WOUND INFECTION IN LONG-TERM CARE ERIN BALLARD, RN, NSWOC WOC(C)

NO CONFLICTS OF INTEREST TO DECLARE

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WOUND INFECTION DECREASES QUALITY OF LIFE AND INCREASES COST OF CARE

> Pain Burden of wound care Odour Hospitalization Wound care costs



Swanson et al. (2020). Preventing and treating infection in wounds: translating evidence and recommendations into practice. *Wounds International*, 11(4).

ASSESSING THE RISK

ETIOLOGY PERFUSION ENVIRONMENT MEDICATIONS COMORBIDITIES WOUND FACTORS



WOUND INFECTION CONTINUUM



Source: WUWHS, (2008); Swanson et al. (2015). Increasing clinical problems & increased intervention is required to prevent wound deterioration & facilitate healing *Wound International*, 6(2), 22-27; Carpenter et al. (2016). Expert recommendations for optimizing outcomes in the management of biofilm to promote healing of chronic wounds. *Wounds*, (June). IWII (2016, Nov 11). International Consensus Update: Wound infection in clinical practice.

BIOFILM

- 1. 60-90% of chronic wounds contain biofilm
- 2. Polymicrobial community living under a protective barrier
- 3. Cause persistent or recurrent infections
- Resistant to the immune response, antibiotics and most antimicrobials



THERE ARE WOUNDS THAT TELL US LOUD AND CLEAR THEY ARE INFECTED



AND THOSE THAT DON'T





DIAGNOSIS

LOCAL INFECTION

- Stalled healing
- Friable bleeding tissue
- Increase in exudate
- Increased pain
- Increased malodour



SPREADING INFECTION

- Periwound erythema and induration
- Periwound heat
- Increased wound size
- Satellite wounds
- Lethargy, loss of appetite

CULTURE & SENSITIVITY SWABS

ONLY SWAB A CLEAN WOUND

PUSH FIRMLY TO EXPRESS FLUID

DO NOT CULTURE WOUND EXUDATE

PUSH DOWN FIRMLY TO EXPRESS FLUID FROM THE DEEPER TISSUES





COMMON BACTERIA IN CHRONIC WOUNDS

GRAM - POSITIVE

Staphylococcus Aureus

E-Coli

<u>GRAM – NEGATIVE</u>

Proteus Mirabilis

Pseudomonas Aeruginosa

LOCAL WOUND CARE CONSIDERATIONS

Stop infections at the local level before they progress by using topical antimicrobial dressings



Effective wound cleansing



Debridement when safe and indicated



Managing exudate with the right dressing



Assessing for S&S of infection at each dressing change



Handwashing and aseptic technique



TOPICAL ANTIBIOTICS?

- Can induce abx resistance
- Necessitate daily to BID dressings
- Add moisture to wounds
- Potential for local allergic reactions

INSTEAD, topical antimicrobial dressings

- Silver
- Iodine
- Honey
- PHMB
- Methylene blue gentian violet

MOISTURE-ASSOCIATED SKIN DAMAGE AND FUNGAL INFECTIONS

- Moisture + Friction = Intertrigo (skin breakdown in a skin fold)
- Fungal infections are common with intertrigo and can be treated with topical wound care products







THE HIGH-RISK DIABETIC FOOT

Wound Prevention

- HgA1C within target range
- BP < 160/95
- Dyslipidemia mgmt.
- Foot care and footwear
- Smoking cessation
- Treat toenail fungal infections
- Pro-active offloading

THE DIABETIC WOUND

Amputation Timeline

- Diagnosis of diabetes
- Neuropathy
- Wound
- Vascular disease
- Infection
- Amputation

	Diabetes (N = 294)	No diabetes (N = 88)
Index outcomes		
Index length of stay (days)	8.0, 10.9 (9.2)	8.0, 8.8 (5.8)
Antibiotic duration (days)	22.0, 39.0 (43.0)	23.0, 34.1 (30.4)
Surgical intervention	232 (78.9)	72 (83.0)
Number of surgeries	2.0, 2.3 (2.4)	2.0, 1.7 (1.3)
Lower limb amputation	167 (56.8)	39 (44.3)
Foot amputation	139 (47.3)	38 (43.2)
BKA & AKA	28 (9.5)	1 (1.1)
1-year outcomes		
Healed	205 (69.7)	64 (72.7)
Time to heal (days)	115.0, 151.8 (108.8)	73.0, 108.8 (90.6)
Re-infection	141 (48.0)	27 (30.7)
Re-admission for foot	139 (47.3)	26 (29.5)
Re-admission, all cause	186 (63.3)	31 (35.2)
Length of stay for foot (days)	13.0, 18.8 (13.7)	10.0, 13.7 (11.5)
Mortality	9 (3.1)	0 (0.0)

Lavery, L.A., et al. (2024). The infected diabetic foot: analysis of diabetic and non-diabetic foot infections. *Wound Repair and Regeneration*, *32*(4) DOI: 10.1111/wrr.13162

DIABETIC ISCHEMIC WOUNDS

Poor perfusion = poor resistance to wound infection S&S of infection are blunted with diabetes and PAD





Assessment for Infection

- New or worsening pain
 - Probes to bone (OM)
- Change in behaviour/LOC
- Unexplained increase in blood glucose

OSTEOMYELITIS



Probe to bone test



ESR, Procalcitonin and CRP







6-12 weeks PO abx or PO/IV combo

KEY TAKEAWAYS

RECOGNIZE THOSE AT INCREASED RISK

USE A STANDARDIZED APPROACH TO DIAGNOSING A WOUND INFECTION

USE TOPICAL ANTIMICROBIAL DRESSINGS TO STOP A LOCAL INFECTION FROM PROGRESSING

BE MORE ALERT TO WOUND INFECTIONS WITH RESIDENTS WHO HAVE DIABETES

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