

Prescription Pattern of Drugs used in Urinary Tract Infection in Reproductive Age Group Women

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ABSTRACT

Likely bacterial illnesses, infection of the Urinary tract (UTIs) are more likely in women who are fertile. An overview of UTIs is given in the introduction, with special attention to their relevance, symptoms, and the necessity of receiving the right care to prevent complications. It talks about the main antibiotic treatment strategy and emphasizes the significance of using antibiotics sensibly in order to avoid antibiotic resistance. It also discusses non-pharmacological management techniques and the possible application of herbal medicine for managing infections of the urinary tract. The epidemiology, pathophysiology, diagnosis, prescription patterns, adverse effects, non-pharmacological therapy, and future directions of infection of the Urinary tracts in women of reproductive age are described in the techniques section. The information-gathering sources-such as studies, clinical guidelines, and expert opinions-are covered in this section. A methodology for evaluating and compiling the information on UTIs in females that are able to procreate is given in the techniques section. The main conclusions regarding Infection of the Urinary tract (UTIs) in women who are in the age range of reproductive years. are shown in the results section. It covers the following topics: prescription patterns, side effects, pharmacological and non-pharmacological therapy tactics, diagnosis techniques, pathophysiology, common bacterial agents, risk factors, prevalence of UTIs, and possible future directions. An extensive review of current knowledge regarding UTIs in this population is given in this section. The abstract concludes by summarizing the key ideas covered in the sections on the introduction, methods, and results. It highlights the relevance of infection of the Urinary tract (UTIs) among females who are capable of bearing children, the efficacy of antibiotics as a treatment, the necessity of appropriate prescribing practices, and the possible use of herbal medicine as a supplemental or alternative treatment. The relevance of holistic methods to UTI prevention and treatment is emphasized in the conclusion, which also emphasizes the necessity for further investigation to fully understand the safety and efficacy of herbal therapy in UTI management.

Keywords: Prescription, Herbal medicine, Antibiotic resistance, Reproductive age women, Urinary tract infections

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INTRODUCTION

Females are especially prone to infection of the Urinary tracts, which are Ordinary bacterial illnesses that affect women in the reproductive age range.¹ Untreated infections can cause pain, suffering, and other issues, which highlights how crucial it is to get the right care. Since they successfully destroy the infection-causing bacteria, Antibiotics are the primary therapeutic approach for infections of the urinary tract.² For women of reproductive age, the treatment of infection of the Urinary tracts usually involves the prescription of many antibiotics. The drugs in concern are ciprofloxacin, nitrofurantoin, and trimethoprim /sulfamethoxazole. In addition to medications, medical professionals might advise analgesics and more water to reduce symptoms and get rid of the illness-causing bacteria.³ For many women who are fertile, infection of the Urinary tracts are a common and problematic issue.⁴ Appropriate prescription writing is crucial for effectively managing UTIs and preventing the development of antibiotic resistance.⁵ These trends guarantee that the correct antibiotics are given, for the right amount of time,

based on the patient's symptoms, medical history, and clinical test outcomes. By adhering to evidence-based standards and considering elements like antimicrobial stewardship and pharmacokinetic properties, healthcare professionals can improve patient outcomes and lower the risk of antibiotic resistance, undesirable side effects, and healthcare costs.⁶ Effective prescription procedures are essential for the management of Infections of the urinary tract. This is because that they promote the responsible use of these drugs, prevent the emergence of antibiotic resistance, enhance patient outcomes, reduce healthcare costs, and preserve the efficacy of antibiotics. Appropriate prescription writing is essential to the management of UTIs because it can help shield against the development of antibiotic resistance.⁷ Antibiotic resistance is a growing concern in the healthcare industry and may arise from improper antibiotic prescriptions for infection of the Urinary tracts. In order to reduce antibiotic resistance, protect medication efficacy, and promote appropriate antibiotic use, healthcare practitioners need to follow

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Table 1: Prescription pattern of drugs used in Urinary Tract Infection in Reproductive age group women^{23,24}

| Drug Name | Class | Dosage Form | Typical Dosage | Common Indications | Notable Effects | Side |
|-----------------------------------|--|-------------|--------------------|-------------------------------------|--|---------|
| Trimethoprim/ Sulfamethoxazole | Sulfonamide | Tablet | 160/800 mg BID | Acute uncomplicated cystitis | Rash, hyperkalemia, crystalluria | nausea, |
| Nitrofurantoin | Nitrofuran | Capsule | 100 mg BID | Acute uncomplicated cystitis | Nausea, headache, pulmonary toxicity | |
| Ciprofloxacin | Fluoroquinolone | Tablet | 250-500 mg BID | Complicated UTIs, pyelonephritis | Tendonitis, GI upset, CNS effects | |
| Fosfomycin | Phosphonic acid derivative | Powder | 3 g single dose | Uncomplicated cystitis | Diarrhea, headache, vaginitis | |
| Amoxicillin/ Clavulanate | Penicillin/ beta-lactamase inhibitor | Tablet | 500/125 mg TID | Complicated UTIs, pyelonephritis | Diarrhea, candidiasis | rash, |
| Cephalexin | Cephalosporin | Capsule | 500 mg QID | Uncomplicated UTIs | Diarrhea, nausea, hypersensitivity reactions | |

appropriate prescription patterns.⁸ It is imperative that medical professionals carefully consider whether an antibiotic prescription is appropriate for treating infection of the Urinary tracts (UTIs), considering factors such the particular drug, dosage, length of treatment, and indication.⁹

Epidemiology of UTIs in Reproductive Age Women

A prevalent health issue that frequently affects women in their reproductive years is infection of the Urinary tracts. This population has a notable incidence rate and a high prevalence of UTIs. A Foxman et al. study estimates that between 0.11 and 16 million instances of infection of the Urinary Tract (UTIs) occur annually in females in the United States who are of reproductive age. Because of a number of risk factors, infections of the Urinary tract (UTIs) are more likely in female who are fertile having a shorter urethral length, becoming pregnant, using specific forms of contraception (such as spermicides or diaphragms), and engaging in sexual activity are among the risk factors. The chance that bacteria will infiltrate the tract of urine and result in a contagion is heightened by these risk factors. Infection of Urinary tract (UTIs) has a important negative influence on women's general well-being during their reproductive years. Infection of the Urinary tracts (UTIs) can be extremely uncomfortable, upsetting, and interfere with daily activities. In addition, sexual function and interpersonal relationships may be negatively impacted by infection of the Urinary tracts (UTIs). Infection of the Urinary tracts (UTIs) causes considerable burdens for healthcare systems in addition to negatively affecting an individual's quality of life. Women of reproductive age who get infection of the Urinary tracts (UTIs) have a significant need for medical services, such as medical consultations, diagnostic testing, and prescription drug writing. Consequently, it is imperative to put preventative measures into place and educate females who are of reproductive age Regarding the risk variables and strategies to lessen their vulnerability to UTIs.¹⁰ The sources that are listed below offer a thorough analysis of the epidemiology of infection of the urinary tract in female who are of reproductive age. This includes information on the

occurrence and frequency rates of infection of the Urinary tracts (UTIs), in addition to the contributing variables to their development. The sources also examine the impact that UTIs have on the general health of those who contract them as well as the burden they place on healthcare systems. The bulk of newly reported cases of gonorrhoea that occur each year are linked to young people and adolescents. In postpubescent girls, gonococcal infections may not show any symptoms at all, which can cause delays in the disease's identification and treatment. The repercussions of untreated gonococcal infections in women-such as disseminated gonococcal infection and pelvic inflammatory disease-underline how critical prompt diagnosis and treatment are. Teenagers and young adults are more likely to get gonorrhoea because of things like having sex and not always wearing condoms. The sources that are supplied offer a thorough and in-depth analysis of the epidemiology of infection of the Urinary tracts (UTIs) amongst women who are sexually active. This includes information on the prevalence and incidence rates of infection of the Urinary tracts (UTIs), the potential risk factors for their development, and the effects these illnesses have on people's general health as well as the financial burden they have on the healthcare system. It is empty in the user's text. A powerful treatment for both acute and chronic infection of the Urinary tracts is herbal medicine.¹¹

Pathophysiology and etiology of UTIs

A common bacterial disease that affects several urinary tract components, including the urethra, is infection of the Urinary tract. The ureters, kidneys, and bladder are among the organs listed.¹² Infection of the Urinary tracts are mostly caused by bacteria that grow and settle in the urinary system (UTIs). Infection of the Urinary tracts (UTIs) are mostly caused by Escherichia coli, accounting for 80-90% of instances. Proteus mirabilis, Enterococcus species, Klebsiella pneumoniae, and Staphylococcus saprophyticus are additional bacteria that can result in 5UTIs.¹³ Infection of the Urinary tract's (UTIs') etiology might differ according on age, gender, comorbidities, and anomalies in the urinary system. Infection of the Urinary tracts in women

Table 2: Prescription Patterns and Observations^{25,26}

| Observation | Findings |
|--|--|
| Most Commonly Prescribed Antibiotic | Trimethoprim/ Sulfamethoxazole |
| Second Most Commonly Prescribed Antibiotic | Nitrofurantoin |
| Preferred Analgesic for Symptomatic Relief | Phenazopyridine |
| Commonly Recommended Non-Pharmacological Measure | Increased fluid intake |
| Notable Trends | Increasing awareness and use of non-antibiotic preventive measures |

Table 3: Concerns and Considerations²⁷

| Concern | Details | Recommendations |
|------------------------|---|--|
| Antibiotic Resistance | Overuse and misuse of antibiotics leading to resistance | Strict adherence to prescribing guidelines |
| Adverse Drug Reactions | Monitoring for side effects and patient education | Inform patients about possible side effects |
| Patient Adherence | Ensuring patients complete their antibiotic course | Follow-up consultations to reinforce adherence |
| Safe Use in Pregnancy | Consideration for pregnant women with UTIs | Use antibiotics that are safe during pregnancy |

are caused by the germs from the gastrointestinal system migrating upward due to the close anatomical proximity of the urethra and anus.¹⁴ Sexual activity is one factor that can make one greater susceptibility to infection of the Urinary tracts (UTIs), as it can transfer germs into the urethra and raise the risk of infection. By creating an environment that is conducive to bacterial development, urinary tract abnormalities such as vesicoureteral reflux, urinary stones, or urine retention may raise the risk of infection of the Urinary tracts.- Functional abnormalities: Pathological conditions that impair the bladder's ability to function normally, such as neurogenic bladder brought on by neurological diseases or spinal cord injuries, can result in stagnant urine and insufficient bladder evacuation, which upsurges the risk of infection of the Urinary tracts. There was no text provided by the user. Hormone fluctuations, like those that happen during menopause or pregnancy, can alter the pH balance and bacterial composition of the urinary system, which in terms increasing the risk of infection. The use of indwelling catheters, or catheterization, in patients in hospitals or individuals experiencing urine retention, raises the risk of infection of the Urinary tracts (UTIs) by introducing germs into the urinary system. Uncontrolled diabetes raises the danger of infection of the Urinary tracts

(UTIs) by weakening the immune system and reducing the body's capacity to fight infections.

Immunosuppression

Those with weakened immune systems, such as those receiving chemotherapy or living with HIV/AIDS, are more susceptible to the development of UTIs because of this.

Age- Due to underlying medical disorders, reduced immune systems, and slower bladder emptying, the elderly population is more susceptible to infection of the Urinary tracts (UTIs). Infection of the Urinary tracts (UTIs) are mostly caused by Escherichia coli, a bacteria that is commonly found in the gastrointestinal tract. Additional bacteria, such as Klebsiella, Proteus, and Staphylococcus, can also cause UTIs. The Bacteria can reach the urinary tract through a variety of channels, such as: it is difficult to overstate the significance of precise weather forecasts in the dynamic world of today. The main pathogen entry point is the ascending infection, which occurs when bacteria travel up from the urethra into the bladder and possibly the kidneys.¹⁵

Sexual activity

Engaging in sexual activity increases the risk of infection of the Urinary tracts (UTIs) in women by introducing bacteria into the urethra. Inadequate hygiene practices, such as inadequate wiping after a defecation or inadequate washing of the vaginal region, can cause infection of the Urinary tracts (UTIs) by introducing microorganisms into the urethra. Within the tags is the text.¹⁵

Diagnosis of UTIs in reproductive age women

During their reproductive years, women are susceptible to frequent bacterial disorders called infection of the Urinary tracts. Symptoms of a infection of the Urinary tract (UTI) in women who are fertile include increased frequency of urination, intense need to urinate, pain during urination, murky or foul-smelling urine, and discomfort in the pelvis. Urinalysis and urine culture are two methods that medical professionals can use to reliably diagnose infection of the Urinary tracts (UTIs) in women who are fertile. In addition, they must to review clinical guidelines and protocols, conduct a physical examination, and take into account the patient's medical history and symptoms. Infection of the Urinary tracts (UTIs) in women of reproductive age can be accurately detected by healthcare practitioners using a variety of approaches. Urinalysis and urine culture tests are performed as part of the diagnostic process. Additionally, the patient's medical history and symptoms are taken into account, a physical examination is performed, and clinical guidelines and protocols are consulted. There are two citations in the user's text.^{16,17}

Pharmacological management of UTIs

Urinary tract infections are a prevalent bacterial condition that can affect various regions of the urinary tract. Pharmacological intervention is an effective method for treating urinary tract infections and alleviating symptoms. The pharmacological management of UTIs involves the use of antibiotics with the explicit objective of targeting and eliminating the bacteria responsible for the infection. The provision of these antibiotics is contingent upon the successful identification of the specific bacteria that caused the infection and their susceptibility to specific

medications. The selection of antibiotics is determined by the severity of the infection and the individual's medical history. Furthermore, it is essential to take into account factors such as renal dosing and hepatic dosing when determining the appropriate dosage and route of administration for antibiotics. Pharmacological intervention aims to eliminate the pathogens that cause urinary tract infections (UTIs) while simultaneously preserving the patient's safety and minimizing adverse effects. The treatment of urinary tract infections (UTIs) involves the administration of medications that are designed to specifically target and eradicate the bacteria responsible for the infection. This method guarantees a treatment that is both safe and effective by taking into account factors such as renal dose and hepatic administration. The treatment of urinary tract infections (UTIs) involves the administration of medications that are designed to specifically target and eradicate the bacteria responsible for the infection. In order to guarantee a safe and effective treatment, this method takes into account factors such as renal dose and hepatic medication. The pharmaceutical management of urinary tract infections (UTIs) involves the prescription of medications that are specifically designed to eliminate the causative bacteria and effectively treat the infection. Antibiotics are selected by identifying the specific microorganisms responsible for the infection and assessing their susceptibility to various treatments. The pharmacological management of UTIs involves the selective targeting and elimination of the bacteria that cause the infection through the use of antibiotics.^{18,19}

Women of reproductive age and their prescription patterns

Examining prescription trends among women in their reproductive years is a crucial area of interest in healthcare. Analysing the prescription trends in this specific population may be able to identify obstacles to the best possible drug use and provide important data for treatments targeted at enhancing the results of reproductive health. Through the analysis of prescription medication trends among reproductively competent women, researchers and healthcare professionals can learn important lessons regarding potential drug usage and compliance issues. In order to guarantee that women of reproductive age obtain the proper medication for their health needs, this research can offer insightful information for the creation of focused educational and intervention programs. The overall reproductive health results of women of childbearing age are significantly impacted by the prescribing techniques used on them. By using this information, medical professionals can modify their prescribing practices to better suit the needs of women who are or will become reproductively active and ultimately enhance their reproductive health. Furthermore, It is imperative to consider the distinctive requirements and difficulties that women who are incarcerated face in relation to contraception and reproductive health. It is crucial to acknowledge and tackle the distinct obstacles that jailed women encounter when trying to obtain contraception and reproductive healthcare. These issues are made worse by the prison system's denial of reproductive rights and

inadequate healthcare, underscoring the need for better reproductive healthcare for women who are incarcerated. Prescription patterns in women of reproductive age are influenced by a number of factors, such as prior experiences, marital stability, and financial condition.^{20,7}

Adverse reactions and safety issues

Reviewing the side effects and safety concerns is essential when assessing the use of any medical procedure or treatment. Enhancing patient well-being and reducing damage requires these factors. There has been a significant amount of scholarly writing on the subject of bad pharmacological interactions, including studies, reviews, book chapters, and entire volumes, due to the significant and frequent medical implications of these interactions. Negative drug interactions are studied in great detail in medicine and are covered in a variety of publications, including books, reviews, and journal articles. Complete details about the dangers and safety issues related to medication interactions can be found in these sites. Healthcare providers must perform a thorough review of variables such drug interactions, patient characteristics, and dosage modifications before administering medications in order to minimize any possible adverse effects. The main objective of this chapter is to evaluate the safety issues of advanced clinical research. The majority of this chapter is devoted to the evaluation of safety during the final phases of clinical studies. In advanced clinical research, evaluating a drug's potential side effects before approving it for sale is a crucial part of the safety evaluation process.²¹

Prospects and difficulties

Subsequent studies ought to concentrate on creating increasingly complex prediction models that integrate cutting-edge technology such as artificial intelligence, as well as enhancing techniques for gathering and evaluating data. Examining the possibility of using herbal medicine in addition to or instead of antibiotics to treat infection of the Urinary tracts (UTIs) may yield important information about non-antibiotic treatments, promoting personalized and ecologically friendly medical procedures. By tackling these issues, UTI management and prevention will improve, eventually leading to better patient outcomes and public health.²²

CONCLUSIONS

Because they affect quality of life negatively, are common in women of reproductive age, and place a burden on healthcare systems, infection of the Urinary tracts are a noteworthy health issue. Effective treatment and management of UTIs requires accurate diagnosis, suitable use of antibiotics, and consideration of non-pharmacological methods. It is imperative to prescribe antibiotics in a responsible manner in order to stop the emergence of antibiotic resistance. Additionally, researching the potential of herbal medicine may provide important information about non-antibiotic alternative treatments, supporting individualized and environmentally friendly healthcare methods. Improving prediction models, refining data collection techniques, and investigating the efficacy and safety of herbal medicine in treating infection of the Urinary tracts (UTIs) should be the top priorities for

future research. By putting these policies into practice, public health will be improved and patient outcomes will rise.

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