

## Balancing Risks and Benefits of Antibiotic Therapy for Urinary Tract Infection (UTI) in Older Persons

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### DESCRIPTION

The safety of delaying or withholding antibiotic treatment for suspected Urinary Tract Infection (UTI) in older persons has been a topic of debate among medical professionals. In recent years, there has been increasing concern about the overuse of antibiotics and the development of antibiotic resistance. However, a recent study has found that delaying or withholding antibiotic treatment for UTI in older persons may increase the risk of adverse outcomes, including Blood Stream Infection (BSI).

The study, which was conducted using electronic health records, found that patients who received delayed or withheld antibiotic treatment had a twofold increased risk of developing BSI in the consultation that followed compared to those who received immediate treatment. This finding is significant because delaying or stopping antibiotics has also been linked to a statistically significant rise in antibiotic resistance. Therefore, it is important to establish the safety of delaying or withholding antibiotic treatment for UTI in older persons.

There is mixed evidence about the safety of postponing or stopping medication in older persons with suspected UTI. This is due to the frequency of asymptomatic bacteriuria in this population, their risk of antibiotic-related side effects, and the necessity for public health to combat antibiotic resistance. Additionally, it can be difficult to spot UTI instances, especially in older patients who frequently display unusual signs and symptoms of infection. The rising frequency of asymptomatic bacteriuria in older persons and the extensive use of urine dipstick testing in healthcare settings, despite its low positive predictive value, heighten the confusion around a diagnosis value for bacteriuria. Patients are also at disproportionate risk of toxicity from antibiotics, as well as complications such as *Clostridium difficile* infection, adding to the complexity of management decisions.

The study used electronic health records to investigate the safety of delaying or withholding antibiotic treatment for suspected UTI in older persons receiving primary care. The researchers obtained data from a group of consenting English patients and

practices, as well as information on hospital admissions, ER visits, and census data from the National Health Service (NHS).

Patients, who were hospitalized, were sent to a specialist, or passed away on the day infection began were not included in the study. If the patient's primary care visit was noted in the connected Hospital Episode Statistics (HES) record, the episode was disqualified.

The study conducted a variable analysis comparing patients who received rapid antibiotic therapy to those who did not. The difference between exposure groups was evaluated using Wilcoxon rank tests. For each therapy group, diagnostic data pertaining to the underlying aetiology of sepsis was collated. For secondary outcomes, the same strategy was employed. The follow-up washout intervals were limited to and only included the first UTI episode for each patient throughout the sensitivity analysis.

Propensity score analysis was used to examine the sensitivity to residual confounding. Multivariable logistic regression parametric or non-parametric was used to predict a patient's previous chance of receiving therapy, and four alternative adjusted findings were generated using each set of propensity scores using either matching or inverse probability weighting.

The study's findings have important implications for policy and clinical practice. They suggest that delaying or withholding antibiotic treatment for suspected UTI in older persons may increase the risk of adverse outcomes, including BSI.

This finding highlights the need for further research to establish the safety of delaying or withholding antibiotic treatment for suspected UTI in older persons. Additionally, it underscores the importance of prescribing antibiotics judiciously and only when they are necessary. In conclusion, a recent study conducted using electronic health records found that delaying or withholding antibiotic treatment for suspected UTI in older persons may increase the risk of adverse outcomes, including Blood Stream Infection (BSI). This is significant because delaying or stopping antibiotics has also been linked to a statistically significant rise in antibiotic resistance. The study's findings highlight the need for further research to establish the safety of delaying or withholding

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antibiotic treatment for suspected UTI in older persons. Additionally, it underscores the importance of prescribing antibiotics judiciously and only when they are necessary. Ultimately,

healthcare professionals should consider individual patient factors when making treatment decisions and balance the risks and benefits of antibiotic therapy for UTI in older persons.