**New Algorithm for Detection of Intestinal Parasites**

The Methodist Microbiology laboratory is streamlining stool parasite testing with new assays and new testing algorithms. The *Giardia* and *Cryptosporidium* antigen ELISA was recently brought in-house, and is the preferred initial test for intestinal parasites in patients without a significant travel history. The two most common intestinal parasites in the US are *Giardia intestinalis* (formerly *G. lamblia*) and *Cryptosporidium* sp.

*Giardia* sp.: More than 2 million cases per year in the US. Spread is by contaminated water or food, or person-to-person. Major risk factors are daycare centers, camping (with ingestion of untreated water), travel to endemic areas, well water, men who have sex with men.

*Cryptosporidium* sp.: Causes self-limited watery diarrhea. Risk factors include exposure to daycare centers, contaminated recreational water sources, immune compromise.

**Other intestinal parasites:**

*Cyclospora* sp: Rare in the US, recent outbreaks have been associated with fresh produce. Requires special techniques to identify (Routine O&P, even with the Crypto/Cyclospora acid fast stain does not always detect the organisms). If prolonged diarrhea despite negative test for Crypto/Giardia, and/or diarrhea during a known outbreak, request "O&P Complete" with a comment to "Rule out Cyclospora".

*Enterobius vermicularis* (pinworm): Common in children, not generally detected by routine O&P. Scotch tape prep is the test of choice for pinworm.

*Intestinal helminths:* Uncommon in the US. "Request O&P Complete" if appropriate travel/exposure history.

*Entamoeba histolytica:* Uncommon in the US. Request "O&P Complete" if appropriate exposure/travel history.

*Tapeworms:* Suspected when patient passes tapeworm segments/proglottids. Request Parasite ID if suspected segment/proglottid is passed.

**Test Methods:**

*Giardia and Cryptosporidium Screen, Stool:* ELISA based test recently added to the menu of in-house testing. Highly sensitive and specific for the detection of Giardia and Cryptosporidium. **Test of choice for the two most common parasites in the US.**

*Ova and Parasite (O&P) Complete, Stool:* Traditional method for detection of stool parasites. Includes wet prep, concentration, trichrome stain, and Crypto/Cyclospora acid fast stain. This method is suitable for detection of many parasites, however this approach has several limitations:

1) Subjective because it is microscopy based
2) Sensitivity is limited by the technical ability of the technologist interpreting it
3) Less sensitive for *Giardia* and *Cryptosporidium*. Using O&P to rule out *Giardia* could require up to 7 stool specimens.

***This method will no longer be orderable through CPOE, although it will still be available by special request for patients with appropriate travel/exposure history. Please call the laboratory if a complete O&P is needed.***
Watery diarrhea in patients who:
- Involved with outbreak:
  - Daycare center
  - Municipal water supply
  - Have camping history
  - Have immune compromise

Diarrhea in patients who are:
- Residents or visitors of developing countries or other areas where helminth (worm) infections have been frequently reported

Cryto/Girdia Screen

- Positive:
- Negative w/continued diarrhea

Worms or Proglottids grossly present in stool

Parasite ID

O&P Complete (call lab to request)**
** If Cyclospora is suspected:
Specify to “Rule out Cyclospora”

No further testing needed unless clinical history indicates

Positive: O&P Complete (call lab to request)**
** If Cyclospora is suspected:
Specify to “Rule out Cyclospora”

References:
4. Pritt, B. Mayo Medical Laboratories Hot Topics- Detection of Intestinal Parasites. 

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