



# BREAST TRAUMA: AN ANALYSIS OF THE NATIONAL TRAUMA DATABASE

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## Introduction

- Breast trauma is often under recognized injury especially in female polytrauma patients and can be a clinically relevant source of bleeding leading to significant morbidity such as hemorrhagic shock.
- Reports have shown that 17% of patients with breast hematomas require interventions ranging from multiple blood transfusions to angioembolizations.
- Single center trauma center study indicated an association between female blunt breast trauma with an elevated injury severity score (ISS).
- **Aim of this study:** To conduct a retrospective review of the national trauma database (NTDB) to assess the prevalence of breast injuries and their association with ISS in trauma patients.

## Materials and Methods

**Study Type:** Retrospective review

**Inclusion Criteria:** Trauma patients from 2016-2019 using all applicable ICD codes for 3 outlined subgroups:

- Abrasions
- Contusions
- Open wounds/punctures/lacerations

**Exclusion Criteria:** Trauma patients before 2016 and after 2019 and minor injuries that did not qualify for the categories listed above were excluded

**Statistical analysis:**

- All continuous variables tested as non-normally distributed.
- All test results for continuous variables used Kruskal-Wallis test.
- All categorical variables were tested using chi-squared test

## Results

- Patients with abrasions and contusions had a higher incidence of ICU stays (23.8% and 25.3%, respectively) compared to patients with open wounds/punctures/lacerations (13.6%)
- Patients with abrasions and contusions to the breast are more likely to have a significantly higher ISS score compared to those with visible open wounds/punctures/lacerations (9.00 vs 5.00,  $p < 0.001$ )

	level	abrasion	contusion	open wound/punctuati on/laceration	P value
n		1675	193	1520	
age		38.00 [26.00, 55.00]	47.00 [31.00, 62.00]	34.00 [26.00, 47.00]	<0.001
sex (%)	Female	1210 (72.3)	165 (85.5)	1099 (72.3)	<0.001
	Male	464 (27.7)	28 (14.5)	421 (27.7)	
ed.disp (%)	Deceased	156 (9.4)	15 (7.9)	100 (6.6)	<0.001
	Home	153 (9.2)	11 (5.8)	229 (15.2)	
	Hospital	719 (43.2)	83 (43.7)	499 (33.2)	
	ICU	<b>395 (23.8)</b>	<b>48 (25.3)</b>	<b>205 (13.6)</b>	
	Operating Room	188 (11.3)	27 (14.2)	420 (27.9)	
	Other	9 (0.5)	1 (0.5)	24 (1.6)	
	Transferred	43 (2.6)	5 (2.6)	28 (1.9)	
mortality (%)	No	1227 (85.2)	147 (86.5)	1064 (89.0)	0.017
	Yes	213 (14.8)	23 (13.5)	132 (11.0)	
ISS score		<b>9.00 [5.00, 14.00]</b>	<b>9.00 [5.00, 17.00]</b>	<b>5.00 [1.00, 14.00]</b>	<b>&lt;0.001</b>

## Conclusions

- Patients who have multiple injuries, especially those in the ICU and those with high ISS, have the potential for missed injuries including breast hematomas
- All patients with clinically relevant mechanisms should be evaluated for breast trauma on tertiary survey to minimize missed injuries and subsequent increased morbidity



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