College of Registered Nurses of Saskatchewan

Pinworms: Adult & Pediatric

Gastrointestinal

Clinical Decision Tools for RNs with Additional Authorized Practice [RN(AAP)s]

Effective Date: June 9, 2022

Background

Pinworm infection is a parasitic infestation of the cecum of the large bowel. It is more common in children aged five to 14 years (Richardson, 2020). Humans are the only known host for this parasite (Richardson, 2020). The condition, caused by the obligate parasite *Enterobius vermicularis*, occurs following ingestion of eggs, which hatch in the stomach and migrate to the cecum (Richardson, 2020). The female adult worms migrate at night to the perianal region to deposit eggs. The ova mature after approximately six hours and the larvae are viable for about 20 days (Richardson, 2020).

Immediate Consultation Requirements

The RN(AAP) should seek immediate consultation from a physician/NP when any of the following circumstances exist:

- pregnancy, or
- infants < 12 months of age (Interprofessional Advisory Group [IPAG], personal communication, October 2, 2019).

Predisposing and Risk Factors

Predisposing and risk factors for pinworms include infection in household members (crowded housing) and institutionalized housing because the condition is highly communicable (Richardson, 2020). Autoinfection or reinfection is common, and infection occurs in all socioeconomic groups (Richardson, 2020). Risk factors for transmission include direct transfer of eggs from anus to mouth (e.g., carried under fingernails) and contact with fomites contaminated with eggs such as dust and bed clothes as eggs survive up to three weeks (Richardson, 2020).

Health History and Physical Exam

Subjective Findings

The circumstances of the presenting complaint should be determined. These include:

- anal itching, which is worse at night;
- irritability or impaired daytime concentration;
- restlessness during sleep; and
- perianal irritation/erythema from scratching (Richardson, 2020; Wendt et al., 2019).

Objective Findings

Generally, the client should appear well with a normal physical examination. Perianal irritation may be noted (Richardson, 2020). In cases of severe infestation, worm-like parasites may be visible on underwear, on the anal verve, or visibly expelled with the stool (Wendt et al., 2019).

Differential Diagnosis

The following should be considered as part of the differential diagnosis:

- hemorrhoids,
- tapeworms, or
- localized streptococcus dermatitis especially in children three to four years of age (Richardson, 2020).

Making the Diagnosis

Diagnosis is typically based on history and clinical findings. Observation of worms by the health care provider or caregiver may help confirm the diagnosis.

Investigations and Diagnostic Tests

Most individuals with pinworm infection do not observe visible pinworms as they are often not visible to the naked eye (Wendt, 2019). However, the RN(AAP) can advise the caregiver to look for a white, thread-like worm around the anus (evening or night) using a flashlight (Richardson, 2020). Since eggs are deposited on the anal folds, the cellophane (Scotch) tape test can be used to swab for typically non-visible eggs in this area (Richardson, 2020; Wendt, 2019). Also, for this reason, stool microscopy is not a helpful diagnostic tool (Wendt, 2019).

The cellophane (Scotch) tape test is performed as follows:

- Must be done in the morning before defecation and before washing the genital area.
- Press the adhesive side of the tape against the anal and perianal region several times consecutively with the buttocks spread.
- Affix the tape to a microscope slide, with the adhesive side of the tape down.

- The slides do not need to be stored, prepared, or preserved in any particular manner so they can be collected at home and brought to the clinic.
- Microscopic detection of eggs on the slide confirms infection.
- The test may need to be performed on three different days to increase its sensitivity for diagnosis (Wendt et al., 2019).

In females of child-bearing age, a pregnancy test should be completed, as drug therapy should be avoided in pregnancy (RxFiles Academic Detailing Program, 2021).

Management and Interventions

Goals of Treatment

The primary goals of immediate treatment are to eradicate the infection and prevent spread to others.

Non-Pharmacological Interventions

The RN(AAP) should recommend, as appropriate, the following non-pharmacological options when the diagnosis is confirmed:

- wash bedclothes, underwear, towels, and clothing in hot water daily;
- frequent handwashing;
- daily bathing; and
- vacuum house daily for several days to eliminate eggs (Burns, Dunn, Brady, Starr, & Blosser, 2017; Richardson, 2020).

Pharmacological Interventions

The pharmacological interventions recommended for the treatment of pinworms are in accordance with *Pediatric Primary Care* (Richardson, 2020) and *The Diagnosis and Treatment of Pinworm Infection* (Wendt et al., 2019).

Anthelmintic Agents

A single dose results in high cure rates. The second dose repeated at two weeks achieves a cure rate close to 100% and helps prevent recurrence due to reinfection. The whole family should be treated concurrently.

	Drug	Dose	Route	Frequency	Duration
Pediatric (≥ 2 years of age) and Adult (First Line)					
	Mebendazole	100 mg	p.o.	once, with a repeat dose in 2 weeks	2 weeks

	Drug	Dose	Route	Frequency	Duration
Pediatric (≥ 1 year of age) and Adult (Second Line)					
	Pyrantel pamoate	11 mg/kg/dose to a maximum of 1 g/dose)	p.o.	once, with a repeat dose in 2 weeks	2 weeks

Client and Caregiver Education

The RN(AAP) provides client and caregiver education as follows:

- Counsel about the appropriate use of medications (dose, frequency, compliance, side effects, etc.).
- Inform that reinfection is common, despite therapy but can be mitigated by keeping fingernails short, frequent handwashing, especially with toileting, washing bed clothes and underwear daily, daily baths, and discouraging both anal scratching and placing fingers in mouth.
- Advise that eggs are viable in the environment for several days.
- Advise that simultaneous treatment of the entire household is recommended (Burns et al., 2017; Richardson, 2020).

Monitoring and Follow-Up

The RN(AAP) should advise that symptoms should improve in several days and that recurrent infection, if it occurs, will require treatment.

Complications

Pinworm infection follows a harmless course in most cases, however, some complications may include:

- perianal excoriation or ulceration from scratching;
- anal dermatitis, perianal folliculitis, or ischiorectal abscess;
- vulvovaginitis;
- psychological distress;
- insomnia; or
- urinary tract infection (Wendt et al., 2019).

Referral

Refer to a physician/NP if client presentation is consistent with those identified in the *Immediate Consultation Requirements* section (IPAG, personal communication, October 2, 2019).

References

Burns, C., Dunn, A., Brady, M., Starr, N., & Blosser, C. (2017). *Pediatric primary care* (6thed.). Elsevier.

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Wendt, S., Trawinski, H., Schubert, S., Rodloff, A., Mössner, J., & Lübbert, C. (2019). *The diagnosis and treatment of pinworm infection*. Deutsches ÄrzteblattInternational, 116, 213–219. doi.org/10.3238/arztebl.2019.0213