

DEFINITION

Impetigo vulgaris is a highly contagious, superficial bacterial infection of the skin.

Nonbullous impetigo

- Formation of vesiculopustules that ruptures, leading to crusting with a characteristic golden appearance; local lymphadenopathy may occur.

Bullous impetigo

- Staphylococcal impetigo that progresses rapidly to small to large flaccid bullae caused by epidermolytic toxin release. More prevalent in children.

IMMEDIATE CONSULTATION REQUIRED IN THE FOLLOWING SITUATIONS

- Wide spread disseminated lesions
- Toxic appearing child: Toxic appearing infants and children may be pale or cyanotic and are often lethargic or inconsolably irritable. In addition, they may have tachypnea and tachycardia with poor capillary refill.
- Immunocompromised client

CAUSES

- Nonbullous impetigo: Group A-hemolytic streptococci, *Staphylococcus aureus* (*S. aureus*) or both.
- Bullous impetigo: *S. aureus* is almost always the causative agent. The formation of bullae is mediated by the production of exfoliative toxins. The exfoliative toxins excreted by *S. aureus* produce a cleavage plane under the stratum corneum allowing the bacteria to proliferate and spread.

PREDISPOSING AND RISK FACTORS

- Impetigo is more prevalent in hot, humid weather when biting insects are present. The trauma caused from the bites, as well as scratching the bite marks favours bacterial growth on moist skin.
- There is increased incidence in lower socioeconomic groups because of several factors:
 - Overcrowding
 - Lack of ability to maintain good personal hygiene
 - A higher incidence of anemia and malnutrition
- Any pre-existing skin condition (e.g., atopic dermatitis) can become infected.

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HISTORY

- More common on face, scalp, and hands, but may occur anywhere
- Involved area is usually exposed
- Usually occurs during summer
- New lesions usually due to auto-inoculation
- Rash begins as red spots which may be itchy
- Lesions become small blisters and pustules which rupture and drain
- Discharge dries to form characteristic golden yellow crusts
- Lesions painless
- Fever and systemic symptoms rare
- Mild fever may be present in more generalized infections
- Other infected family member or contacts

PHYSICAL FINDINGS

- Thick, golden yellow, crusted lesion on a red base
- Numerous skin lesions at various stages present (vesicles, pustules, crusts, serous or pustular drainage, healing lesions)
- Bullae may be present
- Lesions and surrounding skin may feel warm to touch
- Regional lymph nodes may be enlarged, tender
- Fever (rare)

DIFFERENTIAL DIAGNOSIS

Nonbullous impetigo:

- Atopic dermatitis
- Candidiasis
- Scabies
- Pediculosis
- Tinea corporis
- Varicella
- Herpes simplex infection

Bullous impetigo:

- Thermal burn
- Bullous pemphigoid

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- Pemphigus vulgaris
- Stevens-Johnson syndrome
- Bullous erythema multiforme
- Necrotizing fasciitis

COMPLICATIONS

Nonhematogenous spread may result in:

- Cellulitis
- Lymphangitis
- Scarlet fever
- Acute post-streptococcal glomerulonephritis
- Exacerbation of guttate psoriasis

Hematogenous spread may result in:

- Osteomyelitis
- Septic arthritis
- Pneumonia
- Septicemia

INVESTIGATIONS AND DIAGNOSTIC TESTS

- Culture of the lesion, though not necessary in the majority of cases, can be obtained by swabbing the blister fluid or the skin beneath the lifted edge of a crusted plaque.
- Consider swabbing if methicillin-resistant *S. Aureus* (MRSA) is known in the community and the client has not been previously diagnosed, or if there is no response to initial treatment.
- Refer to *Northern Saskatchewan guidelines (2014) for skin and soft tissue infections including suspect MRSA in the community setting*. (Population Health Unit, Northern Saskatchewan, 2014) (Appendix attached).

MAKING THE DIAGNOSIS

Impetigo may itch, but generally there is little or no pain.

Constitutional symptoms such as fever are rare and if present may suggest systemic bacterial infection.

Local lymphadenopathy is seen in 90% of cases.

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- Nonbullous impetigo starts as a small, tender, erythematous papule. Often there is evidence of minor skin disruption by lesions such as an insect bite, eczema, or a mild abrasion. The papule then becomes “honey-crusted” with a serous discharge.
- Bullous impetigo appears on exposed and moist skin. It starts as a transparent bulla that ruptures easily, exposing moist erosion surrounded by a rim of scale.

MANAGEMENT AND INTERVENTIONS

Goals of Treatment

- Control infection
- Prevent auto-inoculation
- Prevent spread to other household members

Appropriate Consultation

- Treatment failure if diagnosis is in doubt

Non-Pharmacological Interventions

- Warm saline compresses to soften and soak away crusts qid and prn.
- Cleanse with an antiseptic antimicrobial agent to decrease bacterial growth.

Pharmacological Interventions

Topical treatment is as effective as treatment with oral antibiotics and is associated with less side effects.

However, topical antibiotics may be used with oral antibiotics for large areas of infection.

Apply topical antibiotic preparation to lesion and nares:

- Mupirocin 2% cream (Bactroban) tid for 5 days
- Fucidic Acid 2% cream bid for 5 days
- Polysporin Triple Therapy (polymixin b-bacitracin zinc-gramicidin) ointment tid for 7 days.
 - To be used for presumed or confirmed MRSA that is not improving with the

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other topical antibiotics.

Oral antibiotics may be necessary if there are multiple lesions that appear infected or during community outbreaks:

- Cephalexin (Keflex) 50-100 mg/kg/day orally divided q6h for 7 days (maximum dose 4 g/day)

For clients with allergy to penicillin:

- Erythromycin 30-40 mg/kg/day orally divided q6h for 7 days.
- Clindamycin 10-20 mg/kg/day orally divided q6h for 7 days.
- Sulfamethoxazole/Trimethoprim (SMX/TMP) 40-60 mg SMX/8-12 mg TMP per kg/day orally in 2 divided doses for 7 days.

MRSA

- Sulfamethoxazole/Trimethoprim (SMX/TMP) 40-60 mg SMX/8-12 mg TMP per kg/day orally in 2 divided doses for 7 days.

Selection of empiric oral therapy should be guided by local *S. aureus* susceptibility and modified base on results of culture and susceptibility testing. Refer to *Northern Saskatchewan guidelines (2014) for skin and soft tissue infections including suspect MRSA in the community setting*. (Population Health Unit, Northern Saskatchewan, 2014) (Appendix attached)

Client and Caregiver Education

- Counsel about the appropriate use of medications (including dose, frequency and compliance, etc.).
- Offer recommendations about proper hygiene, including single use of towels and washing clothes while acute infection is present.
- Counsel client/caregivers about the prevention of future episodes.
- Client and family/caregivers should be educated about the contagious nature of impetigo. Suggest strategies to prevent spread to other household members (e.g., proper handwashing, use of separate towels and other personal items such as razors, robes, etc.).

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Prevention

- Exclusion from school until 24 hours after treatment has been applied
- Cover open lesions until healed
- Handwashing with soap by all household residents

Monitoring and Follow-Up

- Follow-up in 3-5 days to assess response to treatment.
- Instruct parents or caregiver to bring the child back for reassessment if fever develops or infection spreads despite therapy.

Referral

- The client should be referred to a physician/RN(NP) if fever develops and/or infection spreads despite therapy.

DOCUMENTATION

- As per employer policy

REFERENCES

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Appendix

[MRSA Guidelines 2014](#)