Medical microbiology - Choosing Wisely Canada

Five Things Physicians and Patients Should Question

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1

Don't collect urine specimens for culture from adults who lack symptoms localizing to the urinary tract or fever unless they are pregnant or undergoing genitourinary instrumentation where mucosal bleeding is expected.

Urine cultures are the most frequently ordered microbiologic test, with the majority of specimens submitted from asymptomatic patients. Urine cultures should only be ordered if patients have symptoms localizing to the urinary tract such as acute dysuria, urgency, frequency, suprapubic or flank pain or fever without an obvious alternate source. Outside of these specific symptoms, positive cultures indicate asymptomatic bacteriuria and frequently result in antimicrobial therapy that is of no benefit and is potentially harmful. Cloudy or malodorous urine are not specific findings of urinary tract infection and should not prompt culture unless acute urinary tract symptoms are present. Delirium is not considered a symptom of cystitis in non-catheterized patients. In catheterized patients with fever or delirium, a positive urine culture may still represent asymptomatic bacteriuria unless alternate sources have been excluded. Laboratories should consider supplementing educational efforts to reduce collection of urine cultures from asymptomatic patients with analytical interventions that reduce processing of low-value specimens.

2

Don't routinely collect or process specimens for *Clostridium difficile* testing when stool is non-liquid (i.e., does not take the shape of the specimen container) or when the patient has had a prior nucleic acid amplification test result within the past 7 days.

Only liquid stool specimens should be collected or processed for C. difficile detection, as a positive test in the absence of diarrhea likely represents C. difficile colonization. Diagnostic gains are minimal with repeat C. difficile nucleic acid amplification testing within 7 days of a negative test. Repeat C. difficile toxin testing

by enzyme immunoassay within 7 days of a prior negative test is also of little incremental diagnostic yield but may be warranted in select cases. Test of cure in patients with recent C. difficile infection is also not recommended. Prior investigations have shown that the use of hospital information systems to restrict ordering of repeat tests for these reasons resulted in a 91% reduction in repeat testing.

3

Don't obtain swabs from superficial ulcers for culture as they are prone to both false positive and false negative results with respect to the cause of the infection.

All wounds are colonized with microorganisms. Cultures should not be obtained from wounds that are not clinically infected (i.e., absence of classical signs of inflammation or purulence or increasing pain). For wounds that are clinically infected, the ideal specimens for culture are deep specimens that are obtained through biopsy or deep curettage following cleansing/debridement of the wound. Laboratories should consider use of screening criteria to reject such swabs without proceeding to culture. For superficial swab specimens that are processed/cultured, interpretation of the results should be correlated with the Gram stain.

4

Don't routinely order nucleic acid amplification testing on cerebrospinal fluid (e.g., herpes simplex virus, varicella zoster virus, enteroviruses) in patients without a compatible clinical syndrome.

Although nucleic acid amplification testing is the modality of choice for determining the viral etiology of meningitis/encephalitis, it should not be requested routinely on all cerebrospinal fluid specimens. The routine use of these tests in patients without compatible clinical syndromes can result in unnecessary empiric antiviral treatment, additional care, and prolonged length of hospitalization for patients awaiting testing results. Additionally, routine testing may result in depletion of cerebrospinal fluid needed for other diagnostic purposes. In cases where nucleic acid testing is requested for adults, laboratories should have policies for when testing will be performed if the cerebrospinal fluid cell count and protein are normal.

5

Don't routinely obtain swabs during surgical procedures when fluid and/or tissue samples can be collected.

Fluids and tissue specimens can usually be obtained in the controlled setting of the operating room and represent higher quality specimens than swabs. Culture of swab specimens is associated with increased false negative results, as they are inferior in recovering anaerobic bacteria, mycobacteria and fungi, and provide inadequate volumes to perform all necessary diagnostic tests. To encourage collection of fluid and/or tissue samples, consideration should be given to making swabs unavailable in the operating room without specific request.

How the list was created

A Choosing Wisely Canada top five list in medical microbiology was developed by the Association of Medical Microbiology and Infectious Diseases Canada (AMMI Canada) through broad consultation of its members. Following an electronic survey requesting members to identify low-value practices within microbiology, AMMI Canada convened a Working Group which developed a list of draft recommendations that were discussed and ranked during a national open forum using the modified Delphi method. The top five list was revised based on feedback received from AMMI Canada members through an online forum. The AMMI Canada Executive Council and Guidelines Committee endorsed the final list, which was disseminated online.

Sources

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