

# Hair, Nails, and Pruritis

DMSK Week 2

A patient has multiple round areas of hair loss covering a majority of his scalp. He notices that the hair appears to be thinner at the root than it is at the distal ends. A drug with which of the following mechanisms of action would be appropriate?

- a. Systemically inhibits immune response and inflammation
- b. Suppresses IL-2 production and T cell proliferation
- c. Inhibits type II 5 $\alpha$ -reductase
- d. Autolysins degrade bacterial cell walls

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Cyclosporine suppresses the T cell response that leads to the autoimmune reaction.

Although glucocorticoids could be used topically on a small area, systemic glucocorticoids are not safe for the extended period of time that is required for Alopecia Areata.

Finasteride, the type II 5 $\alpha$ -reductase inhibitor, is used for androgenic hair loss.

The final choice represents a  $\beta$ -lactam antibiotic. This hair loss is not caused by a bacterial infection.

Bill is 40 and starting to lose his hair, just like his father and grandfather did when they were in their forties. His wife is younger and expecting a baby, so he can't be looking old and losing his hair! What drug can help Bill?

- a. Cyclosporine
- b. Glucocorticoids
- c. Finasteride
- d. Minoxidil

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Bill has Androgenic Alopecia, not Alopecia Areata. (genetic component)

Cyclosporines and glucocorticoids treat Alopecia Areata.

Finasteride is teratogenic to a male fetus, so pregnant women should not be exposed

Minoxidil enhances follicular size and can generate longer, increased number of hairs.

A patient presents concerned that discoloration of a toenail is due to growth of a malignant melanoma. Which of the following would confirm the patient's fear?

- a. Positive *P. Aeruginosa* Culture
- b. Multiple Pigmented Bands
- c. Scraping positive for Candida
- d. Hutchinson's Sign

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*Pseudomonas Aeruginosa* is a cause of "Green Nail Syndrome" and is not associated with malignancy. Multiple pigmented bands, or melanonychia, may be caused by genetics, drugs, or systemic disease. Single bands are associated with melanoma. Onychomycosis is a fungal infection causing a yellow/green nail discoloration, hyperkeratosis and onycholysis.

Hutchinson's Sign is pigmentation of the proximal nail fold in association with melanonychia, and is associated with melanoma.

A 30 year old female has plaques with scales on her knees and elbows and generalized pruritis. Which of the following findings is most likely in this patient when examining the nails?

- a. Positive fungal culture
- b. Vertical darkened band on a single nail
- c. Pitting of multiple nails
- d. Swollen, red, and painful digits



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This patient likely has psoriasis, a condition associated with irregular pitting of multiple nails. Onychomycosis, melanonychia, and paronychia, while all possible, are usually not associated with psoriasis.

A medical student preparing for his first test of year two nervously chewed on his fingernails and scratched away at his cuticles. A few days later the area around his fingernail became red, swollen and sensitive. This is the first time our student has experienced this. If this problem persists through the next few days, which of the following is most likely to provide effective treatment?

- a. Terbinafine
- b. Topical Mupirocin
- c. Doxycycline
- d. Antipseudomonal penicillin

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Terbinafine is an antifungal that may be effective in treatment of chronic paronychia, but acute paronychia is generally bacterial.

Topical Mupirocin is effective against both *S. Aureus* and *S. Pyogenes*, the two most common causes of acute paronychia

Doxycycline is used for the prevention of colonization in acne, as well as for treatment of Lyme Disease.

*P. Aeruginosa* can be associated with green nail syndrome, but no evidence suggests such a presentation.

A patient receiving chemotherapy for a melanoma has noticed that her nails are being affected. A doctor described her nails as having hemorrhagic pustules with surrounding erythema that are evolving into necrotic ulcers. The doctor prescribed the patient to take Ticarcillin. Which of the following microorganisms is causing her symptoms?

- a. *S. aureus*
- b. *S. pyogenes*
- c. *Pseudomonas aeruginosa*
- d. *Cryptococcus neoformans*

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The condition described is ecthyma gangrenosum, caused by *Pseudomonas aeruginosa*. Ticarcillin is an antipseudomonal penicillin.

*S. aureus* and *C. neoformans* are not treated by Ticarcillin.

*S. pyogenes* does not cause the symptoms described.

A 26 year old man reports to your office with recent onset of pruritis in the axilla region, with pustules surrounding multiple hair shafts. Laboratory findings reveal an infection with Methicillin-resistant *Staphylococcus aureus*. Which of the following treatments is likely to provide relief for this patient?

- a. Cephalexin
- b. Trimethoprim/Sulfamethoxazole
- c. Penicillin G

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TMP/SMX is active against methicillin resistant forms of *S. aureus*.

Cephalexin and Penicillin G are not effective against this species.

8 year old Suzie comes to your office with multiple excoriations on her fingers and intense itching over the past week. Which of the following treatments is most likely to provide her with relief?

- a. Permethrin
- b. Ivermectin
- c. Malathion
- d. Piperonyl butoxide + Pyrethrin
- e. Lindane
- f. Erythromycin



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Permethrin is first-line therapy!

Malathion and piperonyl butoxide + pyrethrin are alternatives for permethrin.

Lindane is infrequently used due to risk for seizures, death.

Ivermectin is oral therapy for lice and scabies, but not FDA approved.

You are leaving for a camping trip and you are afraid that, like every year, you'll be consumed by mosquitoes. What cream can you bring along to stop the itch that you're likely to endure?

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- b. Metronidazole
- c. Podofilox
- d. Hydroxyzine

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Even though hydroxyzine is considered to be the antihistamine of choice, only diphenhydramine comes in a topical formulation.

Hydroxyzine is only available for oral administration.