Impact of pharmacist-led education of asymptomatic bacteriuria treatment in a community hospital

Amelia Gooch, PharmD Olathe Health, 20333 W 151st St, Olathe, KS 66106. Amelia.Gooch@olathehealth.org
Lance Pramann, PharmD; Kathryn Lincoln, PharmD, BCPS, BCIDP

The purpose of this project is to decrease the treatment of asymptomatic bacteriuria (ASB) in patients who are not pregnant or undergoing invasive urologic procedures.

The intervention was providing an educational handout to emergency department (ED) providers, hospitalists, and family/internal medicine providers to help differentiate between a urinary tract infection (UTI) and ASB. A retrospective chart review was conducted reviewing the results of the pre- and post-implementation data. The pre-implementation timeframe was from March 1, 2020 to April 30, 2020 and the post-implementation timeframe was December 1, 2020 to January 31, 2021. Patients were included if they were admitted to the hospital, received an antibiotic with the indication of UTI, and were 18 years of age or older. Exclusion criteria included patients with sepsis/septic shock, pyelonephritis, co-morbid infection, infectious disease or urology consult, pregnancy, on antibiotics for UTI at admission, and critical illness. The primary endpoint was incidence of ASB treatment with antibiotics based on pre-identified criteria set in the provider education handout. Secondary endpoints were days of antibiotic therapy in the ASB treated population; 30-day return rate (ED visit or hospital admission) with diagnosis of bacterial cystitis, pyelonephritis, or bacterial prostatitis; number of patients whose antibiotics were stopped early due to ASB diagnosis; and incidence of ASB treatment versus UA bacterial count. Significance level was set at $p < 0.05$. Student's t-test was used to assess continuous demographic variables. Chi-squared and Fisher's exact tests were used to assess nominal demographic variables and the primary and secondary endpoints.

There were a total of 345 patients in the pre-implementation timeframe and 333 in the post-implementation timeframe. Of these, 46 (14.4%) and 50 (16.4%) patients (p=0.53), respectively, were treated with antibiotics for ASB. Total days of therapy in patients receiving antibiotics for ASB was 5.6 ± 4.2 in the pre-implementation group and 6.5 ± 3.1 in the post-implementation group (p=0.15). There were 18 (39%) patients in the pre-implementation group whose antibiotics were stopped early due to ASB diagnosis and 14 (28%) in the post-implementation group (p=0.25). No patients in either group had a 30-day return for bacterial UTI. ASB was found to be treated more frequently in both groups whose urinalysis (UA) bacterial count was 4+.

Provider education did not change the rate of ASB treatment. Duration of antibiotic therapy in ASB-treated patients did not change pre- and post-implementation. Future directions could include creating stricter UA reflex culture criteria or having pharmacists perform 48-hour time outs for patients ordered antibiotics with the indication of UTI.

Learning Objectives

1. Describe the process of determining appropriateness of asymptomatic bacteriuria treatment
2. Explain the results of the intervention
3. Discuss how the results of this study will be used to improve patient care