

BACKGROUND

Hospital acquired conditions (HAC) occur at a rate of over 2.5 million cases every year and have significant impact on patient outcomes in terms of increased pain and risk of infection.¹ Hospital acquired pressure injuries (HAPI) specifically require increased attentiveness to wound care needs, on top of additional health care costs averaging \$151,700.^{2,3}

Trends for HACs have been on the decline, in part, due to quality measures enforced in 2008 by the Centers for Medicare and Medicaid that withhold reimbursement for costs related to HACs.⁴ An exception is with HAPIs, with rates as high as 45% seen in the intensive care unit (ICU).^{3,5}

Though HAPIs are not completely avoidable, there are potentially modifiable risk factors such as vasopressor use. Vasoactive medications work by stimulating peripheral vasoconstriction, thereby maintaining perfusion to vital organs but decreasing blood flow to the periphery.⁶ Thus, it is essential to establish a balance between hemodynamic stability and adequate peripheral tissue perfusion.

Cox and colleagues demonstrated that norepinephrine use, regardless of dose, was associated with an increased incidence of HAPIs.⁷ Longer duration of administration and doses greater than 15.1 mcg/min were found to have the highest rates. Also, Bly and colleagues discovered that there was a higher incidence of HAPIs with use of more than one vasopressor.⁸

OBJECTIVE

To evaluate the association of high dose vs. low dose vasopressor use and the incidence of HAPIs in critically ill patients admitted to a medical ICU.

DEFINITIONS

Dosing classifications:

Norepinephrine:

- Low dose: 0.01-0.20 mcg/kg/min
- High dose: 0.21-0.45 mcg/kg/min

Epinephrine:

- Low dose: 0.01-0.20 mcg/kg/min
- High dose: 0.21-0.45 mcg/kg/min

Phenylephrine:

- Low dose: 1-149 mcg/min
- High dose: 150-260 mcg/min

Pressure injury severity: national pressure injury advisory panel (NPIAP) staging criteria

High vs. low dose: category will be determined based on the highest titration patient received during administration

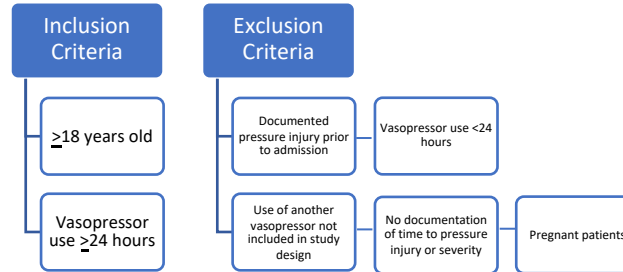
Average dose: mean dose received over total time of vasopressor administration

Multiple vasopressor use: use of at least one additional vasopressor for a minimum of 6 hours

Pressure injury location: ankle/heel, head, shoulder, elbow, sacrum, knee, and hip

METHODS

This is a retrospective, observational, single-centered study including patients receiving a vasopressor for at least 24 hours from January 2017 through December 2019.



OUTCOMES

Primary Outcome

- Rate of HAPIs in patients admitted to a medical ICU and receiving one or more higher or low dose vasopressors for ≥24 hours
- Subgroup analysis by vasopressor type

Secondary Outcomes

- Incidence of HAPIs and total number of vasopressors required
- Time above a MAP goal of 65 mm Hg before titration off vasopressor
- Time to pressure injury documentation from start of vasopressor administration
- Severity of pressure injury
- Average total time on a vasopressor
- Location of the pressure injury

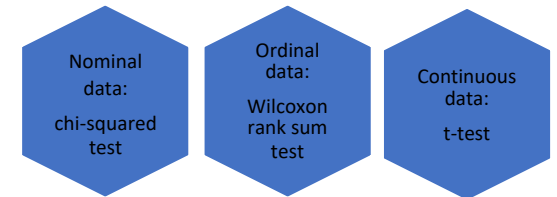
DATA COLLECTION

Demographics	Vasopressor data	Pressure Injury data
<ul style="list-style-type: none"> • Age • Gender • Actual body weight • Height • BMI • Comorbidities: <ul style="list-style-type: none"> ◦ heart failure, peripheral vascular disease, anemia, diabetes, chronic obstructive pulmonary disorder, chronic kidney disease 	<ul style="list-style-type: none"> • Vasopressor type • Total time vasopressor administered • Dose received <ul style="list-style-type: none"> ◦ average and highest dose • MAP measurements • Mechanical ventilation requirements 	<ul style="list-style-type: none"> • Time to identification • Location • Severity score

DATA COLLECTION

Data will be collected utilizing an observational chart review process of the electronic medical record of patients admitted to the medical ICU and requiring vasopressor support for a minimum of 24 hours. All data reviewed will have patient identifiers removed in correlation with HIPAA standards so that patient privacy is not invaded.

STATISTICAL ANALYSIS



The criterion for significance is set at an *a priori* value of $p \leq 0.05$. Data will be analyzed using SPSS Statistics Software.

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DISCLOSURES

The authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities:

No authors have any disclosures.