Microsporidia by PCR

Indications for Ordering
Use to diagnose infection with microsporidia in immunocompromised patients with persistent diarrhea

Test Description
Qualitative polymerase chain reaction (PCR)
• Detects DNA of *Encephalitozoon* spp (*E. intestinalis/E. hellem/E. cuniculi*) and *Enterocytozoon bieneusi*

Tests to Consider
Primary tests
**Microsporidia by PCR 2011626**
• Preferred test to diagnose Microsporidia in immunocompromised patients with persistent diarrhea if *Encephalitozoon* spp (*E. intestinalis/E. hellem/E. cuniculi*) or *E. bieneusi* is the suspected infectious agent
• More sensitive than direct staining

**Microsporidia Stain by Modified Trichrome 0060050**
• Can be used for follow up of negative PCR result when suspicion of microsporidia infection remains high

Disease Overview
Incidence
• Enteric microsporidiosis in patients with HIV infection
  o ~15% prior to combination antiretroviral therapy (cART)
  o Rates are lower for patients on cART
• Undetermined incidence in non-HIV populations

Symptoms
• Persistent diarrhea
• Abdominal pain, nausea, vomiting

Diagnostic issues
• Microsporidia diagnosis may be difficult
  o Staining may aid in detection of microsporidia
    ▪ Historically underutilized and difficult to interpret
  o Treatment is available once diagnosis has been confirmed

Test Interpretation

Sensitivity/specificity
• Analytical sensitivity
  o *Encephalitozoon* spp (*E. intestinalis*) – 440 copies/100 µL stool
  o *E. bieneusi* – 1,600 copies/100 µL stool
• Analytical specificity – highly specific

Results
• Positive – result greater than the limit of detection
  o DNA of target organism was detected
• Negative – result lower than the limit of detection (with a positive internal control)
  o DNA of target organism was not detected

Limitations
• Presence of nucleic acid does not indicate presence of viable organisms
  o Results should be used in conjunction with appropriate clinical symptoms for diagnostic purposes
• Negative result does not rule out
  o Presence of PCR inhibitors in specimen
  o Assay-specific nucleic acid in concentrations below the level of detection
• Does not detect all possible pathogenic *Microsporidia* spp
• Limitations of PCR test should be considered during final diagnosis
• If test yields a negative result and suspicion of microsporidia infection is high, a modified trichrome stain should be considered