Common Rashes and Skin Conditions Encountered in Family Practice

RINA CHABRA, DO
FACULTY UPMC MCKEESPORT FAMILY PRACTICE RESIDENCY
DIRECTOR OF OSTEOPATHIC EDUCATION
Case study 1

16 month old baby presents to clinic with an itchy rash that appears to be getting worse. He is otherwise healthy and acting well.
What is your diagnosis?

Atopic Dermatitis/Eczema
Atopic Dermatitis/Eczema

- Usually seen in adults and children in the creases of the elbows or knees
- Can also appear in the areas of neck wrists and ankles and/or creases of buttocks and legs
- The skin can appear thickened as well from scratching and rubbing
**Treatment**

- Hydration with cream or petroleum bases moisturizers
- Bathe less often with lukewarm water not to over dry the skin
- Use a less irritating soap
- Low potency corticosteroids for infants and small children for maintenance
- Older children and adults can use medium potency steroids trying to avoid the face
- For face can often use desonide ointment that can be prescribed for flare; after flare has resolved stop using steroid and use Vaseline
- For open areas Bactroban (Muciprocin) ointment 2x day until healed
- For severe cases triamcinolone 0.1% ointment can be used or short prednisone taper
- Can also use antihistamines for night time i.e. Benadryl for children and for adults Hydroxyzine or doxepin
Case study 2

18 year old college student presents to urgent care with low grade fever, fatigue and developed rash 2 days after fever
What is your diagnosis?

Varicella (Chicken Pox)
Varicella (Chicken Pox)

Acute infection caused by varicella-zoster virus

Incubation period is 14-16 days after exposure to varicella or herpes zoster rash

Fever occurs 1-2 days prior to appearance of rash particularly in adults

In children rash is often first sign of disease

Rash involves 3 or more successive crops over several days progress from macules to papules to vesicles, pustules and crust

Usually starts on face and trunk and then spreads to extremities
Most common complications are bacterial infection of skin and soft tissues in children

Pneumonia in adults

It is highly contagious and is spread by direct patient to patient contact and inhalation of respiratory droplets or inhalation of vesicular fluid

People are contagious from 1-2 days before rash or fever until lesions have crusted

Varicella in unvaccinated person is highly contagious in a person who received one dose of vaccine it is half as contagious
Can use Acyclovir for patients who are more likely to develop serious infection which includes:

- Otherwise healthy people older than age 12
- People with chronic skin or lung disease
- People receiving steroid therapy
- Pregnant patients
- Best if given within 24 hours after rash starts
- Otherwise treatment for low risk individuals is self limited mainly treating fever as needed or treating with oatmeal baths or calamine for itch
Prevention

- There are currently two vaccines available to prevent chicken pox those are Varivax and Proquad (which also includes MMR)
- The vaccine should be given to children 12-15 months old with second dose given at 4-6 years of age
- For adolescents and adults give 2 doses 4-8 weeks apart
- Definitely should vaccinate high risk people and those that are high risk for exposure and/or immunocompromised
- Post exposure vaccination, after exposure to varicella or herpes zoster, in people who don’t have immunity varicella vaccine should be given 3-5 days after exposure
Case 3

9 year old female with no significant past medical history aside from recent h/o strep throat requiring treatment with PCN and then Keflex. Presents 2 days after finishing Keflex with complaints of joint aches, fever, mild URI symptoms and the following rash.
What is your diagnosis?

- Erythema Multiforme
Erythema multiforme is a skin condition considered to be a hypersensitivity reaction to infections or drugs. It consists of a polymorphous eruption of macules, papules, and characteristic “target” lesions that are symmetrically distributed with a propensity for the distal extremities.

It typically doesn’t involve the mucosal surface.
Causes

- **Infections**
  - Herpes virus 1 and 2
  - Mycoplasma Pneumoniae
  - Fungal infections

- **Medications**
  - NSAIDs
  - Barbiturates
  - Penicillin
  - Sulfonamides
  - Phenothiazines
  - Hydantoins
Erythema multiforme usually occurs in adults 20 to 40 years of age although it can occur in patients of all ages.

Herpes simplex virus (HSV) is the most commonly identified etiology of this hypersensitivity reaction, accounting for more than 50 percent of cases. Mycoplasma pneumoniae is another commonly reported etiology, especially in children.
Symptoms /Treatment

- Erythema multiforme is a self-limited eruption that usually has mild or no prodromal symptoms

- Usually will present symmetrically on the distal extremities and progress proximally. Lesions on the dorsal surfaces of the hands and extensor aspects of the extremities are most characteristic. Palms and soles also may be involved.

- Treat underlying cause or take away the underlying drug.

- Can treat symptoms with Antihistamines and topical steroids.

- Oral steroids should be avoided and can make it worse.

- Some patients may have recurrences multiple times a year and can be treated with suppressive acyclovir.
Case 4

40 year old male went camping over labor day weekend 1 week later he felt achy and had a fever he presents to your office with this rash.
What is your diagnosis

Erythema Migrans
Lymes Disease

Can present with facial palsy in kids

Adapted from Red Book 2018-2021
Erythema Migrans

- Is a presentation of Lyme disease caused by Borrelia Burgdorferi which is transmitted to humans by an infected tick.
- 3-32 days after tick bite there is expansion of the lesion to create a target-like lesion.
- Many patients present with fever, headache, and fatigue.
- Rarely is pruritic or painful.
- Lesions fade in about 28 days.
# Treatment in Adults

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Drug</th>
<th>Dosage</th>
<th>Maximum</th>
<th>Duration, Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>Doxycycline</td>
<td>100 mg, twice per day orally</td>
<td>N/A</td>
<td>10-21*</td>
</tr>
<tr>
<td>Adults</td>
<td>Cefuroxime axetil</td>
<td>500 mg, twice per day orally</td>
<td>N/A</td>
<td>14-21</td>
</tr>
<tr>
<td>Adults</td>
<td>Amoxicillin</td>
<td>500 mg, three times per day orally</td>
<td>N/A</td>
<td>14-21</td>
</tr>
</tbody>
</table>
**Erythema migrans (single or multiple) (any age)**

<table>
<thead>
<tr>
<th>Treatment Options</th>
<th>Dosage Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doxycycline, 4.4 mg/kg per day, orally, divided into 2 doses (maximum 200 mg/day) for 10 days</td>
<td><strong>OR</strong> Amoxicillin, 50 mg/kg per day, orally, divided into 3 doses (maximum 1.5 g/day) for 14 days</td>
</tr>
<tr>
<td><strong>OR</strong> Cefuroxime, 30 mg/kg per day, orally, in 2 divided doses (maximum 1000 mg/day or 1 g/day) for 14 days</td>
<td><strong>OR</strong> for a patient unable to take a beta-lactam or doxycycline, Azithromycin, 10 mg/kg/day, orally, once daily for 7 days</td>
</tr>
</tbody>
</table>
Prevention

- Avoid direct contact with ticks by avoiding wooded and brushy areas
- Use repellent that contains 20 percent or more DEET
- Use products that contain permethrin and treat clothing
- Bathe or shower right after wooded area exposure and look for ticks on body
- If you find a tick try to remove full body with tick remover or see health care provider
Case 5

A 10 year female who has been at camp and swimming presents with the following rash that is itchy at times.
What is your diagnosis

- Molluscum Contagiosum
Molluscum Contagiosum

- Affects young children, sexually active adults and immunosuppressed individuals
- This is caused by the pox virus
- The lesions, known as Mollusca, are small, raised, and usually white, pink, or flesh-colored with a dimple or pit in the center. They often have a pearly appearance. They’re usually smooth and firm
- Takes about 6-12 months to resolve and can leave scarring from being itchy
- The lesions can appear anywhere on the body
Transmission

- The virus that causes molluscum spreads from direct person-to-person physical contact and through contaminated fomites (towels, clothing, toys, sponges and pool equipment).
- It can spread by scratching a lesion and then touching another area of the body.
- In adults or sexually active young adults it can spread through sexual contact if in the genitals.
Risk Factors

- Most commonly seen in children ages 1-10
- People with weakened immune systems (i.e., HIV-infected persons or persons being treated for cancer) are at higher risk for getting molluscum contagiosum. Their growths may look different, be larger, and be more difficult to treat.
- Atopic dermatitis may also be a risk factor for getting molluscum contagiosum due to frequent breaks in the skin.
- People who live in warm, humid climates where living conditions are crowded
Treatment

- In young immunocompetent children- usually spontaneous resolution
- Curettage and/or cryotherapy
- Topical therapy include podophyllum cream (toxic in pregnant women), tretinoin, iodine and salicylic acid, potassium hydroxide, cantharidin (a blistering agent usually applied in an office setting), and imiquimod (T cell modifier)
- Other options if continues to spread is oral cimetidine 40 mg/kg/day for two months but there are more studies that need done to prove efficacy
Case 6

18 month old toddler who attends daycare presents with 2 day history of fever, malaise, fussiness and poor feeding. The toddler has developed this rash.
What is your diagnosis?

- Coxsackies virus (Hand – Foot and mouth disease)
Coxsackies Virus – signs and symptoms

- Hand, foot, and mouth disease is a common viral illness that usually affects infants and children younger than 5 years old. However, it can sometimes occur in older children and adults.

- Children usually present with decreased appetite due to sore throat, fever, and malaise.

- Usually the fever proceeds the rash and 1-2 days after fever, mouth sores may develop and then lesions on hands and feet and arms may appear as sores and then blister.

- Rare complications can be meningitis or encephalitis.
Transmission

- The viruses that cause hand, foot, and mouth disease can be found in an infected person’s:
  - nose and throat secretions (such as saliva, sputum, or nasal mucus),
  - blister fluid, and
  - feces (stool).

- An infected person may spread the viruses that cause hand, foot, and mouth disease to another person through:
  - close personal contact,
  - the air (through coughing or sneezing),
  - contact with feces,
  - contact with contaminated objects and surfaces.
Prevention/Treatment

- Hand washing
- Avoiding close contact with someone who has hand foot and mouth disease
- Supportive treatment with fluids, rest and taking acetaminophen or ibuprofen to help with fever and pain (avoid Aspirin in children)
- Illness usually lasts 7-10 days the first 3 days being the worst
Case 7

21 year old male presents with this rash on his abdomen and trunk. It was preceded by URI symptoms.
What is the diagnosis

Pityriasis Rosea
Pityriasis Rosea

- Acute exanthem of uncertain etiology
- Viral and bacterial etiology have been studied but no convincing evidence for correlation to rash
- Typically affects children and young adults with peak in person ages 20-29
- Characterized by herald rash and then develops into a papulosquamous rash
- Often follows Langer’s lines (cleavage lines)
- Lesions are salmon colored ovoid, raised and have a scaly appearance
- If it presents on hands and soles of feet need to consider possibility of syphilis
Differential Diagnosis

<table>
<thead>
<tr>
<th>Condition</th>
<th>Distinguishing characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lichen planus</td>
<td>1- to 10-mm, sharply defined, flat-topped violaceous papules typically on wrists, lumbar region, shins, scalp, groin, and mouth; lesions may be asymptomatic</td>
</tr>
<tr>
<td>Nummular eczema</td>
<td>Grouped small vesicles and papules 4 to 5 mm in diameter; round or coin-shaped lesions with an erythematos base and distinct borders, often on shins and backs of hands; pruritus is often intense</td>
</tr>
<tr>
<td>Pityriasis lichenoides chronic</td>
<td>Red-brown papules with central mica-like scales randomly arranged on trunk and proximal extremities with chronic, relapsing course; hypo- or hyperpigmentation may be present after lesions resolve</td>
</tr>
<tr>
<td>Pityriasis rosea--like eruption associated with medications</td>
<td>Similar presentation to pityriasis rosea, but lesions resolve after causative medication is discontinued (Table 2)</td>
</tr>
<tr>
<td>Seborrheic dermatitis</td>
<td>Orange-red or gray-white skin with greasy or white dry scaling macules, papules, or patches; diffuse scalp involvement with marked scaling; worsens in winter because of dry conditions; pruritus increases with perspiration</td>
</tr>
<tr>
<td>Secondary syphilis</td>
<td>0.5- to 1-cm, pink to brownish-red, round to oval macules and papules on the trunk, palms, and soles; patchy, “moth-eaten” alopecia on the scalp and beard area; mucous membrane involvement with round or oval patches covered by hyperkeratotic white to gray membrane</td>
</tr>
<tr>
<td>Tinea corporis</td>
<td>Scaling, sharply margined plaques of various sizes with or without pustules or vesicles along the margins; lesions present with peripheral enlargement and central clearing, producing an annular configuration with concentric rings or arcuate lesions</td>
</tr>
<tr>
<td>Viral exanthems</td>
<td>Diffuse maculopapular erythema, mucosal involvement with microulcerative lesions, palatal petechiae, or conjunctivitis; systemic findings of lymphadenopathy, hepatomegaly, and splenomegaly</td>
</tr>
</tbody>
</table>

Information from references 1, 3, and 7.
Treatment

- Usually self limited
- If symptomatic topical steroids and antihistamines can be used
- For severe cases antivirals have showed to be a option to help with resolution
- The rash can last 6-8 weeks
Case 8

A 9 month old baby comes to your clinic for 4 days history of fever to 103, runny nose and loose stools. The fever has resolved but he has developed this rash.
What is the diagnosis?

Roseola Infantum (6th disease)
Clinical Features

- Illness of young children that peaks between the ages of 7-13 months
- 90 percent of cases are seen in children less than age 2
- Begins usually with 3-5 days of fever that resolves and then rash develops
- Most of the cases are caused by human herpesvirus 6 (HHV-6)
- Some children may present with URI symptoms, loose stools, adenopathy, irritability and anorexia
- Self limiting rash can last 3-4 days
Differential diagnosis of Roseola

Important not to miss these diagnosis always ask about immunization history

RUBELLA

The distribution is similar to that of measles (rubeola), though the lesions are less intensely red.
Differential diagnosis

Important not to miss these diagnoses always ask about immunization history

RUBEOLA (Measles)

Blanching erythematous macules with some confluent areas on the trunk in a patient with measles.
always look in mouth as well for koplik spots
Differential diagnosis (continued)

- A child with the characteristic malar ("slapped cheek") rash associated with parvovirus B19 (erythema infectiosum, fifth disease).

Courtesy of Moise L Levy, MD.
Drug-induced exanthems, such as this morbilliform eruption, often begin in dependent areas and generalize. 

Courtesy of Andrew Samel, MD
Differential continued

- Scarletina or scarlet fever
- Seen in children with strep
- Fine sandpaper like rash
- May develop confluent petechiae in the antecubital fossae (Pastia lines).
Case #9

A 26-year-old female presents with a skin rash and chronic diarrhea. She reports being previously diagnosed with eczema, and while the rash has responded well to topical corticosteroids it flares when they are stopped. The skin rash is very itchy and appears as mildly erythematous papules and vesicles clustered on the elbows and knees, as well as the posterior neck and scalp.
What is your diagnosis?

- Dermatitis Herpetiformis
Dermatitis herpetiformis is an extraintestinal manifestation that is pathognomonic for celiac disease. Because the rash is an immunologic response to gluten, it is sometimes referred to as celiac disease of the skin. It is a papulovesicular rash that is extremely pruritic and found on extensor surfaces, such as the elbows, knees, buttocks, and scalp. It occurs in about 25% of patients with celiac disease and is more common in men than women. Diagnosis confirmed by skin biopsy. About 80% of those with dermatitis herpetiformis show histopathologic changes of celiac disease on small intestinal biopsy, but only 20% of these patients initially have symptoms of celiac disease. Skin contact with gluten does not produce this rash; only ingested gluten does so. Dapsone may help manage the rash, but it will not prevent intestinal injury.
Few high yield slides from previous in training exams

Actinic Keratosis (precancerous lesion)

Treatment:
- Cryosurgery
- Curretage
- Fluorouracil
- Imiquimod
High yield continued

Seborrheic keratosis

Treatment: Cryosurgery, curettage, electrodesiccation, laser ablation, shave excision
High yield images

Pyogenic granuloma

Treatment:
Electrodesiccation
Laser ablation
Bowen’s disease which is early form of squamous cell cancer

Treatment:
Cryotherapy
curettage with cautery excision,
5FU
Radiotherapy
laser therapy
Squamous cell cancer seen most likely on sun exposed area like ears and lips

Treatment: Surgical excision, including Mohs micrographic surgery, is recommended as first-line treatment for most squamous cell carcinoma.\textsuperscript{28} Electrodessication and curettage or cryotherapy may be considered for smaller, low-risk lesions
High yield images

Basal Cell carcinoma
Treatment is excision but if in high risk area its Moh’s
High yield images

Melanoma - Surgical excision, Moh's/radiation
In-training Exam Questions
A previously healthy 29 year old pediatric nurse has a 3 days h/o malaise, arthralgia and a non pruritic rash. The rash is a faint maculopapular, irregular, reticulate exanthema that covers her thighs and the inner aspects of her upper arms. Symmetric synovitis is present in several distal and proximal interphalangeal joints and MCP joints. Small effusions and warmth and tenderness are noted in her left wrist and elbow. No other joints are affected.

Most likely cause of this problem is:

A) Varicella- zoster virus
B) measles (rubeola) virus
C) Parvovirus B19
D) Adenovirus
E) HIV
While percussing the chest of a 38-year-old male during his annual health maintenance examination, you notice the lesion shown on the following page on the upper left side of his back. The lesion is approximately 1.2 cm across the long axis. Which one of the following would be the most appropriate initial intervention?

A) A superficial shave biopsy
B) A punch biopsy of the peripheral margin
C) A punch biopsy at the center of the lesion
D) An excisional biopsy with a 1- to 3-mm border around the lesion
E) Wide excision with a 2-cm border around the lesion
2-year-old male has a 3-day history of a runny nose and cough, and a 2-day history of fever reaching 40.0°C (104.0°F). He woke up with a rash this morning. His appetite is good and his activity level is normal. On examination the child is afebrile with normal vital signs, and has a fine, maculopapular, erythematous rash on the trunk and extremities. The remainder of the examination is normal. Which one of the following is the most likely cause of this patient’s rash?

- A) Atopic dermatitis
- B) Erythema infectiosum
- C) Molluscum contagiosum
- D) Pityriasis rosea
- E) Roseola infantum
A 15-year-old female comes to your office for treatment of acne vulgaris. Her complete history and physical examination are unremarkable other than a moderate amount of closed comedones and inflamed papules on her nose, forehead, and upper back. She has not previously tried any topical or oral therapies, including over-the-counter medications. Which one of the following would be indicated for this patient as monotherapy?

- A) Topical benzoyl peroxide
- B) Topical clindamycin (Cleocin T)
- C) Oral isotretinoin (Absorica)
- D) Oral minocycline (Minocin)
- E) Oral spironolactone (Aldactone)
The rash associated with erythema infectiosum (fifth disease) is characterized by which one of the following?

- A) Small red papules with central umbilication
- B) Annular patches with raised borders and central clearing
- C) Pink pustules that form a thick yellow crust
- D) An erythematous “slapped cheek” facial rash
- E) A symmetrical rash in a Christmas tree pattern
A 56-year-old male presents to your office with the rash shown on the following page. It started under his left arm 2 days ago and has spread slightly. It is itchy and burns a little. He has been treating it with cortisone 1% cream twice daily with some relief. He has no significant past medical history. Which one of the following would be the most appropriate treatment?

A) Topical clobetasol  
B) Topical mupirocin (Bactroban)  
C) Oral cephalexin (Keflex)  
D) Oral prednisone  
E) Valacyclovir (Valtrex)
A 2-year-old female is brought to your office because of a round lesion on her lip that appeared 2 days ago. Her temperature and all vital signs are normal. She has no past medical history and takes no medications. Further history reveals that she was playing with a toy trumpet in a busy store a few days before the lesion appeared. A physical examination reveals a 1-cm round lesion with crusting, and no other skin abnormalities. Which one of the following would be the best treatment at this time?

A) Bacitracin  
B) Mupirocin (Bactroban)  
C) Neomycin  
D) Cephalexin (Keflex)  
E) Clindamycin (Cleocin)
A 50-year-old male presents to your office with a 4-day history of the rash shown on the page at right. It spread from the lower trunk to the lower extremities, including the genital area. He also complains of pain and swelling of the testes. He considers himself to be in good health and takes no medications. He is afebrile with a normal examination except for the pink-purple maculopapular eruption and bilateral swollen testes. A CBC, urinalysis, and comprehensive metabolic panel are normal.

Which one of the following is the most likely diagnosis?

A) Henoch-Schönlein purpura
B) Kawasaki disease
C) Polyarteritis nodosa
D) Rocky Mountain spotted fever
E) Thrombocytopenic purpura
An 18-year-old female presents with an intensely pruritic papular eruption in the vicinity of her waist that began shortly after she spent a day walking in the woods with her boyfriend. Her rash consists of multiple small excoriated papules and welts along her beltline. She says she was wearing jeans and sandals. Which one of the following is the most likely cause of her rash?

A) Bedbugs
B) Chiggers
C) Fleas
D) Deer ticks
E) Mosquitoes
A 29-year-old male presents with a 3-week history of multiple small, brownish-red macules in his left inguinal fold that are now coalescing into larger macules. The rash does not itch, and he has not used any new bath or laundry products. Wood’s lamp illumination of the area reveals a reddish fluorescence. Which one of the following topical treatments would be most appropriate for this patient’s rash?

- A) Erythromycin
- B) Hydrocortisone
- C) Nystatin
- D) Selenium sulfide
- E) Zinc oxide
A 69-year-old female presents with scaling, redness, and irritation under her breasts for the past several months. She has tried several over-the-counter antifungal creams without any improvement. On examination you note erythematous, well demarcated patches with some scale under both breasts. You examine the rash with a Wood’s lamp to confirm your suspected diagnosis. This rash is most likely to fluoresce

- A) bright yellow
- B) coral pink
- C) lime green
- D) pale blue
- E) totally white
An intertriginous rash of brownish-red macules that often coalesce is characteristic of a bacterial infection caused by Corynebacterium minutissimum known as cutaneous erythrasma. Coral-red fluorescence under a Wood’s lamp confirms the diagnosis. The best treatment for erythrasma is oral or topical erythromycin, with the oral form being most effective. Topical clindamycin and antibacterial soaps may also be of some benefit.
Images of erythrasma
For the past 2 weeks a 16-year-old female has had an eruption on one breast, shown below. She reports being troubled by the appearance of the lesions. Of the following, the most appropriate management of this condition is to:

A) curette each lesion to remove the top
B) apply a corticosteroid ointment locally twice daily for 10 days
C) advise the patient that the lesions will disappear in 2 weeks without treatment
D) prescribe penicillin, once daily for 10 days
E) order a serologic test for syphilis and treat if positive
A 32-year-old male with type 1 diabetes mellitus presents to your office with a tender, scaly lesion on his anterior left shin. It is a 5-cm reddish-brown plaque with well-defined borders and what appears to be yellowish deposits in the center.

You perform a punch biopsy of the lesion to confirm your diagnosis of

- A) granuloma annulare
- B) necrobiosis
- C) sarcoidosis
- D) xanthoma
A 52-year-old male presents for evaluation of a long-standing facial rash. He reports that the rash is itchy, with flaking and scaling around his mustache and nasolabial folds.

Which one of the following is most likely to be beneficial?

- A) Topical antibacterial agents
- B) Topical antifungal agents
- C) Topical vitamin D analogues
- D) Oral zinc supplementation
A 7-year-old female is brought to your office by her mother for follow-up of an urgent care visit. The child has a 5-day history of abdominal pain and low-grade fevers to 100.1°F. Her mother took her to an urgent care clinic last night when the patient developed the rash shown on previous slide. The rash is not pruritic or painful. She does not have any sick contacts, urinary symptoms, or changes in bowel habits. A physical examination is normal except for the rash and minimal diffuse abdominal tenderness. A CBC and basic metabolic panel are normal and a urinalysis is notable only for microhematuria (30–40 RBCs/hpf) and mild proteinuria (30 mg/dL)

In addition to close follow-up, which one of the following is the next appropriate step in the management of this child?

A) Supportive care only
B) Amoxicillin for 10 days
C) Prednisone tapered over 10 days
D) A biopsy of a skin lesion
E) Referral to a nephrologist for consideration of a renal biopsy
References

- CDC.gov
- AAFP.com
- Dermatology association
- Dermnet.org
- Red Book
Thank you- Questions?

"I knew it was a rash decision, but I went with it anyway."