

COMPARISON OF NOREPINEPHRINE DOSING STRATEGIES

Background

- Norepinephrine (NE) is recognized as a high-alert medication by the Institute for Safe Medication Practices
- Dosing strategies used in practice lack standardization with both weight-based dosing (WBD, i.e., mcg/kg/min) and non-WBD (i.e., mcg/min) being utilized
- Current literature does not identify a superior dosing strategy and there is little evidence to support either practice
- Determining an optimal strategy of norepinephrine dosing is important in order to ensure efficacy while minimizing adverse effects associated with higher vasopressor doses

Objective

- To compare the effect of norepinephrine dosing strategies on time to goal mean arterial pressure in intensive care patients

Methods

- Single center, IRB-approved, retrospective chart review pre and post June 2018 protocol revision from non-WBD to WBD of norepinephrine

Primary Outcome

- Time to goal MAP

Secondary Outcomes

- Cumulative NE dose
- Maximum NE infusion rate
- Use of second vasopressor
- Length of stay

Weight-based norepinephrine dosing may decrease time to goal MAP

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RESULTS

Table 1. Vasopressor Characteristics

	WBD n=14	Non-WBD n=8	P-value
Cumulative NE dose (mg)	14 (6-44)	91 (36-198)	0.035
Maximum NE infusion rate (mcg/min)	30 (10-64)	35 (20-50)	0.920
Average NE infusion rate (mcg/min)	6 (3-26)	9 (6-18)	0.664
Total NE Duration (days)	1.5 (0-4.25)	3 (2.3-13.8)	0.441
Use of second vasopressor	5 (36%)	6 (75%)	0.076

All values presented as Number (%) or Median (Interquartile Range)

Table 2. Demographics

	WBC n=14	Non-WBD n=8	P-value
Age (years)	67 (54-75)	68 (49-71)	0.815
Weight (kg)	91 (80-113)	82 (62-103)	0.365
Height (m)	1.78 (1.64-1.81)	1.68 (1.63-1.72)	0.212
BMI	29 (24-43)	27 (24-35)	0.664
Obese BMI	5 (36%)	3 (38%)	0.984
Male Gender	9 (64%)	4 (50%)	0.512
Caucasian Race	12 (86%)	7 (88%)	0.907

All values presented as Number (%) or Median (Interquartile Range)

RESULTS CONTINUED

Table 3. Co-morbidities and Organ Dysfunction

	WBD n=14	Non-WBD n=8	P-value
Coronary Artery Disease	3 (21%)	2 (25%)	0.848
Congestive Heart Failure	6 (43%)	1 (13%)	0.141
COPD	3 (21%)	1 (13%)	0.729
Liver dysfunction	3 (21%)	0 (0%)	0.371
Kidney dysfunction	3 (21%)	2 (25%)	0.505
CRRT	2 (14%)	1 (13%)	0.907
Baseline organ dysfunction	9 (64%)	1 (13%)	0.019
SOFA score	9 (6.75-11.75)	13.5 (11.25-15)	0.013
Lactate, baseline	1.85 (1.08-4.28)	3.45 (1.53-7.38)	0.157

All values presented as Number (%) or Median (Interquartile Range)

Figure 1. Time to Goal MAP in minutes, p=0.031

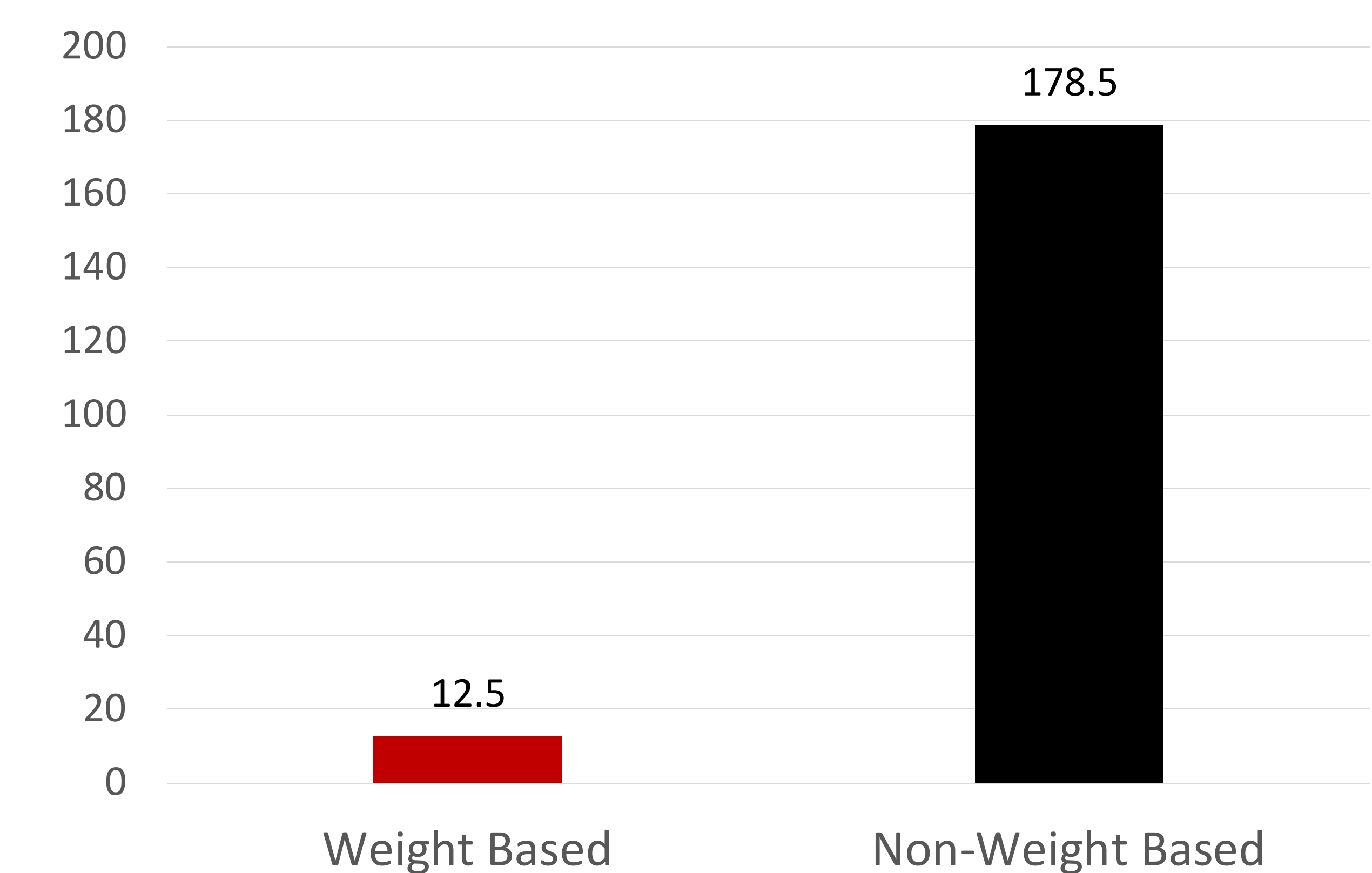


Table 4. Preliminary Clinical Outcomes

	WBD n=14	Non-WBD n=8	P-value
ICU length of stay (days)	3 (2-8)	9 (3-14)	0.050
Hospital length of stay (days)	6 (3-14)	13 (4-24)	0.145
Mortality	6 (42%)	5 (63%)	0.375
Mechanical ventilation	11 (79%)	8 (100%)	0.159
Vent free time (days)	17 (0-25.75)	0 (0-17.75)	0.297

All numbers presented as Number (%) or Median (Interquartile Range)

NEXT STEPS

- Data collection is currently still underway with an anticipated enrollment of 250 patients
- Multiple linear regression will be applied to the primary outcome to control for differences in severity of illness and other potential confounders

ACKNOWLEDGEMENTS

Supported by the National Center for Advancing Translational Sciences (NCATS) of the National Institutes of Health (NIH) under Award Numbers UL1TR002378 and KL2TR002381



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