Test Your Skills: Not-to-Miss Dermatologic Conditions in Children
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No Conflicts of Interest to Disclose

HANDOUT
• This will be a fun, interactive session to test your skills
• To make it more challenging I don’t want to “give away” the answers
• For those of you who like a handout, what follows is an alphabetic list of some of the conditions to be discussed with background information useful to clinical practice

Objectives
• Identify selected pediatric dermatologic conditions encountered in primary care settings
• Develop strategic approaches, including pharmacological treatments, for managing pediatric patients with these conditions
• Distinguish similar appearing rashes in children
Erythema multiforme (EM)

**Epidemiology:** Adolescent more common. But can be all ages.

**Prodrome:**
- Acute
- No prodromal symptoms
- May be preceded by herpes labialis (cold sore)

**Differential diagnosis:**
- Urticaria
- Stevens-Johnson
- Drug eruption

**Description:** Fixed symmetrical target/iris lesions erupting in crops over 5-7 days continuing for 2-4 wks. Center dusky red macules/papules that progresses to multiple concentric rings. Immune mediated hypersensitivity reaction. IF mucosal lesions (only 50% pts) usually only superficial oral. Fever(low), malaise, myalgia. **Non pruritic:** DOES NOT progress to Stevens-Johnson.

**Location:** palms/soles, hands/feet, extensor surface arms and legs, face, (trunk)

**Etiology:** Hypersensitivity reaction to infection. 80% HSV (herpes). UV light, trauma may bring it out.

**Treatment:**
- Discontinue trigger if possible/ treat infection
- Relief for oral lesions
- Pain control
- Oral antihistamines
- NO steroids
- If reoccurrence due to HSV – acyclovir

**Sequelae:**
- No scarring
- Benign, self limiting
- Reoccurrence- use sunscreen

**Erythema multiforme (EM)**

**Location Key**
- Hand, foot and mouth (coxsackie enterovirus)
- Scabies
- Secondary syphilis
- Rock mountain spotted fever
- Erythema multiforme
- Meningococcemia
Hemangioma

Description: Not present at birth up to first 4 weeks
- Explode in size at 4-8 weeks
- 80% of growth 4-6 mon
- Maximum size often in 1st 3 months. Most stop growing by 6-8 mon and full resolve by 4-5 yrs

Etiology: Might be caused by hypoxia to skin.
- Low birth weight
- Premature
- Twins

Treatment: Do nothing.
Unless:
- Ulcerated/bleeding, multiple, very large, problem location such as eye, ear, airway, lip, genitalia

Propranolol
- FDA approved oral solution for hemangioma Mar 2014
- Prescribed by specialists
- Not without risks
  - Hypotension
  - Hypoglycemia
  - Decreased heart rate
- Some centers hospitalize for first doses to monitor

Henoch-Schönlein Purpura

Description: Capillaries become inflamed and bleed (vasculitis).
Bleeding can occur in skin, joints, intestines or kidneys. Causing:
- Symmetrical, small palpable purpura or petechiae (hallmark of disease)
- Acute painful arthritis - 80% cases.
- May have GI (acute pain prior to rash) / hematuria
- May have renal involvement.

Duration: 3-4 weeks. Rash can come and go X 1 yr.
Location: Buttocks and extensor areas of legs most common for rash.
Ankles and knees for arthritis
Henoch-Schönlein Purpura

**Etiology:** unknown, insect bites, ? Immunologic response to different stimuli

**Season:** winter more common

**Epidemiology:** Typically 2-11 yrs. of age. Males slightly > females. Some familial connection

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Henoch-Schönlein Purpura

**Prodrome:** URI or other respiratory infection

**Differential diagnosis:**
- Post strep glomerulonephritis
- Hemolytic uremic syndrome (HUS)
- Lupus

**Treatment:**
- Bed rest
- +/- Hospitalization
- Multispecialty team
- Pain control / Steroids may help abdominal pain
- Monitor BP/kidney/GI blood loss

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Kawasaki Disease (KD)

**Description:** High prolonged fever, IRITABLE!! See diagnostic criteria. Rash often starts on trunk, accentuated in perineal area. Acute self limiting vasculitis.

**Etiology:** ??; Likely infectious cause/ trigger in susceptible patient causing uncontrolled immune response

**Season:** Winter / early spring

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Sequelae:
- Arthritis generally no sequelae
- Hypertension / renal disease if nephritis (kidney inflammation) (need close monitoring BP/UA X 1 yr. post disease)
- Can recur
Kawasaki Disease (KD)

**Epidemiology:**
- **Age:** 50% < 2 yrs
  80% < 4 yrs
- **Sex:** Males > females
- Community outbreaks, more common Asian/Pacific Island descent

**Diagnostic criteria:**
- **C**onjunctival injection – bilateral-no discharge
- **R**ash
- **A**denopathy – cervical lymphadenopathy
- **S**trawberry tongue-mucosal involvement
- **H**ands - extremity changes-swollen/peeling/erythema
  & **Burn** uncontrolled high fever > 5 days

**Clinical pearl:** suspect KD with high prolonged fever. Common to be misdiagnosed by multiple providers w/ diagnoses like strep throat or flu

**Treatment:**
- **Hospitalize**
- **IV** immune globulin
- **High** dose aspirin
- **Monitor** for cardiac complications

**Sequelae:**
- Leading cause of acquired heart disease
- Infants more likely than older kids to get coronary aneurysms
Measles

**Diagnostic Criteria- “C’S”:**
- Cough
- Coryza (runny nose)
- Conjunctivitis (exudative)
- Confluent rash
- Koplik’s spots
- Cranky

**Epidemiology:** Highly communicable. Unvaccinated
- Season: Late winter/Spring – in temperate areas
- Treatment:
  - No specific antiviral - maybe IV ribavirin for immunocompromised w/ severe dx
  - Isolation 4 days after onset rash
  - Prevention w/ vaccine best

Meningococcemia

**Description:** Dissemination of *Neisseria meningitides* into the blood stream. Palpable purpura-acral (peripheral parts: limbs, fingers, ears). Rash often late sign. Initially can be maculopapular rash indistinguishable from viral. Person to person contact w/ respiratory/saliva secretions. 5-10% of population carriers.

**Symptoms in infants nonspecific:**
- Fever
- Irritable (different than cranky)
- Poor feeding
- T sleeping, V< or ↓ activity
- Bulging fontanelle
- Inconsolable crying
- Seizure

**Etiology:** *Neisseria meningitides* commonly found in nasopharynx. Serotypes A, B,C, W-135, Y cause most invasive disease.

**Epidemiology:** Two peaks of incidence < 1 yr age; 15-19 yrs. Since 2005 800-1000 Us cases/year. 1000/100,000 Sub Sahara Africa.

**Season:** winter/early spring
Meningococcemia

**Differential diagnosis:** (palpable purpura)
- Septicemia (other organisms)
- Kawasaki disease
- Henoch-Schönlein purpura
- Gonococcemia

**Treatment:**
- Hospitalization/Isolation
- Culture
- Supportive care
- Empiric IV abx (pending culture)—ceftriaxone/cefotaximine

Sequelae:
- Fatal 10-15%, higher in adolescents, often within 48 hrs
- Hearing loss
- Amputations
- Neurological deficits

Scabies: The Rash that Itches”

**Description:** Vesiculopustular lesions (kids), linearity or S shaped lesions, nodules. Intense itching esp. night, excoriated from scratching. Can be on finger webs/palms.

**Etiology:** Mite sarcoptes scabiei (parasite)

**Epidemiology:** Very contagious. All age groups, but looks different in infants—often infants have MANY lesions.

**Differential:** “The great mimic”
- Eczema/contact dermatitis
- Popular urticaria

**Treatment:** Permethrin 5% (Elimite)
- apply head to toe, rub in, leave on 8-14 hrs, wash off.
- Reapply 1 wk if live mites appear
- > age 2 mon
- Need treatment for severe itching that can last several wks even if treatment successful
- Must treat whole household
- Wash/vacuum/hot dryer/dry clean EVERYTHING

**Clinical pearl:** “Who do they sleep with?”
Ink test to look for burrows
Stevens-Johnson Syndrome (SJS)/Toxic Epidermal Necrolysis (TEN)

**Description:** Necrotic skin and mucous membrane immune complex hypersensitivity disorder. Drug-disease entity. Differentiation of severity: < 10% Body surface area = SJS. > 30% Body surface area = TEN. (considered SJS/TEN if 10-30%). Can last 3-5 wks.

- Prodrome possible (1-7 days)
  - Fever
  - Sore throat
  - Malaise
  - Conjunctivitis (non exudative)

Skin changes (hours to days)
- Painful / non pruritic
  - Necrotic mucosal lesions
  - Targetoid (fixed/nonblanching)
  - Hemorrhagic
  - Core w/ vesicular/necrotic/purpuric may become bullous and rupture
  - Blisters→confluent→ lead to sloughing (epidermis separates from dermis)
  - Full thickness epidermal necrosis

**Location:** head, neck→ trunk & extremities. Extensive mucous membrane involvement (not just oral)

**Etiology:**
- Drugs 75%
  - Anti epileptics
  - Sulfonamides
  - NSAIDs
- Viral
- Mycoplasma pneumoniae
- Unknown
  Genetics w/ HLA alleles involved for some

**Epidemiology:** 1-2 cases / 1 million population/year; ↑ with TMP/SMX? . Male = female. In kids 2-10 yrs. Higher w/ HIV

**Differential:**
- Erythema multiforme (EM)
- Urticaria
- Staphylococcal scalded skin syndrome
- Kawasaki disease (KD)

**Treatment:**
- Stop drug (if known)
- Hospitalized/ Supportive care
- Possible burn center for wound care
- Multidisciplinary team
- Steroids +/- may increase sepsis and death
- +/- IVIG (intravenous immunoglobulin) to prevent cell death
Stevens-Johnson Syndrome (SJS)/Toxic Epidermal Necrolysis (TEN)

Sequelae:

- Mortality:
  - 10% SJS
  - 30% SJS/TEN overlap
  - 50% TEN

- Possible ocular damage including blindness
- Mouth lesions can spread to esophagus/airway – dehydration/airway compromise
- Possible urethral involvement
- Possible renal involvement

Conclusions:

- Close follow up
- Mild symptoms can become more severe
- Complete unclothed exam for every sick child

Resources

