College of Registered Nurses of Saskatchewan

Scabies: Adult & Pediatric

Skin and Integumentary

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

Effective Date: February 1, 2022

Background

Scabies, caused by Sarcoptes scabiei, is a highly contagious, pruritic, ectoparasitic infestation of the skin (Winland-Brown & Porter, 2019). Female mites burrow into the skin and lay their eggs, which forms a burrow that looks like a pencil mark (Winland-Brown & Porter, 2019). Eggs hatch in three to 10 days, mature on the skin and the cycle repeats (Winland-Brown & Porter, 2019). The itchy rash is an allergic response to the mite. Mites can survive outside the host 36 hours at room temperature and up to 17 days in cool humid conditions (Winland-Brown & Porter, 2019).

Classification

Scabies are classified as common, crusted, or nodular.

Common	Crusted	Nodular
• infestation which includes < 15 female mites.	• pruritus mild or absent, • lesions are on hands and feet with thick crust, • nail dystrophy and eruptions with erythematous scaling, • infestation of hundreds to millions of female mites, • occurs in immunocompromised clients, • very difficult to treat, • high mortality rate from secondary bacterial sepsis.	• persistent pruritic nodules; • usually in genitals, axilla, skin folds; • results from allergy to mites or their feces; • mites are absent in nodular lesions.

(Winland-Brown & Porter, 2019)

Immediate Consultation Requirements

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

- crusted scabies,
- infants less than two months of age,
- signs and symptoms of sepsis (e.g., fever, tachycardia, hypotension, tachypnea, altered mental status),
- severe secondary infection (Interprofessional Advisory Group [IPAG], personal communication, July 19, 2019).

Predisposing and Risk Factors

Predisposing and risk factors for scabies include:

- close physical contact with other people (e.g., daycare settings, nursing homes, and over-crowded homes);
- skin-to-skin contact with an infested person (e.g., holding hands, dancing, sharing a bed or clothing, sexual contact);
- poverty, poor hygiene, and malnutrition contribute to spread in communities;
- faulty application of treatment regimens, failure to treat close contacts, and failure to eradicate mites from clothing and bed linen can lead to persistent or recurrent infections (Thomas, Christenson, Walker, Baby, & Peterson, 2017; Winland-Brown & Porter, 2019).

Health History and Physical Exam

Subjective Findings

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

- severe itching, which is generally worse at night or after a hot shower (clients with their first exposure to scabies may not develop pruritis for four to eight weeks);
- a rash located on hands, feet, flexural folds (not always present), and umbilical area (Winland-Brown & Porter, 2019).

The RN(AAP) should enquire about:

- family and close contact with similar symptoms,
- recent treatment,
- prevalence of disease in the community (Winland-Brown & Porter, 2019).

Objective Findings

The signs and symptoms of common and nodular scabies may include:

- intense pruritus, with or without a rash, which usually affects finger web spaces, flexures of wrists and arms, axillae, belt line, lower folds of buttocks, genitalia, areola of nipples, and the abdomen;
- an atypical distribution may be seen in infants and elderly with involvement of the scalp, head, soles of feet, palms of hands, and a diffuse red rash;
- lesions in various stages present at the same time with primary lesions described as papules, vesicles, and burrows (rarely visible), and secondary lesions described as scabs, excoriations, pustules, bullae, crusts, and nodules;
- burrows (grey or flesh-colored ridges five to 15 millimetres long), which are typically seen on anterior wrist or hand and in interdigital web spaces (Winland-Brown & Porter, 2019).

The signs and symptoms of crusted scabies are:

- prominent hyperkeratotic scale and/or crust on hands, feet, and nails;
- localized or generalized distribution with head and neck involvement in adults (Centers for Disease Control and Prevention, 2020).

Differential Diagnosis

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

- pediculosis;
- impetigo;
- atopic dermatitis;
- irritant dermatitis;
- seborrheic dermatitis;
- folliculitis;
- psoriasis;
- tinea capitis, corporis, pedis, and cruris;
- lichen planus;
- bullous pemphigoid;
- pyoderma;
- pruritic urticarial papules and plaques of pregnancy;
- dermatitis herpetiformis;
- urticaria;
- acropustulosis of infancy; or
- insect bite (e.g., bed bugs, mosquito bites) (Winland-Brown & Porter, 2019).

Making the Diagnosis

The diagnosis is based on history and physical findings, including:

- diffuse itching, visible lesions in at least two locations, or household member with itch;
- clinically, if burrow found at the sites by burrow ink test or presence of mites or eggs with adhesive tape test (see below) (Winland-Brown & Porter, 2019).

Investigations and Diagnostic Tests

Burrow ink test

- gently rub scabietic papules with tip of fountain pen or felt-tip marker to cover with ink and then remove with alcohol wipe;
- positive test if ink tracks into and outlines burrow, forming dark zigzagged line;
- burrow ink test appears specific but not sensitive for scabies (Winland-Brown & Porter, 2019).

Adhesive tape test

- for scabies involves the use of transparent tape with a strong adhesive (e.g., clear packing tape). The tape is firmly applied directly to a skin lesion and then is rapidly pulled off. After applying the tape to a glass slide, the clinician utilizes a microscope to examine the tape for mites and eggs (Winland-Brown & Porter, 2019).

Management and Interventions

Goals of Treatment

The primary goals of immediate treatment are to eradicate infestation, prevent and/or treat secondary infection, and relieve pruritus (Winland-Brown & Porter, 2019).

Non-Pharmacological Interventions

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

- laundering all bed linen (sheets, pillow slips) and clothing worn next to the skin (e.g., underwear, T-shirts, socks, jeans, etc.) in hot soapy water and then dried with a hot drying cycle,
- placing linens in the freezer or outside if the temperature is lower than -20°C, or
- placing all bed linen and clothing into plastic bags and storing them for five to seven days as the parasite cannot survive more than four days without skin contact (Winland-Brown & Porter, 2019).

Pharmacological Interventions

The pharmacological interventions recommended for the treatment of scabies are in accordance with the *RxFiles Drug Comparison Charts* (RxFiles Academic Detailing Program, 2021), *Scabies Treatment in Children: A Narrative* (Kazeminejad, Hajheydari, & Ghahri, 2019), *Safety of Topical Medications for Scabies and Lice in Pregnancy* (Patel, Lambert, & Schwartz, 2016), and *Treating Scabies Infestations in Children and Adults* (Whybrew, 2017).

Scabicides

	Drug	Dose	Route	Frequency	Duration
Pediatric (≥ 2 months of age)					
	5% Permethrin cream or lotion	apply to entire body including head and face (avoiding eyes and mouth)	topical	apply day 1 to clean, dry skin for 8-14 hours then wash off and repeat in 7 days	n/a
OR	Crotamiton 10% cream or lotion	apply thin layer from neck to toes	topical	Apply daily for 3 days then rinse 48 hours after last application, repeat in 7 days if needed	n/a
Adult (safe in pregnancy and lactation)					
	5% Permethrin cream or lotion	apply to entire body from chin to toes (emphasize that scabicide must be applied in skin creases, between fingers and toes, beneath fingernails and toenails, between buttocks, under the breasts, and to external genitalia)	topical	apply day 1 to clean, dry skin for 8-14 hours then wash off and repeat in 7 days	n/a

	Drug	Dose	Route	Frequency	Duration
Adult (safety in pregnancy not established)					
OR	Crotamiton 10% cream or lotion	apply from the chin down	topical	apply day 1 and reapply 24 hours later; wash off the cream after 48 hours after application of the 2nd dose	n/a

Antipruritics

Pruritus associated with scabies can be managed with topical corticosteroids (e.g., hydrocortisone), second generation antihistamines (e.g., cetirizine, loratadine), and first generation antihistamines (e.g., DiphenhydrAMINE hydrochloride, hydrOXYzine).

Oral treatment using second generation antihistamines may be preferable as they are given once daily and do not cause drowsiness.

	Drug	Dose	Route	Frequency	Duration
	Pediatric and Adult				
	Hydrocortisone cream 0.5%	fingertip units based on surface area	topical	q.i.d. prn	as needed
Pediatric (≥ 6 months to ≤ 6 years of age)					
	Cetirizine	2.5 mg	p.o.	qhs	7 days
Pediatric (> 6 years of age)					
	Cetirizine	5-10 mg	p.o.	qhs	7 days
OR	Loratadine	10 mg	p.o	qhs	7 days

	Drug	Dose	Route	Frequency	Duration
Adult					
	Cetirizine	10 mg	p.o.	qhs	7 days
OR	Loratadine	10 mg	p.o.	qhs	7 days
Pediatric (≤ age of 2, consult physician/NP)					
Pediatric (> 2 to ≤ 6 years of age)					
	DiphenhydrAMINE hydrochloride	6.25 mg (maximum dose 25 mg/day)	p.o.	q4-6h prn	7 days
Pediatric (> 6 to ≤ 12 years of age)					
	DiphenhydrAMINE hydrochloride	12.5 mg (maximum dose 75 mg/day)	p.o.	q4-6h prn	7 days
Pediatric (≤ 12 years of age)					
Consult a physician/NP regarding the use of hydrOXYzine.					
Pediatric (> 12 years of age)					
	hydrOXYzine	10 mg	p.o.	qhs prn	7 days
Pediatric (> 12 years of age) and Adult					
	DiphenhydrAMINE hydrochloride	25-50 mg (maximum dose 150 mg/day)	p.o.	q4-6h prn	7 days
Adult					
	hydrOXYzine	10-25 mg	p.o.	b.i.d.	7 days
Note: In adults who are small, elderly, or taking anti-anxiety medication, start with 10 mg.					

Instruct client that itching, nodular skin lesions, and dermatitis may persist for weeks or months, even after successful treatment. For all ages, use liberal amounts of emollients, such as colloidal oatmeal or Aveeno Bath preparations, to relieve itching but only use after the topical scabicide treatment has been completed.

Client and Caregiver Education

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

- Counsel about the appropriate use of medications (dose, frequency, application, compliance, side effects, etc.) (Winland-Brown & Porter, 2019).
- Educate about transmission and prevention as follows:
  - direct (skin-to-skin) contact with another person who has scabies;
  - contact with contaminated articles such as clothing or bedding which has been used by a person with scabies in the previous 48 hours;
  - mites can survive outside the host 72 hours at room temperature (Centers for Disease Control and Prevention, 2020) and up to 17 days in cool humid conditions (Winland-Brown & Porter, 2019).
- Educate about the development and resolution of symptoms and advise that:
  - pruritus can begin within one to three days in those who have previously been infested; and may persist for weeks following successful treatment;
  - nodular lesions from scabies may persist for months following successful treatment; and
  - prophylactic therapy is essential for all household members, since signs of scabies may not appear for one to two months after the infection is acquired (Winland-Brown & Porter, 2019).
- Advise about the following:
  - all household members must be treated at the same time to prevent reinfection,
  - all household members require repeat treatment on day seven to kill larvae that have developed since the initial treatment,
  - topical treatment is usually effective within 12 hours (Kazeminejad et al., 2019; Whybrew, 2017).

Monitoring and Follow-Up

The RN(AAP) should:

- advise that follow-up in one week is recommended to assess response to treatment.
- advise the client to return immediately if signs of secondary infection develop.
- assess for treatment failure, which is likely if the itch persists at least six weeks after the first application of an insecticide (particularly if it persists at the same intensity or is increasing in intensity), the treatment was uncoordinated or not applied correctly and/or new burrows appear at any stage after the second application of an insecticide.

Complications

The following complications may be associated with scabies:

- secondary infection of scabies lesions, which are typically due to *Staphylococcus aureus*
- or Group A streptococcus;
- post-scabies pruritus that may last days to weeks;
- scarring and hyperpigmentation may occur; and/or
- psychological issues such as embarrassment, or delusion of parasitosis (Winland-Brown & Porter, 2019).

Referral

Refer to a physician/NP if client presentation is consistent with those identified in the *Immediate Consultation Requirements* section or if the client does not respond to treatment (IPAG, personal communication, July 19, 2019).

References

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