

CD Tip: Histoplasmosis

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Tip 1: Case Classification

Clinical Description

A case of acute histoplasmosis is defined as an influenza-like illness with two or more of the following symptoms: fever/chills, cough, chest pain, weakness, or myalgia/arthralgia. Note that while typically respiratory, histoplasmosis can present in other forms, including disseminated.

Laboratory Criteria for Diagnosis

Probable:

- Complement fixation titer to the yeast-phase antigen $\geq 1:32$ OR
- H band detected by Immunodiffusion testing OR
- Detection of antigen in body fluids (urine, serum, cerebral spinal fluid, and broncho-alveolar lavage fluid)

Confirmed:

- A four-fold rise in complement fixation titer between serum specimens collected 2-4 weeks apart OR
- Identification of the organism in tissues by histopathology OR
- Isolation of the organism from cultures

To consider a case acute, a patient must have both a clinically compatible illness and laboratory evidence of infection. Cases determined by the physician to be non-active Histoplasmosis should not be reported.

Tip 2: Laboratory Interpretation

Immunodiffusion (ID)

- The ID test measures antibodies to concentrated histoplasmin (antigenic filtrate of histoplasma culture). Labs may list H and/or M precipitin lines or bands.
- The H band indicates acute infection and is usually only present for 4-6 weeks after exposure
- The M band is more commonly detected and appears quickly, but may persist for 3 years after recovery
- Compared to Complement fixation, Immunodiffusion (ID) is more specific, but less sensitive. Therefore, an uninfected person is unlikely to have a positive ID result, but an acutely infected person may have a negative ID result.

Complement fixation (CF)

- The CF test measures antibodies to the intact yeast and the histoplasmin mycelial (mold) antigen.
- For the MDCH laboratory criteria, the CF titer to the yeast-phase antigen must be $\geq 1:32$.
- Complement fixing antibodies may appear 2 to 6 weeks following infection
- Antibodies will be positive for months but will gradually decline over time
- Examples of a four-fold rise in complement-fixation: 1:16 to 1:64

Histoplasma polysaccharide antigen (HPA)

- A radioimmunoassay method can be used to measure HPA levels in samples of body fluids.
- HPA is detected in body fluid samples of most patients with disseminated infection and in the urine and serum of 25% to 50% of those with less severe infections.

Tip 3: Outbreak Name

When the case is reviewed and confirmed by MDCH, 'SOM' (for State of Michigan) and the last two digits of the current year will be added to the outbreak identifier field, i.e. SOM11.

Tip 4: Occupation and Activities

Job and activities with increased risk for exposure include: Bridge worker, chimney cleaner, construction or demolition worker, farmer, gardener, heating and air-conditioning system service person, microbiology laboratorian, pest control worker, restorer of historic/abandoned buildings, roofer and cave explorer.