

# DAMAGE CONTROL RESUSCITATION AND DAMAGE CONTROL SURGERY (DCR/DCS): ASSOCIATED FACTORS OF MORTALITY IN PENETRATING TRAUMA

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## Introduction

Damage Control Resuscitation and Damage Control Surgery (DCR/DCS) has become the primary treatment model of care for patients with life-threatening traumatic injuries, such as exsanguinating abdominal trauma and penetrating torso trauma. The aim of this study was to identify the risk factors related to mortality in patients with penetrating torso trauma (PTT) who underwent a DCR/DCS.

## Methods

- **Design and Settings:** A Cross sectional study at a regional level I Trauma Center conducted between January, 2001 and December, 2013.
- **Subjects:** All adult patients (Age ≥16) who had suffered a PTT and underwent DCR/DCS to manage their injuries were included. Pregnant and associated head trauma patients were excluded.
- **Statistical Analysis:** A logistic regression model was utilized to identify the risk factors associated with an increase mortality within this population. Continuous variables were described as medians and interquartile range (IQR) and (p) values were statistically significant at p<0.05.

## Results

**Table 1. Demographics and Injury Characteristics (n= 340)**

<b>Age, median (IQR)</b>	27 (22,5 - 36)
<b>Male, n(%)</b>	315 (92,3)
<b>Injury mechanism, n(%)</b>	
Gunshot wound	300 (88,2)
<b>Injured organs, n(%)</b>	
Small bowel	144 (42,4)
Colon	133 (39,2)
Major vessels	123 (36,2)
Liver and Bile duct	120 (35,4)
Estomach and duodenum	99 (29,2)
Diaphragm	85 (25)
Lungs	72 (21,1)
<b>Severity scales, Median (IQR)</b>	
NISS	34 (21,5 - 49,5)
ISS	25 (16,5 - 30,5)
RTS	7,54 (5,5 - 7,8)

**Table 2. Mortality Risk Factors among patient with PTT with DCR/DCS**

Risk factor	OR	CI 95%	p value
ISS ≥25	1,04	1,01 - 1,07	0,001
Major vascular injury	2,64	1,4 - 4,9	0,002
Gunshot wound	1,56	1,4 - 23	0,02

**Table 3. Mortality (n= 340)**

<b>Mortality overall rate, n(%)</b>	67 (19,8)
< 24 hours	36 (53,7)
1-27 days	31 (46,2)
<b>Mortality by mechanism, n(%)</b>	
Gunshot wound (n= 300)	64 (21,3)
Stab wound (n= 40)	3 (7,5)
<b>Mortality by injury, n(%)</b>	
With major vascular injury (n= 100)	36 (36)
With no major vascular injury (n= 240)	31 (12,9)
<b>Cause of death, n(%)</b>	
Coagulopathy	36 (53,7)
Multi-organ failure	21 (31,3)
Sepsis	10 (14,9)

## Conclusions

PTT patients that require DCR/DCS have a higher mortality if they have the following associated factors: an ISS ≥25, a major vascular injury and/or a mechanism of injury by gunshot wound.