Suspected Deep Tissue Injuries & Pressure Ulcers In the Perioperative Area

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August 1, 2012
Disclosure Information

I have no conflict of interest to disclose
Objectives

- Identify risk factors for the development of hospital acquired pressure ulcers (HAPU) and suspected Deep Tissue Injuries (sDTI) in the perioperative area
- Identify interventions for the prevention of HAPU and sDTI in perioperative patients
Acknowledgments

- UC Davis Wound Care Team
- UC Davis perioperative QI team
- Loss Prevention Grant from Med-Legal Department
Background Information

- 2.5 Million pressure ulcers patients are treated in US healthcare facilities annually
- 60,000 US hospital patients die each year from complications associated with HAPU
- In 2006, there were 322,946 reported cases of Medicare patients with a PU as a secondary diagnosis
  - Each case had an average charge of $40,381
  - Annual total cost of $13 billion
Background Information

Skin Integrity National Database for Nursing Quality Indicators (NDNQI) data:

- 62% of HAPU surgical patients
- 81% of patients on vasopressors during hospitalization develop HAPU
- 29% HAPU developed within 48 hours
- 60% HAPU developed within 9 days
Background information

• Traditional PUs vs suspected deep tissue injuries (sDTI)

Outside to inside with Low Pressure
(Classic) Stage I
Fluid-filled blister
Stage II
Stage III or IV

Inside to Outside with High Pressure
DTI
Stage II with epidermal loss
Unstageable with eschar or blister

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Problem

A root cause analysis of HAPUs for 2011 revealed:
- 90% HAPUs started as sDTI
- All surgical patients
- Prolonged operative procedure lasted from 10 hours for a single case to 38 hours over two week period
- All sDTI progressed to Stage III or IV pressure ulcers
Root cause analysis

- Pt perfusion
  - Use of Vasopressor: 4 pts
  - Diastolic < 50 Spts: 4 pts
  - Edema: 4 pts
  - Septic: 3 pts

- Nutrition
  - BMI < 20: 3 pts
  - BMI > 30: 3 pts
  - Wt Loss > 2%: 5 pts
  - Prolonged NPO: 5 pts
  - Fluid Overload: 4 pts

- Patient Type
  - GI Surgery Care: 2 pts
  - ENT Surgery Care: 2 pts
  - Spinal Cord Injury: 2 pts
  - Multiple Trauma: 1 pt
  - Cardiac Surgery: 1 pt
  - Palliative Care: 2 pts

- PU type/location
  - Traditional PU: 1
  - 'sDNI: 9
  - Sacral PU: 10
  - Heel: 1

- Labs
  - Reduced Albumen: 7 pts
  - Reduced CRP: 2 pts
  - Low Hct: 7 pts
  - Abnormal INR: 3 pts

- Procedure
  - Procedure Duration: 10-35 hrs

- Procedure
  - UCDMC HAPU Rate
    - Graph showing rates over time:
      - FY 2008: 1.4
      - FY 2009: 2.0
      - FY 2010: 3.4
      - FY 2011: 1.9
      - FY 2012: 1.4
Purpose of The Project

To reduce HAPUs in the Perioperative Area
Previous Practice

- The use of a gel mattress and donut pillows
- No risk assessment or interventions were used for HAPU prevention
Interventions

- Root cause analysis results shared
- An informational power point and suggested interventions were presented
- Each incident was documented with photos and patient’s history
- A grid was completed to find out all shared risk factors
Interventions (continued)

- All operative tables and surfaces were pressure mapped
- Interventions were reviewed and tested
Interventions (continued)
Interventions (continued)

- Standardize perioperative documentation
- Identified a need for a Skin Risk Assessment Tool for surgical patients (Munro is not tested for validity/reliability)
- Develop a guide to identify patients at risk

**High Risk Inclusion Criteria:**

Apply Mepilex® Border Sacrum if patient meets any of the following criteria:

- Recent cardiac arrest
- Vasopressor Medications for 48 hrs
- SHOCK (septic, hypovolemic, cardiogenic, trauma patients, spine surgery, cardiac surgery, ICU patients)
- Past history of sacral/coccygeal pressure ulcer(s) (check for scarring)
- Current redness in sacral/coccygeal area
- Anticipated operative procedure or multiple procedures lasting more than 6 hours
- Quadriplegic, paraplegic, or hemiplegic
- Stroke, Paralysis

Apply Mepilex® Border Sacrum if patient meets 3 or more of the following criteria:

- BMI above 30 or below 20
- Weeping edema or anasarca
- Age 70 or older
- Diabetes
- Liver failure
- Renal failure
- Weight Loss of 5% in past two weeks (i.e., for 300 lb patient, 30 lbs is 10% and 15 lbs is 5%)
- Fecal or urinary incontinence not controlled by Fecal Management System or Foley Cath
- Prolonged bed rest longer than 4 hours AND patient unable to shift weight independently
Interventions (continued)

- Pressure redistribution cushions are used for each patient who has risk factors.
- Silicone foam dressings are applied to the sacral area of each high-risk patient to prevent friction and shear.
- Continue to search for proper OR table pressure redistribution surface.
Results

- A better understanding of the etiology, prevention and documentation of sDTI/HAPUs was acquired by OR nurses and physicians
- Assessment, documentation and interventions for sDTI/HAPU prevention are now in use in the perioperative area
- The perioperative QI nurses and wound care team continue to meet monthly to review progress
Plans

• Pressure mapping study of three different pressure redistribution OR surfaces

• In collaboration with UC Davis Betty Irene Moore School of Nursing develop and test a Skin Risk Assessment Tool for perioperative patients
Summary

Although culture change is slow in a closed environment like the perioperative area, through collaboration and education a positive change is possible.
Questions?

• [Email to Oleg Teleten]

• Or

• [Email to Holly Kirkland-Walsh]