DIM Before DIMES: Conceptual Model to Wound Bed Preparation

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Growing Need for Wound Care

Aging population + Obesity

5-7 Million Chronic Wounds in US

Higher rates of chronic wounds

$ 50 Billion USD/year= Cost Associated with Wound Care

"The doctor will be with you tomorrow as he believes that time heals all wounds."
The vicious circle of delayed wound healing

Degradation of ECM and growth factors
Bacterial proteases and toxins
Increased inflammatory response

Cells produce excess proteases
Cytokines and free radicals


How do we get a chronic wound to heal?

Convert the chronic wound into an acute wound and allow normal healing to take place

Wound Bed Preparation

- Preparing the body to do its own healing
- Hippocrates
  - “vis medicatrix naturae”
- Natural forces within us are the true healers of disease

Wound Bed Preparation

- Stuck in the Inflammatory Phase
- Defective remodeling of ECM
- Fail to re-epithelialize

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Wound Bed Preparation Paradigm

- Debridement
- Infection
- Moisture Balance
- Edge Effect (Biological Agents, Growth Factors, Skin Substitutes, Adjunctive Therapies)

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Debridement

- Devitalized Tissue
  - Barrier to cell migration
  - Provides ideal environment for bacterial proliferation
  - Prolongs the inflammatory response

Frequency of Debridements and Time to Heal A Retrospective Cohort Study of 312,744 Wounds

James R. Wilcox, RN; Marissa J. Carter, PhD, MA; Scott Covington.
[1] Author Affiliations
More frequent debridement = faster healing

Wilcox et. al. JAMA Derm. 2013

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**INFECTION**

- All chronic wounds sit somewhere along a bacterial spectrum

**Contaminated**

**Colonized**

**Increased bacterial burden**

**Infected**

**INFECTION**

- Biofilm
  - Bacteria protected by exopolysaccharide shield
  - Highly inflammatory

- Shed bacteria
  - Suppress host immune response

**MOISTURE BALANCE**

- Excessive Fluid
  - Exudate contain proteases, inactivate growth factors

- Dessication
  - Slows epithelial cell migration

- Not too moist, not too dry.....Just right
Conclusions

- Concept of wound preparation focused on re-balancing the chronic wound environment to stimulate and allow the natural healing process to continue
- Wound Preparation:
  - Debridement
  - Bacterial balance/infection control
  - Moisture Management
  - Edge effect