LABORATORY ALLIANCE of Central New York, LLC

New Reflex Test for the Laboratory Diagnosis of *Klebsiella oxytoca* as a Cause of Antibiotic-Associated Hemorrhagic Colitis

Effective September 19, 2011, the Microbiology department of Laboratory Alliance of Central New York will be offering a new service for the cultural recovery of *Klebsiella oxytoca* from stool specimens in patients who may have antibiotic-associated hemorrhagic colitis. This new cultural service will be performed routinely as a reflex test on all stool specimens that are negative for *Clostridium difficile* toxin B by the PCR assay but are positive for the presence of blood.

Clinical Significance

Colitis is a well-known complication of treatment with antimicrobial agents and, as such, is often called antibiotic-associated colitis. This disease along with antibiotic-associated diarrhea is generally thought to be caused by the overgrowth of toxin-producing strains of *C. difficile* (1). Antibiotic-associated hemorrhagic colitis (AAHC) is a distinct form of antibiotic-associated colitis in which *C. difficile* is absent but blood is present in the stool specimen (2). Antibiotic-associated hemorrhagic colitis has been reported most commonly in patients following treatment with the penicillin and cephalosporin classes of antibiotics but may also occur following therapy with quinolone antibiotics (3, 4). Unlike antibiotic-associated colitis caused by *C. difficile* which requires specific antimicrobial therapy, AAHC is thought to resolve spontaneously after cessation of antibiotic treatment (5, 6).

Until recently, the cause of AAHC was unknown. In 2006, however, *K. oxytoca* was established as a cause of AAHC following the fulfillment of Koch's postulates by showing that certain strains of *K. oxytoca* produce a cytotoxin that is responsible for causing some cases of AAHC (7). As a result, infection with *K. oxytoca* should be considered in patients with AAHC who are negative for *C. difficile*. Accordingly, all stool specimens that are **negative** for *C. difficile* toxin B but are **positive** for the presence of blood will be cultured for *K. oxytoca*. Stool specimens that are negative for *C. difficile* toxin B and negative for the presence of blood will not be cultured for *K. oxytoca.*

This policy was reviewed and approved by the infectious disease physicians at Crouse, Community-General, and St. Joseph's Hospitals. Please do not hesitate to contact Mr. Russell Rawling, Microbiology Manager at 315-410-7060, or Dr. Paul Granato, Director of Microbiology, at 315-464-7653, if you have any questions or concerns regarding this new service.

References

1. Bartlett, J.G. 2002. Antibiotic-associated diarrhea. N. Engl. J. Med. 346:334-339.

2. Beaugerie, L. et al. 2003. *Klebsiella oxytoca* as an agent of antibiotic-associated hemorrhagic colitis. Clin, Gastroenterol. Hepatol. 1:370-376.

3. Bellaiche, G. et al. 1997. Value of rectosigmoidoscopy with bacteriologic culture of colonic biopsies in the diagnosis of post-hemorrhagic colitis related to *Klebsiella oxytoca.* Gastroenterol. Clin. Biol. 21:764-767.

4. Koga, H. et al. 1999. Can guinolones cause hemorrhagic colitis of late onset? Report of three cases. Dis. Colon Rectum 42:1502-1504.

5. Toffler, R.B. et al. 1978. Acute colitis related to penicillin derivatives. Lancet 2:707-709.

6. Hogenauer, C. et al. 2006. *Klebsiella oxytoca* as a causative organism of antibiotic-associated hemorrhagic colitis. N. Engl. J. Med. 355:2418-2426.

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