Graft-versus-host Disease of the Skin, Hair, and Nails

Alina Markova, MD
Dermatologist

GVHD of the Skin, Hair, and Nails: Learning Objectives

1. Understand the various ways chronic GVHD can affect the skin, hair and nails
2. Review the timeline of manifestations of cGVHD on the skin, hair and nails
3. Describe how cutaneous GVHD of the skin, hair, and nails can affect activities of daily living
4. Summarize pharmacological and non-pharmacological therapies that can help patients who have cutaneous GVHD
There are 2 Presentations of Skin GVHD

- **Acute**
  - ~First 100 days
  - Pink, flat and raised areas
  - May be itchy

- **Chronic**
  - ~ >Day 100

Rarely, acute GVHD of the skin may blister

Severity of acute GVHD of the skin is determined by the % of involved skin

<table>
<thead>
<tr>
<th>Stage</th>
<th>Skin (% body surface area of active areas only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>&lt;25</td>
</tr>
<tr>
<td>2</td>
<td>25-50</td>
</tr>
<tr>
<td>3</td>
<td>&gt;50</td>
</tr>
<tr>
<td>4</td>
<td>&gt;50% blister formation and peeling &gt;5% BSA</td>
</tr>
</tbody>
</table>
Acute GVHD of the Skin: Topical approach to therapy

- Topical corticosteroids
- Topical calcineurin inhibitors
- NB UVB phototherapy

Topicals come in different vehicles

- Solutions
- Sprays
- Gels
- Foams
- Creams
- Oils
- Ointments

Contain alcohol!

No alcohol! (water/oil based)
Topical therapies for acute GVHD of the skin

Localized
- Topical steroids twice daily
- Topical calcineurin inhibitors twice daily

Widespread
- Systemic therapy as per BMT
- Narrowband ultraviolet B phototherapy (off-label)

How does phototherapy work?

Find a Phototherapy Center at aad.org/fad

There are 2 Presentations of Skin GVHD

- Acute
- Chronic

Day of Transplant ~ > Day 100
Non-scarring (non-sclerotic) lichenoid chronic GVHD

Lichenoid chronic GVHD may be extensive
Chronic GVHD of the Skin: Lichen Planus-like cGVHD

Chronic GVHD of the Skin: Lichen planus-like GVHD
Topical therapies for chronic non-scarring skin GVHD

Localized
- Topical steroids
- Topical calcineurin inhibitors

Generalized
- NB UVB Phototherapy

GVHD of the Skin: Sclerotic GVHD
SCLEROTIC GVHD may appear in areas of prior trauma
Sclerotic chronic GVHD may lead to reduced range of motion

Photographic Range of Motion (P-ROM)

NIH Chronic Graft-versus-Host Disease Consensus for Clinical Trials: I. The 2014 Diagnosis and Staging Working Group Report
Wounds may develop within sclerotic GVHD

Topical therapies for chronic scarring skin GVHD

Localized
- Systemic therapy as per BMT
- Minimally effective
  - Topical steroids
  - Topical calcineurin inhibitors
- Wound care

Generalized
- Systemic therapy as per BMT
- UVA1 Phototherapy
Stretchmarks may develop with prolonged systemic steroid use

**Stretchmarks: How to Treat**

- Topical tretinoin improves early stretch marks
  - Reduces length and width of stretchmarks
  - May experience dryness, erythema, skin peeling with treatment

Stretchmarks may be treated with laser

Thin texture → Laser (e.g. fractional CO2 or Er:YAG laser)

Pink → Laser (e.g. pulsed dye laser)

CO2 laser may have a positive effect on late-stage stretchmarks

Microneedling may be a safe and effective treatment for stretchmarks

- Striae improved by >50% after ~2 treatments
- Main side effects are transient erythema (pinkness)

Cleansing when you have skin GVHD

**Handwashing**
- Wash your hands to prevent infections
- Dry your hands with a clean towel but leave some water on your hands
- Fragrance-free moisturizer

**Showers**
- <20 min bath/shower with lukewarm water
- Use gentle, fragrance-free soap or cleanser (bar soaps)
- Avoid antibacterial soaps/cleansers (with triclosan)
Order of skin products when you have GVHD

1. +/- Medicated cream or ointment
2. Moisturizer
3. Sunscreen
4. +/- Makeup
Moisturizing when you have skin GVHD

Choose
Choose an ointment or cream

Apply
Apply petroleum jelly or moisturizer your care team recommends when skin still damp

Seal
Cover moisturized hands/feet with cotton gloves or socks to seal in the moisture.

Choosing a sunblock when you have skin GVHD:
Two categories of sunscreens

Chemical: octinoxate, oxybenzone, avobenzone
- Easier to spread on skin
- Available in water-resistant options
- May be best if you do not have sensitive skin

Mineral: zinc oxide, titanium dioxide
- Thicker, may not rub into skin easily
- Better choice for sensitive skin
### How to sunprotect when you have GVHD

<table>
<thead>
<tr>
<th>Apply</th>
<th>Choose</th>
<th>Wear</th>
<th>Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply 20 minutes before you go outside</td>
<td>Choose “broad spectrum” with a sun protection factor (SPF) of 30+</td>
<td>Wear clothing that protects your skin from the sun • Long-sleeved shirts, wide-brimmed hats, sunglasses • UPF clothing when possible</td>
<td>Avoid sun from 10am – 4pm</td>
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### Using makeup when you have skin GVHD

<table>
<thead>
<tr>
<th>Choose fragrance-free products made for sensitive skin</th>
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<tr>
<td>Avoid products that are: Natural or unpreserved: they have germs</td>
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<tr>
<td>Try one product at a time every few days You may have new allergies, even to products you used previously</td>
</tr>
<tr>
<td>OK to use: Makeup to cover a rash if the skin is not broken Concealer to cover dark spots or light spots</td>
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Replace makeup products when you have skin GVHD

- Throw out your older products and buy new ones regularly
  - Replace mascaras every few months
  - Replace eyeshadow every year
  - Replace foundation every 1-2 years
  - Replace lipsticks and blushes every 1-2 years

Nail changes may be asymptomatic

- Onycholysis
- Splinter hemorrhage
- Longitudinal ridging
Patients may experience loss of nail

<table>
<thead>
<tr>
<th>Brittle, Breaking, Lifting, Scarring</th>
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<tbody>
<tr>
<td>• Sally Hansen Hard as Nails™</td>
</tr>
<tr>
<td>• Nailtek™</td>
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<tr>
<td>• Oral biotin</td>
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<tr>
<td>• High potency topical steroid</td>
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<table>
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<th>Scarring</th>
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<tr>
<td>• Steroid injection into nail fold</td>
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<tr>
<td>• Systemic therapy for GVHD</td>
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Most allogeneic transplant recipients experience hair loss (alopecia)

- **Anagen effluvium** = Hair loss in the first 6 months after chemotherapy
- **Persistent chemotherapy induced alopecia** = hair loss lasting > 6 months after chemotherapy
- **GVHD associated hair loss** may occur as part of chronic GVHD

GVHD hair loss may be scarring or nonscarring
Topical therapies for GVHD of scalp/hair

Hair thinning, fine hairs s/p alloHCT

Inflammatory (scale/erythema)
- Topical steroid solution + Topical minoxidil 5% (or oral minoxidil)

Non-inflammatory (no scale/erythema)
- Topical minoxidil 5% (or oral minoxidil) + oral finasteride (for males or postmenopausal females)

Follicular ostia lost
- Minoxidil to increase density +/- Hair transplant

Minoxidil shortens period of baldness
- Minoxidil shortened period of baldness by avg 50.2 days
- Does not prevent alopecia
Minoxidil may help appearance scarring GVHD by increasing background hair density

Baseline and after 12 mo of oral minoxidil in scarring hair loss

Hair care when you have GVHD of the scalp

• Wash and condition your hair every 2 – 4 days
• Use a shampoo and a cream rinse or hair conditioner
• When you brush or comb your hair, start at the ends. Use a soft-bristle brush, a comb, or your fingers.
• Use OTC antifungal shampoo or prescription ketoconazole shampoo for dandruff / scale
Pigmented concealing powders can camouflage hair thinning

- Powders
- Lotions
- Sprays


Hair transplantation may be used once GVHD is inactive

**Advantages**
- Effective and permanent
- Performed under local anesthesia

**Disadvantages**
- Risk of scalp swelling, bleeding, minor infections
- Risk of unnatural looking hair
- Creation of donor site scar
- Expensive

Micropigmentation recreates appearance of hair follicles

Advantages
- Relatively permanent
- Resembles pores on a scalp

Disadvantages
- Risk of infection from procedure
- Risk of allergy to pigment
- Natural hair must be dyed to match pigment
- May need touchups over time

GVHD of the skin, hair, and nails:

SUMMARY

- Acute GVHD of the skin presents as a maculopapular rash
- Chronic GVHD may affect the skin, hair, or nails
- Many treatments are available that improve quality of life
- Notify your care team if you develop signs of symptoms of skin, hair, or nail GVHD
- **TIP:** In the age of telehealth, always document any new rashes with photos!
Thank you!