Skin Changes and Wound Healing in the Older Adult

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Skin Changes and Wound Healing in the Older Adult

Objectives

1. Describe characteristics of aging skin and aging processes that put older people at risk for chronic wounds

2. Discuss clinical interventions appropriate for prevention, assessment and care of older people with fragile skin and/or wounds

Healthy Older Adults

- Aging causes slower wound healing (>60 y/o)
- Not an actual impediment in terms of quality of healing
- Healthy older adults heal, but more slowly

(Gosain and DiPietro, 2004; Keylock et al., 2008).

Aging Skin Physiology

- Barrier function is reduced
- Decreased number of melanocytes
- Decreased number of Langerhan's cells
- Decreased mast cells
- Decreased sweat glands
- Diminished vascularity
- Decreased subcutaneous fat

Aging
A Major Risk Factor for Impaired Healing

20s 50s 70s 90s
High-Quality Skin and Wound Care in Older Adults

- Requires
  - Specialized knowledge
  - Particular set of skills
  - Clinician needs more time & patience
  - Investigative skills – to tease out factors impeding closure & subsequent healing

Chronic Diseases & Risks Factors That Impair Healing

- Immobility – biggest culprit for pressure ulcers
- Diabetes
  - Autonomic neuropathy – more to come
  - Malabsorption -

Chronic Diseases & Risks Factors That Impair Healing

- Systemic oxygenation
  - COPD
  - CHF
- PVD
  - Arterial insufficiency (PAD)
  - Venous insufficiency (CVI)

Chronic Diseases & Risks Factors That Impair Healing

- Poor nutrition/hydration
  - Dentation
  - Decreased protein intake
  - Taste sensation
  - Loss of thirst mechanism

Largest Portion of Population with DM

- Those age 65 and older account for almost 50% of the population with DM

Diabetes Impairs All Phases of Wound Healing
## Estrogen's Role in Wound Healing

- Differences in gene expression between elderly & young male with wounds almost exclusively estrogen-regulated
- Hartman & Ascroft (2008) stated:
  - "Estrogen, not intrinsic aging, is the major regulator of delayed human wound healing in the elderly."


## Estrogen's Affects on Wound Healing

- Regulates a variety of genes associated with regeneration:
  - matrix production
  - protease inhibition
  - epidermal function
  - genes primarily associated with inflammation

Major Classes of Medications that Impair Wound Healing

- **Antiplatelets**
  - Clot formation or platelet function
- **Glucocorticoid steroids**
  - Inflammatory responses
- **Chemotherapeutic drugs**
  - Cell proliferation
- **Diuretics**
  - Dehydration effects – glucose concentration ↑

Substantial Morbidity and Mortality

- Wound healing in older adults often severely impaired
- Estimated cost to health services of over $15 billion annually in the US

Depression & Wound Healing

- ↑ depression impaired healing & ↑ recurrence of DFU in older pts
- Why not clear or defined in this study
- Did chronic DFU directly contributed to depression?
- Did depression prolong healing of DFU through reduced adherence to treatment protocols?
- Did depression have physiological effects on blood pressure, catecholamine secretion, platelet function, & immune status?

Depression & Wound Healing in Older Adults

- Clinicians should be especially sensitive to identification & treatment of depression & other psychiatric disorders in older adults, as these are often undetected or undertreated.

Fewer Closed Wounds in Older Individuals

Older adults (>70) have 25% fewer closed wounds than younger patients

What To Do?

- Assess & care plan each risk factors identified on Braden scale
- Prevention, prevention, prevention

<table>
<thead>
<tr>
<th>Sensory Perception</th>
<th>Moisture</th>
<th>Activity</th>
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<tr>
<td>Mobility</td>
<td>Nutrition</td>
<td>Friction &amp; Shear</td>
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<tr>
<td>Immobile</td>
<td>2. Probably Inadequate</td>
<td>2. Potential</td>
</tr>
<tr>
<td>4. No Limitations</td>
<td></td>
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</tbody>
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### What To Do?

- ABIs – be proactive
- Injury prevention POC in presence of ↓ blood flow to LE
- Physical activity to tolerance:
  - Engage calf pump
  - Ambulate even in presence of intermittent claudication
  - Keep those quadriceps ACTIVE

### Debridement

- Consider enzymes or sharp/surgical a.s.a.p.
- Autolytic **OFTEN not functional** in older adults due to diminished enzymatic & inflammatory activity

### Summary

**Aging: A Systemic Factor for Increased Risk for Wounds**

- Aging processes contribute to anatomical & functional changes
  - Results in decreased skin function
    - Progressive loss of skin function
    - Increased vulnerability to the environment
    - Decreased homeostatic ability
- Combination of intrinsic and extrinsic factors results in altered wound healing processes

### Prolonging Life

**“Permissible Pressure Ulcer”**

**“Skin failure”**

**“Unavoidable Pressure Ulcer”**

### Palliative Care Defined

- **World Health Organization** ([www.who.int](http://www.who.int))
  - Care that:
    - Affirms life, and views death and dying as a normal process that neither speeds nor delays death,
    - Provides relief from pain and other symptoms,
    - Offers support to patient and family

- **National Consensus Project for Quality Palliative Care** ([www.nationalconsensusproject.org](http://www.nationalconsensusproject.org))
  - An organized, highly structured delivery of care system that promotes the greatest comfort and dignity
### Hospice Care Defined

| National Hospice and Palliative Care Organization  
| (www.nhpco.org)  
| “Hospice focuses on caring, not curing.”  
| Team approach/Patient wishes/Family support  
| Quality, compassionate care  
| Medical, pain, emotional, spiritual support  
| Dignity at end of life |

### Skin Failure

| Illustrated...  
| Defined...  
| an event in which the skin and underlying tissue die due to hypoperfusion that occurs concurrent with severe dysfunction or failure of the organ systems. |

### Skin Barrier Failure

- Largest organ
- Fails as other organs
- Acute, chronic, end-stage

### Acute Skin Failure

- Hypoperfusion
- Critical illness
- ICU/Acute Care Setting

### Chronic Skin Failure

- Concurrent with chronic disease states
- Steady deterioration
- Multiple comorbidities

### Kennedy Terminal Ulcer-End Stage

- Starts superficial
- Abrasion
- Rapid progression
- Sacrum
- Unknown causes
Wound Care at Life’s End

Palliative Care
- Pain
- Exudate Control
- Wound Odor

What to Do?
- Palliative care may be indicated – different from hospice
  - Not able to fix but want to control
  - Teasing out your patient’s goals – ask the right questions
  - Our goals aren’t important – you patient’s goals should be paramount

Palliative Care Goals
- Complete wound closure may not be a realistic goal
- Meaningful alternative goals may need to be considered
  - Improvement in overall quality of life
    - Control
    - Exudate
    - Pain
    - Odor

Interventions
- Nutritional support
- Hydration
- Medical management
- Hygiene
- Rehabilitation
- Redistribution

Skin Care
- Avoid soap
- pH-balanced cleanser
- Moisturizers
- Moisture barrier
- Protect from maceration
- Incontinence management

Pain & Comfort
- #1 most distressful experience
- Timing of dressing changes
- Appropriate dressing selection
- Wound cleansing agents
- Topical pain control
- Nonpharmacologic techniques
Wound Odor
- Wound cleansing
- Debridement
- Topical antimicrobials
- Deodorizers
- Charcoal dressings

Wound Exudate
- Manage exudate without drying wound bed
- Consider frequency of change
- Protect peri-wound

Bleeding
- Careful dressing removal
- Nonadherent dressings
- Gentle pressure

References

Thank You!!!