify factors associated with UTI.

METHODS: A cross-sectional, carried out in a private medical college, Sri Lakshmi Narayana Institute of Medical Sciences, Puducherry during November 2018 to January 2019. Data were collected from structured interviews and assessments made from medical records, care givers and relatives. UTI was diagnosed if the person has symptoms suggestive of it and was recorded, with either short- or long term ongoing treatment with antibiotics, or symptoms and laboratory tests judged to indicate the presence of UTI by the responsible physician or the assessor. Analysis was done using Microsoft excel and SPSS

RESULTS: One hundred patients were taken as samples and 37% were diagnosed as having UTI in the past 3 months and 9% having suffered from at least one UTI during the preceding year and 3% had at least one diagnosed UTI during the preceding 5 years. In these patients, UTI during the preceding year was associated with appendicitis, fibroid and adenomyosis. 7% were diagnosed as having a UTI without symptoms when they were assessed, and 3% were diagnosed as anaemic during the past month, 4% have birth control, 6% have diabetes mellitus, 18% of women attained menopause.

CONCLUSION: Since there is a high prevalence of UTI among women there is a great need for further knowledge among women to prevent, detect and treat UTI, the connection between the associated factors and UTI should be studied.

Keywords: UTI, Prevalence, factors associated with UTI

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I. Introduction

With increasing age the prevalence of urinary tract infection (UTI) increases in both women and men. However, it seems that UTI is more common among women and when an old woman suffers from a UTI it might often be regarded as a harmless but in men, it should be carefully assessed and followed up. It might be

possible to prevent UTI instead of just treating it with antibiotics if the patients increase their knowledge about why UTI occurs and the underlying causes. UTI being very common, the knowledge about how it affects women is poorly investigated and the factors associated with UTI and an improved understanding of the impact UTI has on women health and well-being, in order to improve the care.

URINARY TRACT INFECTION

UTI is one of the most common bacterial infections in women of all ages and the incidence and prevalence increase with age. More than half of all women have at least one episode of UTI in their lifetime and the risk of contracting a UTI increases in postmenopausal women. Hormonal changes, such as decreased estrogen may contribute to increased UTI prevalence in older women. Several factors contribute to the high occurrence of UTI among the old, such as incomplete bladder emptying, previous stroke and the presence of an indwelling urinary catheter (IUC) and a history of UTI at younger ages. Important contributory factors among those living in institutions are those which reduce functional status and cognition due to co - morbidity as a result of dementia or stroke, which is often accompanied by a neurogenic bladder. In combination with reduced functional status and cognition there could be changes in their personal hygiene which may promote UTI.

URINARY TRACT INFECTION AND MALNUTRITION

Malnutrition contributes to adverse metabolic events that compromise the immune system and increase susceptibility to infections and it is associated with poor health-related quality of life. One previous study has shown that malnutrition was not associated with UTI among patients living in nursing homes while another study found an association between malnutrition and UTI among patients in hospital care. Whether or not malnutrition is a risk factor for UTI, it is important to detect, prevent and treat malnutrition among old people in order to reduce the risk of illness.

ASYMPTOMATIC BACTERIURIA

Asymptomatic bacteriuria can be abbreviated as ASB. ASB is a common finding, both in community-dwelling and in institutionalized old women. Factors that can precipitate ASB are multiple co-morbid chronic diseases. A recommended standard for diagnosis of ASB in women two consecutive voided specimens with the isolation of $\geq 10^5$ colony-forming units (CFU)/mL of the same organism. Distinguishing between ASB and UTI can be difficult impairment which means that they may have minimal or atypical symptoms of UTI. One important unanswered question is why ASB does not produce local symptoms and one explanation could be that the immune system does not react to the bacteria. This could indicate that the ASB is not less harmful despite the lack of symptoms since it occurs in a person with an impaired immune system. A large proportion of people are treated with analgesics and anti-inflammatory drugs which could mask the local symptoms.

RISK FACTORS AND ASSOCIATED FACTORS FOR UTI

A number of risk factors for and factors associated with UTI have been described in previous research. The distinction between these two is still not clear. Likewise, various factors may promote UTI and will vary in importance for different individuals and also vary over the course of a person's life. Risk factor differs between the young and the old but they can also differ depending on whether or not the old women live in an institution. It has been suggested that risk factors for UTI can be categorized as anatomic and physiologic, genetic and behavioral. The risk factors of UTI such as: delayed bladder emptying or increased post-void residual volume due to anatomical and physiological anomalies. Such anomalies can be cystocoeles, rectocoeles and bladder diverticula. Urinary Infection (UI) is also a suggested risk factor for UTI but how UI predisposes women to UTI is not entirely clear. Since UTI and UI are both frequent postmenopausal conditions they might be partly explained by reduced levels of estrogen. The effect of loss of the estrogen on the genitourinary mucosa which can lead to fragile mucous membranes is also a physiological factor. Interleukin-8, an inflammatory cytokine, is another factor with genetic variability, that may influence the development of UTI and both urinary immune reactive interleukin-1 and interleukin-6 are more common in the urine of bacteriuria in institutionalized old persons.

RATIONALE

UTI is a common bacterial infection in women of all ages but the prevalence increases with increased age. Associated factors and risk factors for UTI are: urinary incontinence, diabetes, sexual activity, a prior history of UTI, urinary retention and estrogen deficiency. It is important to be aware that women might present with more atypical symptoms of UTI which may complicate the detection of UTI and delays the treatment. Despite the fact that UTI is considered a relatively banal condition, the consequences might be more serious

among the very old and may affect their health physically, psychologically and socially to a greater extent. It is important to generate increased knowledge and a deeper understanding of UTI and its associated factors.

II. Aim:

To describe the prevalence of UTI among women and to investigate those factors associated with it.

III. Method:

Initially, the participants were informed about the study and later by means of a phone call, and their informed consent was obtained. The participants were contacted first. The data were collected during one or more phone by a medical student. Structured interviews and assessment scales were used in the collection. All questions, assessments and scales were interviewer administered by trained interviewers and performed in the same order.

IV. Statistical Analysis:

Statistical methods - Quantitative analysis

Quantitative analysis was performed using the Statistical Package for the Social Sciences (SPSS®), version 21. Analyses were made using the chi-square test. Logistic model was constructed, based on and a prior hypothesis concerning potential risk factors for UTI and variables with an association ($p \leq 0.15$) with UTI in the preceding year were included in the model. Multivariate logistic regression models were constructed based on a prior hypothesis concerning potential risk factors such as acute medical conditions (e.g. infections). A p-value of <0.05 was considered statistically significant in all statistical analyses

V. Results:

One hundred patients were taken as samples and 37% were diagnosed as having UTI in the past 6 months and 9% having suffered from at least one UTI during the preceding year and 3% had at least one diagnosed UTI during the preceding 5 years. In these patients, UTI during the preceding year was associated with appendicitis, fibroid and adenomyosis. 7% were diagnosed as having a UTI without symptoms when they were assessed, and 3% were diagnosed as anemic during the past month., 4% have birth control, 6% have diabetes mellitus , 18% of women attained menopause Anatomical and physiological anomalies use.

VI. Conclusions:

This indicates that UTI is common among middle aged and old aged females which is a serious health problem. The strongest factors associated with UTI during the preceding year were vertebral fractures, urinary incontinence, inflammatory rheumatic disease and multi-infarct dementia. UTI seems to be associated with delirium and to have a significant impact on old and very old women morale or subjective well being and those affected suffer both physically and psychologically and their social life might be limited. Thus health care professionals must improve their knowledge of UTI, change their attitude towards it and improve both treatment and primary and secondary prevention of UTI among old and very old women. Since there is a high prevalence of UTI among old women combined with an increasing older population there is a great need for further knowledge about this area and also a great need for intervention studies. To prevent, detect and treat UTI among old women, the connection between the associated factors and UTI should be explored further. More attention has to be given to old aged women with UTI and it has to be prevented, detected and treated if these women are to have a good old age.

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