

Research - R199

Poster

Abstract Title:

Cervical collar related Pressure Ulcers in Trauma Patients in Intensive Care: Risk Assessment and Prevention

Authors:

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Background & Purpose:

Cervical collars are life-saving and essential for cervical spine immobilization in trauma patients. However, application of cervical collars is not without risk. Previous studies have described cervical collar related pressure ulcers (CRPU). Pressure ulcers are serious complication and may develop in several hours due to pressure and shear. Trauma patients admitted to the intensive care unit (ICU) in a cervical collar are at risk for developing pressure ulcers. Study purpose was to identify the prevalence, occurrence and risk factors for CRPU and to determine plausible preventive interventions.

Study/Project Design:

Descriptive retrospective chart review

Setting:

Surgical and Trauma ICU of a Level 1 Trauma Center in New York City

Sample:

A convenience sample of 88 adult trauma patients in cervical collars admitted to the Surgical and Trauma ICU

Procedures:

In 2007, two interventions were implemented to prevent CRPU; early cervical collar removal by optimized diagnostic procedures and use of occipital foam ring to relieve pressure. Charts of adult trauma patients admitted to the ICU in a cervical collar before and after implementation of interventions (2006 and 2008) were screened for inclusion. Patients with preexisting pressure ulcers, severe burn wounds or discharged within 24 hours were excluded. Data collection included patients' characteristics, pressure ulcer occurrence, severity and risk factors. Risk factors involved: friction and shear, nutritional status, general health status, body temperature, skin perfusion, oxygenation, skin condition, age, consciousness and sensory perception. The study was approved by the hospital IRB..

Findings/Results:

The incidence of CRPU was 3.4 %. Severity was stage 3 and 4. CRPU were located on the chin and occiput and first documented on day 12, 26 and 32 of admission. Two patients were admitted in 2008. The number of ventilated patients ($p = 0.03$) and RTS scores < 11 ($p = 0.03$) were significantly higher in 2008. Significant risk factors for CRPU development were not found due to the low incidence. A subgroup of 18 patients was discharged in a cervical collar. From these, three patients developed CRPU. Within this subgroup, differences were found in the length of stay, in a cervical collar, mechanical ventilation, and sedation compared to patients without CRPU. All patients (2006 and 2008) were turned every 2 hours on a pressure relieving mattress and regularly assessed for skin condition, nutritional status, and pressure ulcer risk and. The influence of preventive interventions on CRPU occurrence could not be established

Discussion/Conclusions/Implications:

Study results show an incidence of 3.4 % and a late appearance of CRPU in trauma patients. Previous studies showed higher incidences and earlier CRPU appearance. The study results might have been influenced by the interventions at this agency or by the limitations of a retrospective design, where the documentation is often lower than the true clinical picture and incomplete documentation limiting the inclusion of all variables. Despite these limitations the study is clinically significant and adds to the body of knowledge of CRPU in trauma patients