

Mini Review

Urinary Tract Infection in the Elderly

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Abstract

Urinary tract infection is the infection of the urinary tract and the elderly is susceptible to it. It does not only infect the elderly but also affects adult men and women. The elderly is anyone aged 65 years and above. Being elderly increases the risk of contacting urinary tract infections because of the changes that occur in the genitourinary system. Urinary tract infections in the elderly may be symptomatic or asymptomatic.

INTRODUCTION

Urinary tract infections are infections that affect the urinary tract urinary tract and it affects both adult men and women. Aging is a normal aspect of life that affects humans. In the process of aging all the body organs and system are affected including the genitourinary system urinary tract infections consists of a bacteria infection that affects the urinary tract which may or may not produce symptoms [1]. Urinary tract infections are one of the common infections that affect the elderly. Among healthy elderly patients in the community, the rates of urinary tract infections range from 5-30% and higher rates are seen as age advances [1]. Elderly people have bacteria normally in their urine therefore urinary tract infections in the elderly should only be treated when it is causing symptoms and problems. Urinary tract infections and asymptomatic bacteriuria are frequently common in elderly patients [2].

WHO IS AN ELDER?

The elderly is anyone 65 years and above. In some countries, the elderly is taken to be anyone that is 60 years and above in countries where 60 years is the age of retirement from the government civil service. The elderly in some countries are given special benefits as there is a gradual decline in their physical and mental function due to the process of aging. The process of aging is different for different individuals.

EFFECT OF AGING

Aging causes a lot of changes in the human body

1. There are comorbidities and multi-morbidities. They are affected by chronic illnesses that may affect the management of urinary tract infection in the elderly.
2. Polypharmacy is common with the elderly where they may be taking more than one drug. These drugs may be causing Immunosuppression and make the elderly predisposed to urinary tract infections.

3. There are changes in the immune system.
4. Changes that occur in the kidneys occur both in the structure and function of the urinary tract. There is a decrease in the average renal blood flow of about 60% for each decade, dropping from 600ml per minute per 1.73m³ to 300mls⁴. The other changes in the urinary tract are:
 - a. Decrease in both the volume and weight of the kidneys.
 - b. Reduction in the number of glomeruli present in the kidneys.

Urinary tract infections cause more mortality in the elderly than in young adults [3,4]. Urinary tract infections are common in adults in institutions affecting about 25% to 30% of bacteria infections that affect individuals in institutions with elderly women affected more [5].

SYMPTOMS OF URINARY TRACT INFECTIONS IN THE ELDERLY

The symptoms of urinary tract infections are typical and sometimes the patient may be asymptomatic or have non-specific symptoms.

1. Dysuria
2. Anorexia in some cases, the elderly with urinary tract infection may vomit.
3. Weakness
4. Burning sensation passing urine
5. Increase frequency
6. Urinary incontinence.
7. Changes in the mental state such as confusion, irritability
8. Fever
9. Urinary retention

10. Malaise that is generally feeling unwell.
11. Lower abdominal pain, some elderly may not be able to localize pain properly.
12. Falls may occur in the elderly caused by a urinary tract infection therefore every elderly that falls should be investigated for urinary tract infections.

RISK FACTORS FOR URINARY TRACT INFECTIONS IN THE ELDERLY

Due to the changes associated with aging, the elderly are at risk of developing urinary tract infections. The urinary tract is a common source of bacteraemia in the elderly. The urinary tract is the most common sources of bacteraemia in the elderly even when there is no urinary catheter [3].

1. Being in an institution such as geriatric homes for the elderly. Among institutionalized patients, the prevalence rates of urinary tract infections increases remarkably between 17 to 55% in women and 15-31% in men [1].
2. Urethra Catheterization: Insertion of a urethral catheter increases the risk of urinary tract infections in the elderly whether the urethral catheters is placed on a short or long term basis. Urethral catheters placed for a short term are associated with single bacteria while urinary catheters that are placed for long periods are associated with polymicrobial infections [1].
3. Malnutrition: Malnutrition puts the elderly at risk of acquiring urinary tract infection. This is usually what puts the elderly in nursing homes at risk of urinary tract infection.
4. Preserve of other illness that will depress the immunity.
5. Neurogenic bladder caused by diseases such as stroke [6].
6. Dehydration
7. Hormonal changes associated with aging and the elderly
8. Changes in the immune system of the elderly
9. Immunosuppression in the elderly. This is caused by malnutrition, diabetes mellitus, medications that cause immuno-suppression such as irradiation and chemotherapy for cancer, autoimmune diseases [5].

Sometimes the elderly may present with recurrent urinary tract infection. The risk factors for recurrent urinary tract infections are:

- a. Decrease ability for the patient to perform the activities of daily living especially those that cannot maintain good personal hygiene such as bathing and cleaning up after using the toilet [5].
- b. Urinary incontinence when the patient cannot control the passage of urine.
- c. When an indwelling urethral catheter is in place.
- d. Antibiotic use especially for long periods as the causative bacteria may develop antibiotic resistance.

When an indwelling urethral catheter is in place especially

for a long time, there is increased risk for bacteremia that is bacteria in the urine. There is an inflammatory response to the bacteria or the catheter. The urinary catheter then develops a conditioning film of protein electrolyte and some other organic molecules from the urine. Bacteria then attaches to this film that is formed thereby causing urinary tract infections [5].

MANAGEMENT OF URINARY TRACT INFECTIONS

Investigations for Urinary Tract Infections in the Elderly

Urine is normally sterile. Bacteria in the urine of the elderly should only be treated when it is causing symptoms.

1. Blood – Complete blood count to show the differentials of the white blood cells.
2. Urine
 - a. Urinalysis may show if nitrite and/or protein is present in the urine. Proteinuria shows that there is complication damaging the kidney.
 - b. Urine microscopy to identify the particular bacteria that is causing the urinary tract infection.
 - c. Urine culture and sensitivity: This is the culture of the bacteria causing the urinary tract, infection and identifies the particular antibiotic that will be sensitive to the bacteria.

There is no significant difference between bacteremia and non-bacteremia in the elderly patient with urinary tract infection [7].

TREATMENT OF URINARY TRACT INFECTIONS

Elderly patients with urinary tract infection may require hospitalization and the presence or absence of bacteria does not influence the length of stay and mortality [7]. Urinary tract infections are treated with antibiotic that the causative bacteria is sensitive to. The presence of bacteria alone does not imply that infection has occurred and this colonization does not usually require antibiotic treatment. Antibiotics should be used with caution in the elderly because of side effects and also the development of antibiotic resistance.

Antibiotics in the elderly can cause diarrhea, vaginal yeast infections [in the females], may interact with other medicines taken by the patient and other infections may also present. It should be taken with caution in patients with the possibility of long hospital stay. Diagnosis of urinary tract infection in the elderly requires careful interpretation of the results of both the blood and urine investigations and if complications have developed [8]. Many elderly patients with urinary tract infections are at risk of poor outcomes with a decline in their functional abilities, hospitalization, and infection of the blood stream and in extreme cases death can occur [5].

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