Management of Chronic Wounds

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Disclosure of Financial Relationships

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Have no relationships with any entity
producing, marketing, re-selling, or
distributing health care goods or
services consumed by, or used on,
patients.

Objectives

• Review data on care of chronic leg wounds
  (focusing on venous ulcers)
• Using cases discuss management including
dressings and edema management.
• Learn practically how to choose dressings
  and manage edema
• Know data strength of recommendations
  (SORT, AAFP)

Epidemiology of Chronic Leg
Wounds

• Increasing prevalence, correlated with rising
  rates of diabetes and obesity
• Lifetime prevalence 1%
• 70% venous, 25% arterial, 5% other
• Major source of disability and pain/morbidity

Chronic Wounds Differ From Acute
Wounds

• “Stuck” in the
  inflammatory phase
• Excess necrotic tissue
• Increased elastase &
  metalloproteinases inhibit
  healing
• More “critical infection”
• Wound biofilms
  • resist host defenses
  • stimulate inflammation

International consensus. The role of proteases in wound diagnostics. An expert
**Wound Bed Preparation:**
*Getting to Clean Granulation Tissue*
- Need for debridement
- Bacterial load, infection level
- Moisture balance (keep moist, but not too wet)
- Assess other factors: edema, circulation, diabetes, dermatitis, etc

**Debride Necrotic Material**
- Surgical sharp debridement using scalpel or scissors
- Mechanical; Wet-to-dry, ultrasound, etc
- Autolysis, using the natural proteolytic enzymes in the wound.
- Enzymatic debridement
  - (Evidence level B)

**Continuum Of Bacterial Load**
- Contamination
- Colonized
  - Replicating but not causing injury
- Critically colonized;
  - Replicating bacteria slowing wound healing
- Infected
  - Causing clear injury to host

**Removing Offending Agents:**
*Contact Dermatitis*
- Up to half of patients have contact dermatitis to topical treatment agents
  - Contact sensitivity was more common in patients with stasis dermatitis (62% vs 38%)
  - Most common allergens: lanolin, neomycin sulfate, parabens (a preservative), and fragrances
  - Evidence level C
  - (Tavidia Contact Dermatitis 2003: 48: 261–265)

**A Role For Surgery**
- ESCHAR study: RCT with 500 pts and non-healing venous insufficiency ulcers (Gohel, BMJ 2007)
  - Randomized to compression alone, or compression plus vein surgery
  - Healing at 24 weeks 65% in both groups
  - Recurrence 12% vs 28%, p<0.001
- Synthetic skin grafts (*Apligraf*, Falanga, 1999)
  - 120 pts, healing at 6 mo 47% vs 19%, p<.005

**Lymphedema Notes**
- Generally a clinical dx
- Specialist referral for significant disease
- Complete Decongestive Therapy
  - manual lymph drainage
  - skin care
  - compression therapy
  - exercise
Wound Dressings/Moisture Balance
Which one to choose?

- What does the wound need now?
- What’s the goal: debridement, management of drainage, odor control, to stimulate granulation?
- Who will be doing the dressing change?
- Who will follow-up?
- (No single dressing proven most effective)

Dressings that Hydrate

- Hydrogel
  - (sheet or semiliquid gel)
  - Needs a secondary dressing
  - Contain glycerin or water
  - Alternative to saline gauze/wet-to-dry dressing
  - Solosite, Curasol
- Hydrocolloids
  - Wafer-type, adhesive dressing for superficial wounds
  - DO NOT use on infected wounds
  - Duoderm, Replicare, Restore

Dressings that Absorb

- Absorptive pads
  - Diaper technology
  - ABD pads, Eux-dry
- Calcium alginites
  - Needs a secondary dressing
  - Absorbs 20-30x weight
  - Algisite-M, Sorbain, Kaltostat, Curasorb
- Foam pad
  - Allevyn, Mepilex

Chemical Debriding

Enzymatic debriders
(i.e., Collagenase)
- Liquefies fibrin. Expect ↑ drainage
- (All topical products containing papain, i.e., Accuzyme, Panafil, Allanzyme, Ethizyme, Kova, Ziox taken off the market)

Topical Antimicrobials

- Cadexomer iodine (Iodosorb)
  - Pooled results from two RCTs showed increased healing at 4-6 weeks (RR 6.72, 95% CI 1.56 to 28.95) (Cochrane review)
- Silver sulfadiazine (Silvadene)
  - Cream, impregnated silver dressings
  - Evidence level C

Wound Care Summary

- Systematically assess wounds
- Treat critical bacterial colonization
- Compression for even mild edema
- Refer for advanced or nonhealing wounds, lymphedema care and surgery
Treatment of Extremity Edema

- Methods: Elevation, multi-layer elastic bandages, Unna boot, support hose, IPC
- Compression improves healing of VLU when compared to no compression
  - Evidence level A

Prevention of Ulceration Using Compression

- Primary prevention;
  - Prevention after symptomatic DVT shown in RCTs
  - 180 pts, risk reduction 0.49, P = 0.011) for post-phlebitic syndrome, including ulceration
  - Over all two positive studies, one negative study
- Secondary prevention of recurrent ulceration
  - Compression stockings reduce likelihood of venous ulcers recurrence when compared with no compression
  - Evidence Level B

Prevention vs treatment

- Prevention
  - Compression stockings (Jobst)
- Treatment
  - Short stretch bandages, lower resting pressure
  - No stretch (paste bandages, ie. Unna’s boot)
  - Long stretch bandages, high resting pressure

Compression Bandaging

**Short/Low Stretch Bandages**
(ie Comprilan, 2-layer short-stretch Coban system)

- Low resting pressure, high working pressure
- For diabetic, mixed vascular disease, venous insufficiency, post-surgical/trauma, lymphedema
- Decreased or normal ABI, non-palpable pulses

**Long/High Stretch Bandages**
(3-4 layer bandage system which includes “ace” bandage)

- Higher resting pressure, low working pressure
- For post-op edema, acute edema due to trauma (first 10 days), venous insufficiency
- Normal ABI, >0.8

Cautions with Compression

- Acute infection/cellulitis
- Uncompensated congestive heart failure
- Acute thrombophlebitis
- Relative contraindication for ABI <0.8
  - Check the ABI first if there is any question
- Neuropathy
Compression Principles Summary

- Multilayer bandaging initially
- Add layers for more compression
- More pressure (up to 80mm) gives better results
- Do what the patient can tolerate—some is better than none
- Change daily—weekly
- Billable

Let’s Practice!

- Coban 2-layer compression system
- Short stretch bandages