Relationship between pressure ulcer, oxygenation and hemodynamic status in mechanically ventilated patients in intensive care units

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Abstract

Aim and background: Pressure ulcer (PU) still remains a major problem particularly in critical care units despite of developments in healthcare systems and ongoing investments of preventing PU. This study was aimed to investigate the relationship of PU with the level of oxygenation and hemodynamic status in mechanically ventilated patients.

Design and methods: This correlational study conducted with 120 in patients admitted to critical care units of one of the hospital affiliated to Tehran University of Medical Sciences (TUMS). Subjects were selected through consecutive sampling method from February 2012 to August 2012. Hemodynamic and oxygenation data were collected from the patients’ document and the observation sheets. Patients’ skin was daily assessed for developing PU. Collected data were imported into the SPSS software and analyzed using independent t-test, chi-square and logistic regression.

Results: Stage I of PU was developed in 35.8% of the subjects. There was no significant linear correlation between hemodynamic and oxygenation variables with the development of PU. However developing PU had relationship with duration of mechanical ventilation (14.7±9.1d), patients’ age (64.8±16.2) and the level of consciousness (8.6±0.9).

Conclusions: Patients who are receiving mechanical ventilation have more chance for developing PU and nurses should apply preventing measures as soon as possible for such patients. Age, duration of mechanical ventilation and GCS recommend to use a reliable predictors to identify high risk patient in the critical care units.

Key words: pressure ulcer, mechanically ventilated patients, oxygenation, hemodynamic status