Incontinence Associated Dermatitis:
Preventing and Managing Skin Injuries
Clinical update for Case Managers
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First Quality Healthcare

- This program has been pre-approved by The Commission for Case Manager Certification to provide continuing education credit to CCM® board certified case managers. The course is approved for 1 CE contact hour
Objectives

• Define Incontinent Associated Dermatitis (IAD) and it’s risk factors
• Discuss costs associated with incontinence
• Compare IAD and pressure injury
• Examine prevention and management techniques for IAD
Incontinence in our population

- Effects millions of disabled children and young/elderly adults
- One of the 10 leading diagnoses among homebound Seniors
- One of the top 3 reasons for nursing home admission
- Need for toileting and/or urgency increases the risk of falls by 26%, fractures by 34%

(1) National Center for Health Statistics, 2006
(2) AMDA Clinical Practice Guidelines 2012
Incontinence-associated dermatitis (IAD) describes the skin damage associated with exposure to urine or stool. Causes considerable discomfort and can be difficult, time consuming and expensive to treat.

Also referred to as:
- Diaper dermatitis
- Irritant dermatitis
- Moisture lesions
- Perineal dermatitis
- Perineal rash

Areas affected by I.A.D.

1. Genitalia (labia/scrotum)
2. Right groin fold (crease) between genitalia and thigh
3. Left groin fold (crease between genitalia and thigh)
4. Lower abdomen/suprapubic
5. Right inner thigh
6. Left inner thigh
7. Perianal skin
8. Gluteal fold (crease between buttocks)
9. Left upper buttock
10. Right upper buttock
11. Left lower buttock
12. Right lower buttock
13. Left posterior thigh
14. Right posterior thigh

www.woundsinternational.com/media/other-resources/_/1154/files/iad_web.pdf
Incontinence and IAD

Costs/Risk Factors and other Issues
Costs Associated with Urinary Incontinence 1995

- $16.3 billion (including $12.4B for women and $3.8B for men)
- Costs for women over 65 years of age were more than twice the costs for those under 65 years ($7.6 vs. $3.6 billion).
- Cost Categories
  - Routine care (70%),
  - Nursing home admissions (14%),
  - Treatment (9%),
  - Complications (6%)
  - Diagnosis and evaluations (1%)

Costs Associated with IAD

• IAD is associated with direct costs
  • Provider visits, Home Health visits, Hospital/SNF stays
  • Equipment/supplies

• Complications:
  • Pressure injury
  • Secondary infections
  • Increased length of hospital stay or re-hospitalization
  • Additional resources (appointments, wound consultant) (1)

• Skin conditions associated with incontinence in 1995:
  • 136 million additional costs (2)
  • Difficult to isolate just IAD

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Who is at risk for I.A.D?

Type of Incontinence
Urine, fecal (solid liquid), both

- Frequent episodes of incontinence, urine and fecal
- Use of occlusive containment products (plastic back briefs)
- Poorly fitting or inadequate absorbent product
- Decreased/compromised mobility
- Poor skin condition due to other factors
- Diminished cognitive awareness
- Inability to perform personal hygiene
- Pain---doesn’t want to move
- Increased body temperature
- Poor nutritional status

### TABLE 1 | IAD Severity Categorisation Tool

<table>
<thead>
<tr>
<th>Clinical presentation</th>
<th>Severity of IAD</th>
<th>Signs**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No redness and skin intact (at risk)</td>
<td>Skin is normal as compared to rest of body (no signs of IAD)</td>
</tr>
<tr>
<td></td>
<td>Category 1 - Red* but skin intact (mild)</td>
<td>Erythema</td>
</tr>
<tr>
<td></td>
<td>Category 2 - Red* with skin breakdown (moderate-severe)</td>
<td>As above for Category 1</td>
</tr>
</tbody>
</table>

* Or paler, darker, purple, dark red or yellow in patients with darker skin tones

** If the patient is not incontinent, the condition is not IAD

[www.woundsinternational.com/media/other-resources/_/1154/files/idad_web.pdf](http://www.woundsinternational.com/media/other-resources/_/1154/files/idad_web.pdf)
Why Does Damage Occur?

Anatomy and Physiology of the Skin
Why damage occurs: A&P of Skin

• Stratum Corneum, the outermost layer is the main barrier, is comprised of corneocytes.
• Corneocytes start as keratinocytes at the inner-most layer, then turn into corneocytes.
• New corneocytes replace the outer layer, renewing the outer layer and maintaining natural moisture.
• Structured like brick/mortar wall to add stability and support moisture movement between layers.
• Normal skin pH is 4-6. “Acid mantle” helps fight bacteria and maintains skin’s barrier function.
• Acidic pH ensures optimal cohesion of stratum corneum.
How does Incontinence Damage the Skin?

- Liquid from incontinence is held in by corneocytes
- Over hydration and swelling damages the stratum corneum (maceration)
- Irritants penetrate the stratum and exacerbate inflammation, damaging skin integrity
- Skin pH is increased with urine exposure when urea from urine is naturally converted to ammonia
- Skin can be damaged by friction from clothing, bedding, briefs, etc.
How does Incontinence Damage the Skin?

- Feces contains lipid and protein digesting enzymes which can damage stratum corneum
- Enzymes also act on urea to produce ammonia, further increasing the pH
- Enzymes are more active at a higher pH, causing further damage
- Liquid stool is higher in digestive enzymes, compounding the problem
- Studies suggest urinary and fecal inco together is more irritating than urine or stool alone

What happens to the skin with I.A.D?

• Exposure to urine: keratinocytes (inner most skin cells) absorb urine, swell, and can no longer provide a barrier (over hydration of the skin)
• Ammonia in urine raises skin’s pH, harming acid mantle, decreasing skin’s resistance to external forces
• Exposure to stool: digestive enzymes denude the skin
• Increased friction as skin moves against absorptive devices, clothing, or bedding
• Various Severity

*Junkin, J. and Selekov, J. Prevalence of incontinence and associated skin injury in the acute care inpatient. JWOCN, 34, (3). Pg. 260-269
*Ibid., No. 7.create tissue ischemia, worsening skin integrity
Mild IAD
Moderate IAD
Severe IAD
What is the difference?

What do they have in common?
• **Pressure Injury:**

A pressure injury is localized damage to the skin and/or underlying soft tissue usually over a bony prominence or related to a medical or other device. The injury can present as intact skin or an open ulcer and may be painful. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear. The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, co-morbidities and condition of the soft tissue.

• The National Pressure Ulcer Advisory Panel (NPUAP), April 2016 npuap.org
New NPUAP Guidelines: Staging

- **Stage 1** Pressure Injury: Non-blanchable erythema of intact skin
- **Stage 2** Pressure Injury: Partial-thickness skin loss with exposed dermis
- **Stage 3** Pressure Injury: Full-thickness skin loss
- **Stage 4** Pressure Injury: Full-thickness skin and tissue loss
- **Unstageable** Pressure Injury: Obscured full-thickness skin and tissue loss
- **Deep Tissue Pressure Injury**: Persistent non-blanchable deep red, maroon or purple discoloration

*The National Pressure Ulcer Advisory Panel (NPUAP), April 2016 npuap.org*
• Skin injuries are not all caused by pressure
• Wet skin demonstrates a higher coefficient of friction (CoF), is exacerbated by urine/stool
• Increasing in CoF also reduces tissue tolerance to pressure and shear stresses within deeper tissues
• Superficial skin changes are predominantly caused by frictional forces on the skin surface
• Increases soft tissue damage that ultimately causes a pressure injury
• Inflammation may play a role in making skin more susceptible to pressure injury
IAD vs Pressure Injury

IAD

- Incontinence
- Pain/burning/itching
- Perineum, perigenital area, buttocks; gluteal fold, thighs, back
- Poorly defined edges
- Secondary skin infection may be present (candidiasis)

Pressure Injury

- Exposure to pressure/shear/friction
- Pain
- Bony Prominence
- Distinct edges or margins
- Secondary soft tissue infection may be present
Key Assessment Factors

- Urinary or fecal incontinence (diarrhea/formed stool)
- Double incontinence (fecal and urinary)
- Frequent episodes of incontinence (especially fecal)
- Use of occlusive containment products
- Poor skin condition (i.e., due to aging/steroid use/diabetes).
- Compromised mobility
- Diminished cognitive awareness
- Inability to perform personal hygiene
- Pain
- Raised body temperature (pyrexia)
- Medications (antibiotics, immunosuppressant's)
- Poor nutritional status
- Critical illness

Junkin, J. and Selekov, J. Prevalence of incontinence and associated skin injury in the acute care inpatient. JWOCN, 34, (3). Pg. 260-269
IAD and Pressure Injury

- Diagnosis of IAD is sometimes difficult
- Stage 1 or 2 are sometimes misdiagnosed as IAD
- No true assessment instrument specific for IAD
- Contact dermatitis, infections, perspiration do mimic
- IAD adds additional risk to pressure injury

- All those incontinent are at risk, but....
  If there is no incontinence, there is no IAD

Two key interventions:

• Managing Incontinence
  – Treat reversible causes
  – Decrease or eliminate urine/fecal contact with skin

• Skin Care regimen
  – Protect intact skin
  – Promote skin barrier function

Interventions are similar for prevention and management of IAD
Prevention and Management of IAD

• Prevention and overall management to avert skin complications
Managing Incontinence

Reduce the number of incontinent episodes
• Keep urine/feces off the skin
• Toileting programs to reduce incontinent episodes
• Medication management
• Dietary changes to reduce bowel incontinence or change stool consistency
• Treat or manage underlying co-morbidities
• Provide effective wearable absorbent products
• Foley cath or fecal pouches if necessary
• Use outside consultants to help diagnose/treat
Skin Care Regimen

✓ Prevention and Treatment
✓ Cleanse
✓ Restore
✓ Protect
Cleanse

- Not with traditional soap
- Non ionic surfactants are best because of gentleness
- Most are designed to use straight out of the bottle (not diluted). Some are no-rinse
- Use soft, disposable non-woven cloth if needed
- Product manufacturers can provide information regarding ingredients and usage
- Always read manufacturer’s instruction before using
Skin Care Regimen

Protect

• Used for prevention and treatment IAD
• Allows damaged skin to recover by forming a barrier
• Apply to all skin that comes into contact with urine/feces
• Ensure protectant is compatible with other skin care products
• Apply at a frequency/amount that is compatible with manufacturers instruction. Do no over-apply
• Some may not be used on denuded skin. Follow manufacture instructions
# Skin Care Regimen - Protect

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Description</th>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petrolatum</td>
<td>Derived from petroleum processing Common base for ointments</td>
<td>• Forms and occlusive layer, increasing skin hydration&lt;br&gt;• May affect fluid uptake of absorbent products&lt;br&gt;• Transparent when applied thinly</td>
</tr>
<tr>
<td>Zinc Oxide</td>
<td>White powder mixed with a carrier to form an opaque cream, ointment or paste</td>
<td>• Sometimes difficult to remove&lt;br&gt;• Usually opaque but can become transparent after application</td>
</tr>
<tr>
<td>Dimethicone</td>
<td>Silicone based (Siloxane)</td>
<td>• Non-occlusive. Shouldn’t effect absorbent products if used sparingly&lt;br&gt;• Usually opaque but can become transparent after application</td>
</tr>
<tr>
<td>Acrylate teropolymer</td>
<td>Polymer forms a transparent film on skin</td>
<td>• Does not require removal&lt;br&gt;• Transparent</td>
</tr>
</tbody>
</table>

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Skin Care Regimen

Restore

- Topical leave-on product or “moisturizer”
- Some have Lipophillic materials known as emollients
- Attract moisture to reduce dryness and restore the lipid matrix of the stratum corneum
- Others are considered humectants – draws in and holds moisture in the stratum corneum
- Effective alone or with cleanse/protect products (3-in-1)
- Recommended for those at risk
Skin Infection – Candidiasis

• Treated topically with antifungal cream or powder
• Appearance
• Can be difficult to differentiate from other dermatological conditions
• Should respond to antifungals quickly
• Seek provider opinion if you’re not sure, or if residents are not responding
• Routine use of antifungals to prevent candidiasis is unwarranted
DON’T:
• Cleanse- soap & water/washcloth not recommended
• Soap is alkaline and changes the pH of the skin, damaging the skin barrier function
• Washcloths are a rough/nubby material that can cause skin damage on fragile skin with the friction/rubbing
• Infection control issues- wash basins

DO:
• Use gentle technique with minimal friction—avoid rubbing
• Gentle no-rinse liquid skin cleanser or pre-moistened wipe (designed and indicted for incontinence care)
• Gently dry skin if needed after cleansing
Management of IAD

• Disposable incontinent products with:
  • Improved fluid handling properties
  • Is an adjunct to a structured skin care regimen
  • Avoid occlusion and over hydration of the skin

• Indwelling Foley catheters (last resort, temporary)

• Fecal Management System (liquid stool) i.e. Pouch

• Quick attention to bowel incontinence

• With a structured skin management program IAD should improve in 1-2 days, resolve in 1-2 weeks

Getting Help for Incontinence

Using Your Resources:

- CWS or other wound specialist to consult
- Dietitian to review diet, fluids, effect on bowel/bladder
- Restorative nursing to evaluate for toileting program
- Therapy to evaluate function, strength, toileting ability
- Physician or ARNP involvement for med management
- Web resources
Summary

- IAD is associated with physical pain, social harm
- Puts people at risk for other types of skin injury
- Associated with incontinence, but also medications, nutritional status, immobility, cognitive issues
- Treatment can be lengthy, full of complications/costs
- Costs involved with complications, clinical time, hospitalizations, etc.
- Prevention of IAD centers around continence management and a good skin care regimen
- Tap into resources, clinicians who can help
Questions