

## INTRODUCTION

Higher shock index (SI) values of >0.9 have been associated with higher mortality rates and the need for increase blood product transfusions in trauma patients. Damage control surgery (DCS) is an intervention that improves survival rates in patients with exsanguinating trauma and hemodynamic instability. On the other hand the delay for the identification and treatment of a patient with normal vital signs and poor oxygenation/perfusion secondary to trauma bleeding who require DCS is catastrophic.

The ability of SI to identify those that require damage control surgery (DCS) among patients with penetrating trauma remains unknown

## OBJECTIVES

The objective of our study was to identify a possible SI cutoff number that could reliably predict the need for DCS in penetrating trauma patients.

## METHODS

A retrospective 10-year study (2005 – 2015) which included all adult patients that suffered penetrating torso trauma at a Level I Trauma Center. The SI was calculated upon admission and patients were divided into two groups: those that required DCS and those that did not (No-DCS). A 95% Confidence Interval for the Area Under a Receiver Operating Characteristic Curve (AUROC) was used to determine the accuracy of SI in detecting patients that would require DCS.

## RESULTS

A total of 734 patients were included, 92.3% were male and 80% suffered gunshot wounds. The DCS group had a total of 316 (43%) patients and the No-DCS group had 418 (57%). The demographics variables are summarized in table 1.

## REFERENCES

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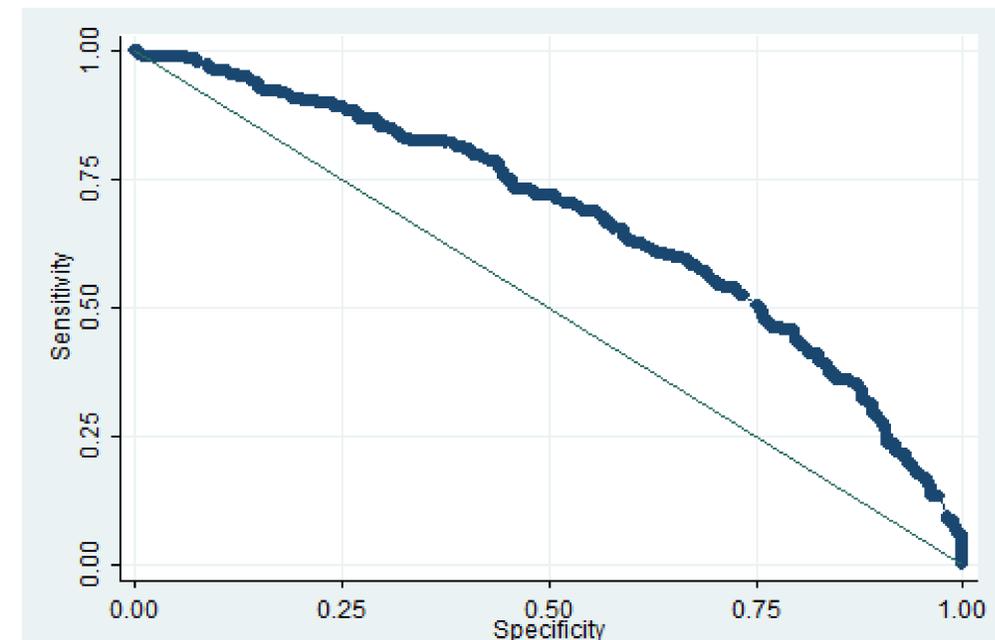
Table 1. Penetrating trauma patient's baseline characteristics

	DCS n= 331	No-DCS n=416	p value
Age, median [IQR]	27(22-36)	27(21.5-37)	0.983
Gender, n (%)			
Male	306(92.45%)	384(92.31%)	0.912
Trauma Mechanism, n (%)			
Gunshot wounds	288(87%)	309(74%)	<0.0001
Stab wounds	35(11%)	102(25%)	<0.0001
Explosion	7(2%)	4(1%)	<0.442

DCS; Damage Control Surgery, IQR; Interquartile Range

Mean SI values were higher in the DCS group (1.05 [0.79-1.5]) compare to the No-DCS (0.78[0.64-1.00]) (p=0.0001).

The AUROC was 0.69 [95% CI 0.66-0.73]. When a 0.9 SI cutoff point was used, it accurately classified 64.7% of patients who required DCS with sensitivity (Se) of 63.2%, specificity (Sp) of 65.8% and a false negative rate of 36.7%; thus not accurately differentiating the need for DCS.



## Conclusiones

In this study we search a simple measure to predict the requirement of DCS with the aim of reducing the time of decision to perform DCS.

We have shown that SI can be indicative to some degree of the need for DCS in patients suffering penetrating torso trauma but a specific cutoff point that can precisely predict this need is statically unobtainable.