Kentucky Antimicrobial Stewardship Innovation Consortium

Educational Pearl

Pre-op Pee, Let it Be

Preoperative asymptomatic bacteriuria (ASB) is a risk factor for postoperative complications including surgical site infections. Therefore, screening with urinalysis and urine culture has been a common practice for many surgeons, especially in orthopedics. Does identification and treatment of preoperative ASB improve outcomes?

What do the guidelines say?
The Infectious Diseases Society of America (IDSA) guidelines recommends AGAINST screening for and treating ASB in patients undergoing nonurological surgery.[1]

What is the evidence?
In one study, patients with preoperative ASB undergoing hip arthroplasty were randomized to treatment or non-treatment of preoperative ASB. No difference in prosthetic joint infection (PJI) within one year of surgery was detected. In patients that did develop prosthetic joint infection, no organisms cultured from the PJI matched the organisms from preoperative urine culture.[2]

In cohort study of patients undergoing total or hip arthroplasty with preoperative ASB, no difference in 1- year PJI rates were detected between patients who were treated and those that were not treated. No organisms isolated from a PJI matched the organisms from preoperative urine culture.[3]

What happens when screening for preoperative ASB is stopped?
A pre-post study of 2,754 patients undergoing orthopedic or spinal procedures evaluated the impact of institutional guidance to stop ordering preoperative urine cultures. This study found a 86.6% reduction of urine cultures from the 12 months prior (1141 urine cultures) to the 12 months post intervention (153 urine cultures). The surgical site infection (SSI) rate did not differ between pre (1.2%) and post groups (0.7%).[4]

In another pre-post study of 4,663 patients undergoing total joint arthroplasty or spinal fusion, preoperative urinalysis were reduced from 99% (499/502) in pre-intervention procedures to only 3% (126/4161) in pre-intervention procedures. Urine cultures were reduced from 18.7% (94/502) to 0.7% (31/4161). There were no differences in rates of catheter associated urinary tract infections and surgical site infections between the pre and post groups.[5]

Key Takeaways: Screening and treatment of preoperative ASB with urinalysis and/or urine culture does NOT reduce risk for surgical site infections in nonurological surgeries. Stopping preoperative screening for ASB reduces waste and is an important diagnostic stewardship opportunity.

References:

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