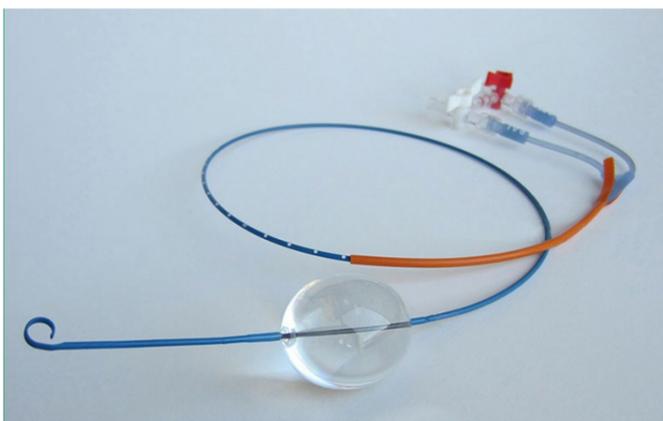


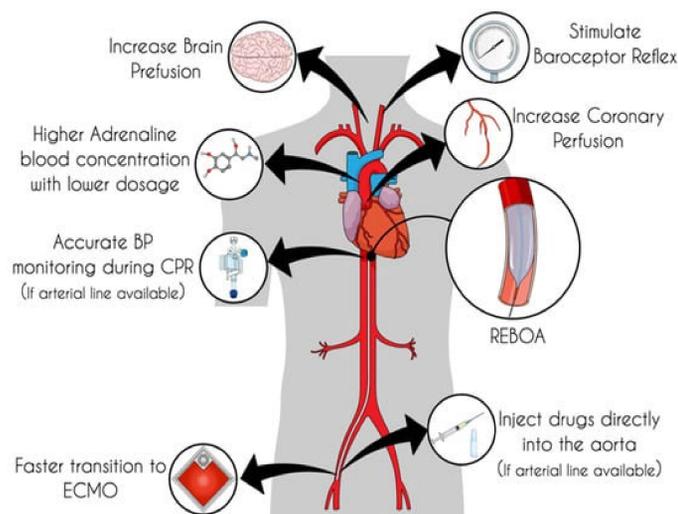
Introduction

Background

Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) is an adjunct tool to achieve hemostasis in trauma patients with non-compressible torso hemorrhage. Prior research has shown that obese trauma patients have increased mortality and morbidity compared to their non-obese counterparts.



(REBOA Catheter)



(REBOA Physiology Graphic)

Hypothesis

The primary aim of this study was to compare the rates of survival and REBOA complications in obese and non-obese patients.

Methods

A retrospective chart review of adult trauma patients who underwent REBOA placement between September 2017 to July 2023 was performed. Baseline demographics, Body Mass Index (BMI), information of REBOA placement, and post procedure complications including Acute Kidney Injury (AKI), amputations, and mortality were recorded. Chi-squared analyses were performed with $p < 0.05$ considered to be significant.

Demographics

	pREBOA n= 15	ER REBOA n= 53	P value
Demographics			
Age, avg (SD)	38 (13.8)	44.7 (16.1)	0.1
Male Gender, n (%)	11 (73.3)	36 (67.9)	0.7

Mechanism of Injury

	pREBOA n= 15	ER REBOA n= 53	P value
Mechanism of Injury			
ISS, avg (SD)	24.55 (12.9)	28.2 (16.2)	0.4
Penetrating Mech, n (%)	1 (6.7)	9 (17.0)	0.3
Gunshot Wound, n (%)	1 (6.7)	9 (17.0)	0.5
MVC, n (%)	9 (60.0)	19 (35.8)	0.5
MVC vs. Pedestrian, n (%)	4 (2.7)	14 (26.4)	0.5
Other, n (%)	1 (6.7)	11 (20.8)	0.5

Clinical Outcomes

	pREBOA n= 15	ER REBOA n= 53	P value
Clinical Outcomes			
AKI, n (%)	1 (6.7)	18 (34.0)	0.04
Amputations, n (%)	1 (6.7)	2 (3.8)	0.6
Length of Stay, avg (SD)	33.7 (40.7)	20.9 (19.5)	0.1
Died, n (%)	4 (26.7)	14 (26.4)	1

Results

A total of 73 patients met inclusion criteria. Underweight patients made up 2.7% (BMI < 18.5), 20.5% of patients were healthy weight (BMI 18.5 – 24.9), 28% of patients were overweight (BMI 25.0 – 29.9), and 47.9% of patients were obese (BMI >30.0). The survival rate of obese patients was 68.6% compared to 65.8% of their non-obese counterparts ($p=0.8$). There was no significant difference between rates of AKI in obese and non-obese patients at 31.1% and 28.9% ($p=0.5$). The rate of dialysis was 8.6% for obese patients and 7.9% for non-obese patients ($p=0.9$). When comparing obese and non-obese patients' amputation rates were 8.5% and 10.5% respectively ($p>0.8$). One (2.8%) obese patient and four (10.5%) non-obese patients had rhabdomyolysis ($p>0.2$).

Conclusion

The results from this case series suggest that there is no increase in risk with REBOA use in obese hemorrhagic trauma patients. There were no significant differences in rates of survival, rhabdomyolysis, amputations, AKI, or dialysis when comparing obese and non-obese trauma patients. Future prospective studies are needed to further characterize the indication and optimal use for REBOA in obese patients.