The Scaly, the Itchy and the Ugly

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Disclosures

None
Objectives

Approach to Papulosquamous Disorders

Diagnosis of common superficial cutaneous dermatophyte infections

Common mimickers

Treatment of cutaneous dermatophyte infections

Questions
Skin layers

- Stratum corneum
- Stratum lucidum
- Stratum granulosum
- Stratum spinosum
- Stratum basale
- Melanocyte
- Dermis
- Dead cells filled with keratin
- Lamellar granules
- Keratinocyte
- Merkel cell
- Sensory neuron
Papulosquamous Disorders
Papulosquamous DDX

Inflammatory
- Irritant intertrigo, Nummular eczema, psoriasis, Pityriasis Rosacea,

Infectious
- Dermatophyte
  - T. pedis, T. manus, T. cruris, T. corporis, T. Versicolor, T. capitis, Candida Intertrigo, T. incognito, syphilis
- Bacterial
  - Erythrasma, Syphilis

Neoplastic
- MF, EAC,
Scale
Crust
CASE 1
Tinea Capitis

Etiology: Mainly in children,

- In the US the most common caused is *Trichophyton Tonsurans* (used to be Microsporum Audouinii)
- In pet exposure the most common etiology is *Microsporum Canis*

Diagnosis

Treatment

- Oral antifungal therapy
A 7 year-old African American male presents to clinic with chief complaint of itchy scalp. Physical exam reveals the following.
What is the best treatment option?

a) Ketoconazole shampoo left on 5 minutes each time 3 times per week

b) Griseofulvin V suspension 20 mg/kg/day for 4-6 weeks

c) Griseofulvin V suspension 20 mg/kg for 4-6 weeks + prednisone 1-2 mg/kg/day for 1 week or until inflammation subsides

d) Ciclopirox 0.77% gel applied BID + single dose of fluconazole 100 mg

e) Terbinafine 8 mg/kg/day for 4-6 weeks
Griseofulvin vs Terbinafine vs Itraconazole


Case 2
Tinea Corporis

MC etiologies: T. rubrum, M. Canis, and T. Metangrophytes

Diagnosis is done clinically, but KOH prep or skin biopsy is adequate

Treatment: topical antifungal; rarely oral antifungal are needed
DDX, which one is Tinea corporis?
Quiz 2
What is the name and class of the steroid in lotrisone?

a) Clobetasol, class I
b) Triamcinolone, class III
c) Betametasone, class II
d) Betametasone propionate augmented, class I
e) Mometasone, class II
Current Trends in the Use of Two Combination Antifungal/Corticosteroid Creams.

Wheat CM¹, Bickley RJ², Hsueh YH³, Cohen BA⁴.

“Superficial fungal infections are among the most commonly managed skin problems by general practitioners. Although evidence shows combination of topical antifungal/corticosteroid are more expensive and less effective than single-agent antifungals, practitioners continue to prescribe combination agents”.
Do not use combination products such as betamethasone/clotrimazole because they can aggravate fungal infections

American Family Physician

“Do not use combination products such as betamethasone/clotrimazole because they can aggravate fungal infections”
Case 3
How would you treat this?

a) Start triamcinolone 0.1% ointment BID x 1 week
b) Start bactroban 2% ointment TID
c) Oral keflex 500 mg QID x 7 days
d) Obtain KOH, and start topical antifungal therapy
e) Start acylovir 400 mg TID x 10 days
Tinea incognito

Most often seen on face, groin and dorsal aspect of the hand

Due to use of topical steroids

Diagnosis requires history and KOH or fungal culture


Treatment with topical antifungal
Case 4
Tinea Pedis

T. Rubrum
- Tends to be dry, scaly, and erythematous type

T. Metagrophytes (interdigitale)
- Multilocular bullae involving the thin skin of the plantar arch and along the sides of the feet and heel
- Erythema and desquamation between the toes
- White superficial onychomycosis

DDX: hyperhidrosis, contact dermatitis and dyshidrotic eczema
Tinea Pedis DDX

Acute Contact Dermatitis

Pustular Psoriasis

Tinea Pedis

Dyshidrotic eczema

Psoriasis

Plantar Keratoderma
Tinea Pedis

Treatment

◦ First Line: Clotrimazole, Miconazole
◦ Second Line: Terbinafine topical, ciclopirox topical
◦ Third line:
  ◦ Topical: 40% urea cream, photodynamic therapy
  ◦ Systemic: Terbinafine, itraconazole, fluconazole, griseofulvin
Case 5
Tinea Cruris

Most common on summer months; men > women; children rarely develop tinea of the groin

Most often unilateral

Well defined scaling and sometimes a vesicular border; scrotum is unusual (unlike candida)

DDX include intertrigo, erythrasma, candida

Treatment: Topical antifungal creams, oral therapy sometimes used
  ◦ 50-100 mg of fluconazole daily or 150 mg once weekly for 2-3 weeks
Intertrigo
Erythrasma
Erythrasma

Bacterial infection

Positive Wood’s light

Uniformly brown, no advancing border

Responds to clindamycin, clarithromycin, topical miconazole, clotrimazole and econazole. **NOT ketoconazole.**
Candida of the groin

Two presentations
- Maceration, pustules with scale
- Red, moist, glistening plaque

Treatment
- Eradication + dryness
Case 6
Nummular Eczema

Primary in middle age and elderly persons

Coin-shaped red plaque, itch

The plaque may become thick and vesicles appear in the surface

Treatment
  - Depends on stage: Class I- IV topical steroids, foams with emollients base such as verdeso (desonide) or Olux-E (clobetasol) do not sting. Tracrolimus ointment 0.1% used alone or intermittently with topical steroids may be tried.
Quiz: A 14 year old female presents with a “rash” which is mildly itchy, started in the lower back 10 days ago and it spread over the entire trunk. She has been using OTC hydrocortisone. She reports having a mild sore throat 3 weeks ago; she denies any fever, chills, or malaise.
What is the best next step in the management of this patient?

a) Start patient on amoxicillin 500 mg BID x 10 days

b) Order RPR and if negative start patient on topical antifungal x 6 weeks

c) Diagnosis cannot be made clinically, recommend a punch biopsy.

d) Provide reassurance, this is benign and self limited; recommend mild steroid and otc antihistamines for symptomatic treatment.

e) Start patient on steroid taper for 3-4 weeks followed by UVB therapy as needed for itch.
Pityriasis Rosea (PR)

Common, benign usually asymptomatic, self-limiting skin eruption

Some evidence that HHV-6 may be involved

Majority of cases (75%) in patients between 10-35 years old

20% of patients with history of acute infection

DDX include secondary syphilis, guttate psoriasis, viral exanthems, tinea, nummular eczema and drug eruption
Lines of cleavage
Pityriasis Rosae
Clinical findings
Pityriasis Rosacea
Screening for Syphilis

Retrospective study on 142 patients at Weill Cornell Medicine, diagnosed with PR. Mean age 31.3 years. In majority of cases the sexual history was unknown. 2 patients had a reactive RPR titers of 1:32 and positive follow up Treponema specific testing.

US Preventive Services Task Force (USPSTF), screening for asymptomatic non-pregnant individuals with increased risk factors for syphilis.
Secondary syphilis
PR Treatment

Most cases can be treated symptomatically with topical steroid and antihistamines

Acyclovir 400 mg QID x 1 week
- Not efficient in all trials; may consider.

Phototherapy (UVB)
- Limited data in the use of UVB. In clinical practice exposure to sunlight may be suggested in patients with PR.

Macrolide antibiotics
- Some evidence on benefit of erythromycin (250 mg Q6hrs x 14 days); however due to GI side effects generally not recommended.

Systemic glucocorticoids
- Routine treatment with steroids not recommended. Exacerbation of PR is a potential risk of systemic glucocorticoid therapy.
Case 7

66-year-old man:
- Red, itchy rash x 5
- Failed terbinafine and itraconazole
- KOH negative
- Biopsy non specific (spongiosis and perivascular lymphocytic infiltrate), negative PAS
Based on the patient's history and physical examination, which one of the following is the most likely diagnosis?

a) Erythema annulare centrifugum.
b) Granuloma annulare.
c) Mycosis fungoides.
d) Pityriasis rosea.
e) Tinea corporis.
Erythema Annulare Centrifugum (EAC)

Known triggers include drugs, food, infection, autoimmune conditions and malignancies.

Firm pink papules that expand centrifugally and the develop central clearing, trailing scale. +/- pruritus

Treatment based on addressing underlying disorder
Case 8
Mycosis Fungoides

Most common type of CTCL, about 50% of cases

Median age is 55-60, men > women

Pathogenesis not well understood (genetic, environmental and immunologic factors have been considered)

Varying clinical presentation

Immunophenotype: CD3+, CD4+, CD44RO+, CD8-

Treatment depends on the stage of the disease ranging from topical steroids to systemic chemotherapy.
Clinical Findings in MF

Patch stage
Plaque Stage MF
Tumor Stage MF
Case 9
Tinea Versicolor

Caused by dimorphic lipophilic yeasts Pityrosporum orbiculare and pityrosporum ovale (previously called Malassezia furfur); resides in the stratum corneum and hair follicles where it thrives on free fatty acids.

Presents as multiple small, circular macules of various colors that enlarge radially

Upper back most commonly affected

The eruption may be itchy if it is inflammatory but it is usually asymptomatic

Diagnosis is clinically, Wood’s lamp would show fluorescence; KOH shows numerous, broad hyphae and cluster of budding cells.

Treatment: Topical antifungal, oral when extensive. **Oral Griseofulvin or Terbinafine is NOT active against TV**
Quiz: What is the pathogenesis of Tinea versicolor in hypopigmentation of the skin?

Dicarboxylic acids produced by the *Pityrosporum* may have a cytotoxic effect on melanocytes and inhibit the dopa tyrosinase reaction. There is a reduction in number, size, and aggregation of melanosomes in melanocytes and in surrounding keratinocytes.
Conclusions

If there is a scale, consider obtaining KOH or fungal culture

Most dermatophyte infections respond to topical antifungal medications

Combination of topical steroids and antifungal generally not recommended

Use of topical steroids for inflammatory dermatophyte infections should be maintained to the shortest duration.

If condition does not improve as expected consider alternative diagnosis

Consider tinea Incognito when lesion does not fit the usual presentation. Obtain a full history
References


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6. American Family Physician

7. Clinics in Dermatology. Arenas, Roberto, MD; Moreno-Coutiño, Gabriela, MD; Vera, Lucio, DrSc; Welsh, Oliverio, MD. Published March 1, 2010. Volume 28, Issue 2. Pages 137-139. © 2010.
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