

Treatment Protocol for Rat Lungworm, *Angiostrongylus*

Updated January 10, 2020

Clinical Features

Headache	(most common)
Migratory nerve pain/Hyperesthesia	(most diagnostic)
Nausea, Vomiting and Abdominal Pain	(prominent in children)
Somnolence	(prominent in children)
Fever	(prominent in children)
Focal Paralysis	(rule out stroke)
Bowel and/or Bladder dysfunction	(rule out spinal cord ds)

Diagnosis Probability

- Any 2 clinical features = moderate
- Any 3 clinical features = high

Other Features

- Ingestion of snail/slug or contaminated food and water
- Headache atypical for patient/unexplained somnolence
- Severe sensitivity to touch and or burning migratory nerve pain
- Peripheral Eosinophilia = Absolute count > 700

Diagnosing Method

- **LP is the only way to definitively diagnose this disease.**
- CSF Eosinophils >10% on differential or >10/ml absolute count
- (Protein >80 or Glucose <60 is poor prognosis)

Disease Stratification/Treatment

Mild Disease: Symptoms, able to function, but no paralysis

Treatment: Dexamethasone 4mg twice each day x 2 weeks (or pediatric appropriate dose). Wean off over 2 weeks.

Moderate Disease: Symptoms, severe enough to interfere with normal activity/cannot work, but no paralysis

Treatment: Dexamethasone 6mg twice each day x 2 weeks (or pediatric appropriate dose). Wean off over 2 weeks. Albendazole 15mg/kg day divided bid to tid max 1200mg/day.

Severe Disease: Symptoms, plus paralysis or bladder and bowel dysfunction or CSF glucose <60 or Protein >80

Treatment: Hospitalization for high dose steroids and anthelmintic.

Post-Exposure Prophylaxis

Post-exposure prophylaxis may be given to any child or adult who has a verified ingestion of a snail or slug on the Big Island.

Advice that can be given by telephone if a call is received:

- Induce vomiting, if it is possible and safe.
- Go to nearest pharmacy and buy Pyrantel pamoate* over the counter. Read the instructions and warnings and administer per instructions if they choose. Time is important and the quicker the dose is administered, the better.
- Freeze the fragment of snail or slug and take to Dr. Sue Jarvi's lab at University of Hawaii at Hilo College of Pharmacy.**
- Seek care from their primary care provider within 3 days.
- Patients should, if possible, take a copy of the guidelines from Children's Health Queensland Hospital and Health Services: [Paediatric guideline: Snail and slug ingestion \(Prophylaxis against Angiostrongylus cantonensis infection\)](#), September 2019
 - If a child has been observed or is strongly suspected to have ingested part or all of a snail or slug, early treatment (ideally within 7 days of exposure, but not beyond 14 days of exposure) with:
 - Oral Albendazole 20 mg/kg (maximum 400 mg/dose) once daily for 7 days.
 - Infants and children older than 6 months of age only.
 - For ease of administration, round calculated dose to the nearest multiple of 100 mg.
 - Tablets can be taken whole, chewed or crushed.
 - Doses can/should be taken with food (increases systemic absorption).
- If the patient presents to the ED for post-exposure prophylaxis, treatment with albendazole*** per the protocol above should be offered.

** Pyrantel pamoate, according to an unpublished study by John Jacob, Ingo Lange, Ghee Tan and Susan Jarvi, "In vitro efficacy of anthelmintic drugs on Angiostrongylus cantonensis L3 larvae," has been shown to have excellent activity against ingested angiostrongylus larvae.*

*** Jarvi Lab: call 808. 932.7148. First time submitters of any sample should call first. An initial phone call also allows us to schedule workflow around incoming samples. Tracking numbers are appreciated.*

**** To be effective it must be taken while the larvae are still in the intestinal tract. Ideal within 4 hours, but no later than 12 hours. Albendazole treatment described above is still recommended.*