99 – Treating Cystitis in Adult Women: Equal Outcome Irrespective the Degree of Bacteriuria.

Introduction
Urinary tract infection is one of the most frequent causes in the world of emergency department assistance and a frequent cause of consultation in family medicine. We consider it clinically as either complicated (pyelonephritis) or uncomplicated (cystitis). The last one is characterized by presentation by young women, who are immunocompetent and not pregnant. Its treatment follows the diagnostic approach performed in the medical care dictated by the symptoms presented by the patient. In some cases, it is important to take laboratory exams like uroanalysis because there are no clear symptoms but that is not a rule for all the patients. (1)

Definition
The importance of defining concepts regarding urinary tract infections is the antibiotic treatment that is going to be formulated and the risk of causing resistance due to an inappropriate use. In the case of asymptomatic bacteriuria - defined as the presence of bacteria in the urine with or without pyuria but without symptoms, the population to be treated is important, unlike cystitis where there is an inflammation of the bladder caused by a bacterial infection, which causes symptoms and is evident at the time of performing laboratory tests. In pyelonephritis the renal parenchyma is more compromised. It is important to notice that a complicated or uncomplicated infection may present with systemic illness. (2)

Epidemiology
It is estimated that in the world at least 7 million of people per year have an episode of cystitis that forces them to consult in an emergency department and 25% will have a recurrent infection. Half of the women will have had at least one episode by age 32. In men it is estimated that only 1% of those less than 50 years will have had an episode of urinary tract infection.
The risk factors documented in the literature are multiplied by the frequency of sexual activity in the last 12 months, the use of spermicides, the insertion of catheters in the urinary tract postoperatively and episodes of urinary tract infection. (1) (3)
**Aetiology**

Cystitis is a multifactorial disease that depends on two main factors. The first one is the virulence of the bacteria, that is determined by its fimbriae, lipopolysaccharides and toxins. The other is the host susceptibility that is related to the adequate immune system activation.

The most common bacteria that are present in Urinary infection is Escherichia Coli that have several virulence factors that promote this type of infections. Other microorganisms are Klebsiella pneumoniae in 15% of cases and Proteus Mirabilis in 7% of cases occupying almost 90% of the causes of urinary tract infection. The other 10% is documented by different microorganisms such as Enterobacteriaceae, the Gram-positive pathogens like the staphylococcus saprophyticus that has been found in young women. (4)

**Diagnosis**

There are specific symptoms that guide the attending physician to perform a good diagnostic approach. The most frequent symptom is dysuria followed by an increase in the urinary frequency, nycturia and bladder tenesmus with less frequent suprapubic pain.

When presenting with symptoms such as pain with percussion and back pain, that will be probably related to pyelonephritis. Another differential diagnosis is vaginosis, since it sometimes presents with symptoms like dysuria and suprapubic pain.

The need to perform laboratory tests such as uroanalysis and urine culture lies in the doubt regarding the patient's clinical presentation or physical examination or for determination of antibiotic resistance.

Previously a diagnosis of cystitis in women was defined as urine culture bacteria count ≥10⁵ CFU / mL on two occasions. However it has been seen that in symptomatic women with a urine culture of ≥ 10² CFU / mL with a uropathogen microorganism the diagnosis is considered as definitive.

It is not routinely recommended to take blood tests or control of urinary cultures in uncomplicated urinary infectious diseases, the recommendation is to start the management if the symptoms are suggestive to cystitis.

**Treatment**

Cystitis is a common disease that may be treated if symptoms are present because it could be complicated and turn into a pyelonephritis that increase the number of hospitalizations and costs.

The family doctor must be aware of the resistance to antibiotics that exists in the population where (s)he is located, to avoid a therapeutic failure. To start the antibiotic treatment the physician must be sure that the patient has the symptoms and if there is a urine culture it does contain a uropathogen microorganism.

In the presence of asymptomatic bacteriuria there are recommendations for screening and treatment; the pregnant women or people who are going to have a urological procedure must have a urine culture with negative results. If there are microorganisms present the physician need to give an antibiotic prophylaxis.

There are different types of guidelines that mention antibiotic treatments according to bacterial resistance. In Colombia, the treatment is divided in three lines: the first one is formed by 2 antibiotic groups (nitrofurantoin 100 mg. every 12 hours for 5 days or Fosfomycin 3 g single dose) Another group is the trimethoprim sulfa that is mentioned in other countries but has documented resistance.

From the second line cefuroxime 500 mg is recommended every 12 hours for 3 days. And the third line is cephalosporins of first generation, ampicillin sulbactam or ampicillin clavulanate for 5 to 7 days. (2)
Take Home Message

- Cystitis occurs in immunocompetent women without associated comorbidities. It is usually not complicated.
- Half of the women who have this condition present it before they are 40 years old.
- Symptoms such as dysuria, nocturia, and bladder tenesmus with laboratory tests such as urine culture are part of the diagnostic approach.
- E. coli is the organism that most occurs in this condition.
- There are two groups of antibiotics as the first option for treatment, nitrofurantoin and Fosfomycin.

Original Abstract

http://www.wonca-europe.org/content/treating-cystitis-adult-women-equal-symptomatic-outcome-irrespective-degree-bacteriuria

References

Background. A woman presenting with symptoms suggestive of bacterial cystitis is a frequent occurrence in the general practice setting. One in three women develop a urinary tract infection (UTI) during their lifetime (compared to 1 in 20 men). Objective. In this article we provide an outline of the aetiology, pathogenesis and treatment of bacterial cystitis in the primary care setting. We suggest measures that may assist before. Bacterial cystitis is usually associated with bacteriuria (bacteria in the urine) and pyuria (presence of white cells in the urine), but both can occur without infection. Urinary tract ultrasound also confirms the degree of bladder emptying by measurement of postvoiding residual. Abnormalities on ultrasound. The prevalence of bacteriuria among young women is strongly associated with sexual activity. It was 4.6% among premenopausal married women but only 0.7% among nuns of similar age [12]. Pregnant and nonpregnant women have a similar prevalence of bacteriuria (2%–7%) [31]. Premenopausal, nonpregnant women. The natural history of asymptomatic bacteriuria in premenopausal nonpregnant women has been described in short-term [13] and long-term [41, 45–48] prospective cohort studies. In young women, symptomatic urinary infection occurred significantly more frequently in bacteriuric women than in non-bacteriuric women within 1 week after a urine culture (8% of bacteriuric women became symptomatic, compared with 1% of women without bacteriuria) [13]. Population. Healthy, premenopausal women. Pregnant women. Postmenopausal women aged 50–70 Diabetic patients. Women. Men. Elderly person in the community (≥70 yrs.). Screening for and treating ASBU patients should only occur if the bacteriuria has an associated adverse outcome (such as development of a symptomatic urinary tract infection, bacteremia, progression to chronic kidney disease, etc.) that can be prevented by antimicrobial therapy. Put another way episodes of acute cystitis occurring in healthy, premenopausal, nonpregnant women with no history suggestive of an urinary tract abnormalities are considered uncomplicated urinary tract infections and all other UTIs are classified as complicated. Women with bacteriuria, confirmed by a second urine culture, should be treated and have repeat urine cultures at each antenatal visit until delivery (SIGN 2012). Women who do not have bacteriuria in the first trimester should not have repeat urine cultures. Dipstick testing should not be used to screen for bacterial UTI at the first or subsequent antenatal visits (SIGN 2012). Healthcare Improvement Scotland, Scottish Intercollegiate Guidelines Network. Management of suspected bacterial urinary tract infection in adults: A National Clinical Guideline. Edinburgh: Scottish Intercollegiate Guidelines Network (SIGN); 2012. Meads C. Screening for asymptomatic bacteriuria in pregnancy: External review against programme appraisal criteria for the UK National Screening Committee (UK NSC). 8. During check-up the pregnant woman in the female consultation clinic, the doctor has found the uterus enlarged up to 5–6 weeks of pregnancy, asymmetric, in the left part of uterus the protrusion is palpated. The consistency of the uterus is soft, but at the time of inspection there is an increase of uterine tone. After the end of palpation uterus becomes soft again. What signs of pregnancy has found the doctor? 1. Piscatchecâ€™s and Snegirevâ€™s signs 2. Snegirevâ€™s and Gaussâ€™s signs 3. Piscatchecâ€™s and Gorvitsâ€™s signs 4. Genterâ€™s the I and Genterâ€™s the II signs 5. Genterâ€™s and Gaussâ€™s signs. 9.