Psoriasis

Basic Dermatology Curriculum

Last updated February 2015
Module Instructions

- The following module contains a number of blue, underlined terms which are hyperlinked to the dermatology glossary, an illustrated interactive guide to clinical dermatology and dermatopathology.
- We encourage the learner to read all the hyperlinked information.
The purpose of this module is to help learners develop a clinical approach to the evaluation and initial management of patients presenting with psoriasis.

By completing this module, the learner will be able to:

- Identify and describe the morphology of psoriasis
- Describe associated triggers or risk factors for psoriasis
- Describe the clinical features of psoriatic arthritis
- List the basic principles of treatment for psoriasis
- Discuss the emotional and psychosocial impact of psoriasis on patients
- Determine when to refer a patient with psoriasis to a dermatologist
Psoriasis is a chronic immune-mediated disease with predominantly skin and joint manifestations. Affects approximately 2% of the U.S. population. Age of onset occurs in two peaks: ages 20-30 and ages 50-60, but can be seen at any age. There is a strong genetic component. About 30% of patients with psoriasis have a first-degree relative with the disease. Psoriasis waxes and wanes during a patient’s lifetime, is often modified by treatment initiation and cessation and has few spontaneous remissions.
Classification is based on morphology

- **Plaque**: scaly, erythematous patches, papules, and plaques
- **Inverse/Flexural**: erythematous patches located in the skin folds
- **Guttate**: presents with dew drop like lesions, 1-10 mm salmon-pink papules with a fine scale
- **Erythrodermic**: generalized erythema covering nearly the entire body surface area with varying degrees of scaling
Pustular: clinically apparent pustules. Includes:
  • Rare, generalized variety called “von Zumbusch variant”
  • Palmoplantar, which is localized involving palms and soles

Clinical findings in patients frequently overlap in more than one category

Different types of psoriasis may require different treatment
What Type of Psoriasis?

A

B

C

D

American Academy of Dermatology
Guttate Psoriasis

- Acute onset of raindrop-sized lesions on the trunk and extremities
- Often preceded by streptococcal pharyngitis
Another Example of Guttate Psoriasis
Inverse/Flexural Psoriasis

- Erythematous plaques in the axilla, groin, inframammary region, and other skin folds
- May lack scale due to moistness of area
- Often symmetric
More Examples of Inverse Psoriasis
Pustular Psoriasis

- Characterized by psoriatic lesions with pustules
- Often triggered by corticosteroid withdrawal
- When generalized, pustular psoriasis can be life-threatening
- These patients should be hospitalized and a dermatologist consulted
Pustular Psoriasis
Palmoplantar Psoriasis

- May occur as either plaque type or pustular type
- Often very functionally disabling for the patient
- The skin lesions of reactive arthritis typically occur on the palms and soles and are indistinguishable from this form of psoriasis
Psoriatic Erythroderma

- Involves almost the entire skin surface; skin is bright red
- Associated with fever, chills, and malaise
- Like generalized pustular psoriasis, hospitalization is sometimes required

See the module on Erythroderma for more information
Case One

Ms. Sonya Hagerty
Case One: History

- **HPI**: Ms. Hagerty is an 18-year-old healthy female with a new diagnosis of psoriasis. She reports lesions localized to her knees with no other affected areas. She has not tried any therapy.
- **PMH**: no major illnesses or hospitalizations
- **Medications**: occasional multivitamin
- **Allergies**: none
- **Family history**: no chronic skin conditions
- **Social history**: lives with her parents. Senior in high school.
- **Health-related behaviors**: no tobacco, alcohol, or drug use
- **ROS**: slight pruritus
How would you describe her skin exam?
Case One, Question 1

- Well-demarcated, erythematous plaques with overlying silvery scale on the extensor surface of the knees.
Plaque Psoriasis

- Well-demarcated erythematous plaques with overlying silvery scale
- Chronic plaque psoriasis is typically symmetric and bilateral
- Plaques may exhibit:
  - Auspitz sign (bleeding after removal of scale)
  - Koebner phenomenon (lesions induced by trauma)
More Examples of Plaque Psoriasis
Plaque Psoriasis: The Basics

- **Plaque psoriasis** is the most common form, affecting 80-90% of patients.
- Approximately 80% of patients with plaque psoriasis have mild to moderate disease – localized or scattered lesions covering less than 5% of the body surface area (BSA).
- 20% have moderate to severe disease affecting more than 5% of the BSA or affecting crucial body areas such as the hands, feet, face, scalp, or genitals.
Psoriasis: Pathogenesis

- Complex genetic disease with many environmental factors
- Hyperproliferative state resulting in thick skin and excess scale
- Skin proliferation is caused by cytokines released by immune cells
- Systemic treatments of psoriasis target these cytokines and immune cells
Back to Case One

Ms. Hagerty, an 18-year-old healthy woman with localized plaque type psoriasis.
Which of the following would you recommend to start treatment for Ms. Hagerty’s psoriasis?

a. Biologic
b. High potency topical steroid
c. Low potency topical steroid
d. Systemic steroids
e. Topical antifungal
Case One, Question 2

**Answer: b**

Which of the following would you recommend to start treatment for Ms. Hagerty’s psoriasis?

a. Biologic

b. High potency topical steroid

c. Low potency topical steroid

d. Systemic steroids

e. Topical antifungal
Psoriasis: Treatment

- Since the psoriasis is localized (less than 5% body surface area), topical treatment is appropriate.
- First line agents: high potency topical steroid. May be used in combination or in rotation with a topical vitamin D analog.
- Other topical options: tazarotene, tar, calcineurin inhibitors.
Topical Corticosteroids

- High efficacy and safety
- Use can be intermittent and long-term
- Also used adjunctively in patients treated with UV light or systemic medications
- Vehicle types are numerous (ointments, creams, solutions, gels, foams, tape, sprays, shampoos, oils, lotions)
Patients using topical corticosteroids should receive regular examinations as unsupervised use of potent topical medications is not recommended.

Local cutaneous side effects include:
- Skin atrophy
- Telangiectasia
- Striae distensae
- Acne
- Folliculitis
- Purpura

See module on dermatologic therapies for more information on topical corticosteroids.
Treatment Question

Which treatment regimen would you prescribe this patient?

a. Clobetasol 0.05% ointment BID
b. Desonide 0.05% ointment BID
c. Fluocinonide 0.05% ointment BID
d. OTC Hydrocortisone 1%
Which treatment regimen would you prescribe this patient?

- a. Clobetasol 0.05% ointment BID
- b. **Desonide 0.05% ointment BID**
- c. Fluocinonide 0.05% ointment BID
- d. OTC Hydrocortisone 1%

Greater caution regarding potency is needed when treating thin sites (face, neck and skin folds). For skin folds, use a low potency topical steroid. For longer-term use, recommend a steroid-sparing agent.
## Topical Treatment

<table>
<thead>
<tr>
<th>Medication</th>
<th>Uses in Psoriasis</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topical steroids</td>
<td>All types of psoriasis</td>
<td>Skin atrophy, hypopigmentation, striae</td>
</tr>
<tr>
<td>Calcipotriene (Vitamin D derivative)</td>
<td>Use in combination or rotation with topical steroids for added benefit</td>
<td>Skin irritation, photosensitivity (but no contraindication with UVB phototherapy)</td>
</tr>
<tr>
<td>Tazarotene (Topical retinoid)</td>
<td>Plaque-type psoriasis. Best when used with topical corticosteroids.</td>
<td>Skin irritation, photosensitivity</td>
</tr>
<tr>
<td>Coal tar</td>
<td>Plaque-type psoriasis</td>
<td>Skin irritation, odor, staining of clothes</td>
</tr>
<tr>
<td>Calcineurin inhibitors</td>
<td>Off-label use for facial and intertriginous psoriasis</td>
<td>Skin burning and itching</td>
</tr>
</tbody>
</table>
For trunk and extremities:

- Clear with high-potency topical corticosteroid (e.g., clobetasol, halobetasol) x 2-4 weeks, then taper
- Maintenance therapy with topical Vitamin D analog (e.g., calcipotriene, calcitriol) 5 days per week with topical steroid on the weekends
- For very thick plaques, consider topical tazarotene
Example Treatment Regimens

For face and body folds:

• Lower potency topical steroid (e.g., desonide, hydrocortisone butyrate)

• Topical calcineurin inhibitors are helpful in inverse and genital psoriasis

• Thin coat of an emollient may be beneficial as friction and irritation may play a role in this subtype of psoriasis
Psoriasis: Treatment

Factors that influence type of treatment:

- Age
- Type of psoriasis
- Distribution
- Extent of psoriasis
- Previous treatment
- Other medical conditions
Psoriasis: Treatment

- Patients with localized plaque psoriasis can be managed by a primary care provider
- Psoriasis of all other types should be evaluated by a dermatologist
Case Two

Mrs. Rhonda Gilson
Case Two: History

- HPI: Mrs. Gilson is a 54-year-old woman who presents with a history of severe plaque-type psoriasis x 30 years.
- She has only ever been treated with topical agents.
- She has a history of obesity, hypertension, and moderate alcohol use.
- She has pain and stiffness in some of her joints.
- She reports her psoriasis has a severe impact on her quality of life.
- She wants to know about her treatment options.
Case Two: Skin Exam

Her skin exam reveals multiple well-demarcated, erythematous plaques with overlying thick silvery scale on the trunk, extremities, hands and feet. Total BSA affected is > 30%.
Case Two, Question 1

What elements in the medical history are relevant to psoriasis?

a. Health related behaviors
b. Hypertension
c. Joint pain
d. Obesity
e. All of the above
Case Two, Question 1

**Answer: e**

What elements in the medical history are relevant to psoriasis?

a. Health related behaviors
b. Hypertension
c. Joint pain
d. Obesity
e. All of the above
Ask About Cardiovascular Comorbidities

- Cardiovascular risk factors are more prevalent in patients with moderate-severe psoriasis.
- Patients with psoriasis may have an increased risk for cardiovascular disease and should be encouraged to address their modifiable cardiovascular risk factors.
- There is a positive correlation between increased BMI and both prevalence and severity of psoriasis.
Up to 30% of psoriasis patients have psoriatic arthritis, which can lead to joint destruction.
Ask About Health-Related Behaviors

- Studies have revealed smoking as a risk factor for psoriasis.
- Alcohol consumption is more prevalent in patients with psoriasis and it may increase the severity of psoriasis.
Psoriasis and QOL

- Psoriasis is a lifelong disease and can affect all aspects of a patient’s quality of life (QOL), even in patients with limited skin involvement.
- Remember to address both the physical and psychosocial aspects of psoriasis.
- Many patients with psoriasis:
  - Feel socially stigmatized
  - Have high stress levels
  - Are physically limited by their disease
  - Have higher incidences of depression and alcoholism
  - Struggle with their employment status
Mrs. Gilson is a 54-year-old woman with severe psoriasis.
Case Two: History Continued

- PMH: obesity and hypertension
- Medications: topical clobetasol 0.05% ointment
- Allergies: none
- Family history: no chronic skin conditions
- Social history: lives with her husband, works as an administrative assistant
- Health-related behaviors: no tobacco or drug use, consumes 1-2 glasses of wine daily
Systemic Treatment

- In moderate to severe disease, systemic treatment can be considered and should be supplemented with topical treatment.
- Many patients with moderate to severe psoriasis are only given topical therapy and experience little treatment success:
  - Undertreating the patient can lead to a loss of hope regarding their disease.
- Oral steroids should never be used in psoriasis as they can severely flare psoriasis upon discontinuation.
Systemic Treatment

1. Phototherapy: narrow-band ultraviolet B light (nbUVB), broad-band ultraviolet B light (bbUVB), or psoralen plus ultraviolet A light (PUVA)

2. Traditional/new oral medications: methotrexate, acitretin, cyclosporin, apremilast

3. Biologic Agents: TNF-α inhibitors (etanercept, adalumimab, infliximab), IL 12/23 blocker (ustekinumab), IL-17 blocker (secukinumab)
Systemic Treatment

- The choice of systemic therapy depends on multiple factors:
  - Convenience
  - Side effect risk profile
  - Presence or absence of psoriatic arthritis
  - Comorbidities

- Systemic treatment for psoriasis should be given only after consultation with a dermatologist
Phototherapy

- Safe, effective, and cost-effective
- Up to 20-25 treatments given 2 to 3 times per week is usually required for significant improvement
- Nb-UVB treatments may occur in some dermatology offices or at home
- Other forms of UV exposure, including sun exposure, may be beneficial in select patients
- Caveat: patients with thick plaques like our patient often won’t respond well to Nb-UVB
Traditional Agents

- “Specialty” drugs for psoriasis
  - Methotrexate
  - Cyclosporine
  - Acitretin

- Requires careful considerations of patient medical history, severity/type of psoriasis, and previous treatment

- Requires close monitoring of blood work and side effects by an experienced prescriber
Biologics

- Used to treat psoriasis and psoriatic arthritis
- Infliximab, etanercept, adalumimab, ustekinumab, secukinumab
- Requires careful considerations of patient medical history, severity/type of psoriasis, and previous treatment
- Requires close monitoring for infection and other side effects
The Patient’s Experience

- Successful treatment regimen includes patient education as well as provider awareness of the patient’s experience
  - Find out the patients’ views about their disease
  - Ask the patient how psoriasis affects their daily living
  - Ask about symptoms such as pain, itching, burning, and dry skin
  - Ask patients about their experience with previous treatments
  - Important to ask patients about their hopes and expectations for treatment
  - Provide time for patients to ask questions
Case Three

Mr. Bruce Laney
Case Three: History

- **HPI:** Mr. Laney is a 68-year-old man with a history of psoriasis who presents with increased joint pain and joint changes. He currently uses a topical steroid to treat his psoriasis.
- **PMH:** psoriasis x 40 years, hypertension x 20 years
- **Medications:** topical clobetasol for psoriasis, hydrochlorothiazide for blood pressure
- **Allergies:** none
- **Family history:** mother and father both had psoriasis
- **Social history:** lives with his wife, retired
- **ROS:** mild pruritus. Painful joints of hands and feet.
Case Three: Skin Exam

Erythematous plaques with overlying silvery scale on the anterior and post-auricular scalp and external auditory meatus. Also with nail pitting.
Case Three: Exam Continued

- Edematous foot
- Dactylitis (sausage digit) of the 2\textsuperscript{nd} digit, and interphalangeal joint destruction
- Onychodystrophy: nail pitting and onycholysis
Mr. Laney has psoriasis, nail changes, dactylitis with joint destruction. What is the most likely diagnosis?

a. Osteoarthritis
b. Psoriatic arthritis
c. Reactive arthritis
d. Rheumatoid arthritis
Case Three, Question 1

Answer: b

Mr. Laney has psoriasis, nail changes, dactylitis with joint destruction. What is the most likely diagnosis?

a. Osteoarthritis
b. Psoriatic arthritis
c. Reactive arthritis
d. Rheumatoid arthritis
Psoriatic Arthritis (PsA)

- Arthritis in the presence of psoriasis
- Member of the seronegative spondyloarthropathies
- ~30% percent of patients with psoriasis
- Can occur at any age, but most commonly appears between the ages of 30 and 50 years
- Symptoms can range from mild to severe
Psoriatic Arthritis (PsA)

- Characterized by stiffness, pain, swelling and tenderness of the joints and surrounding ligaments and tendons (dactylitis, enthesitis)
  - Classically worse after inactivity, then better with movement
- Severity of skin disease and arthritis may not correlate
- Flares and remissions usually characterize the course of psoriatic arthritis
More Examples of PsA

Desquamation of the overlying skin as well as joint swelling and deformity (arthritis mutilans) of both feet

Swelling of the PIP joints of the 2-4th digits, DIP involvement of the 2nd digit
Psoriatic Onychodystrophy

- Nail psoriasis can occur in all psoriasis subtypes
- Fingernails are involved in ~ 50% of all patients with psoriasis
- Toenails in 35%
- Nail disease is commonly found in patients with PsA, especially those with DIP joint involvement
Psoriatic Nail Changes Include

- Pitting: punctate depressions of the nail plate surface
- Onycholysis: separation of the nail plate from the nail bed
- Subungual hyperkeratosis: abnormal keratinization of the distal nail bed
- Oil drop sign: irregular area of yellow–orange discoloration visible through the nail plate
Psoriatic Arthritis Summary

- Health care providers are encouraged to actively seek signs and symptoms of PsA at each visit
- PsA may appear before the diagnosis of psoriasis
- If psoriatic arthritis is suspected, refer the patient to a rheumatologist
- Treatment goals include:
  - Alleviate signs and symptoms of arthritis
  - Inhibit structural damage
  - Maximize quality of life
Case Four

Peter Wendell
Case Four: History and Skin Exam

Peter is a 28 year-old male who presents to clinic with a new rash x 3 weeks. He reports six weeks prior, he was treated with amoxillicin for a sore throat. A week into treatment with the oral antibiotic, he developed a new rash.
What is the most likely cause of Peter’s new rash:

a. Guttate psoriasis
b. Medication reaction (amoxicillin)
c. Nummular eczema
d. Secondary syphilis
Case Four, Question 1

Answer: a

What is the most likely cause of Peter’s new rash:

a. Guttate psoriasis
b. Medication reaction (amoxicillin)
c. Nummular eczema
d. Secondary syphilis
Streptococcal infection and psoriasis

- Psoriasis (in particular, guttate) can be triggered by infections, especially streptococcal pharyngitis

- Management:
  - Treat the streptococcal pharyngitis per standard of care (antibiotics)
  - Antibiotics may help guttate psoriasis, but additional psoriasis therapies (topicals, Nb-UVB) may be required
Drugs can make psoriasis worse

- Psoriasis can be triggered or exacerbated by a number of medications including:
  - Systemic corticosteroid treatment or withdrawal
  - Beta blockers
  - Lithium
  - Antimalarials
  - Interferons
  - NSAIDS
- However, antibiotics are not common triggers of guttate psoriasis
Psoriasis is a chronic multisystem disease with predominantly skin and joint manifestations
About 1/3 of patients with psoriasis have a 1st-degree relative with psoriasis
Different types of psoriasis are based on morphology: plaque, guttate, inverse, pustular, and erythrodermic
Plaque psoriasis is the most common, affecting 80-90% of patients
A detailed history should be taken in patients with psoriasis
Nail disease is common in patients with psoriasis
Health care providers are encouraged to actively seek signs and symptoms of psoriatic arthritis at each visit
Take Home Points

- Topical treatment alone is used when the psoriasis is localized
- Patients with moderate to severe disease often require systemic treatment in addition to topical therapy
- Systemic treatment includes phototherapy, oral medications and biologic agents
- Oral steroids should never be used in psoriasis
- A successful treatment plan should include patient education as well as provider awareness of the patient’s experience
- Psoriasis is a lifelong disease and can affect all aspects of a patient’s quality of life
Acknowledgements

- This module was developed by the American Academy of Dermatology Medical Student Core Curriculum Workgroup from 2008-2012.
- Primary authors: Sarah D. Cipriano, MD, MPH; Eric Meinhardt, MD; Timothy G. Berger, MD, FAAD; Wilson Liao, MD, FAAD.
- Peer reviewers: Peter A. Lio, MD, FAAD; Jennifer Swearingen, MD; Kristina Callis-Duffin, MD.
- Revisions and editing: Sarah D. Cipriano, MD, MPH; Kristina Callis Duffin, MD. Last revised February 2015.
References

To take the quiz, click on the following link:

https://www.aad.org/quiz/psoriasis-learners