

주최·주관 대한심장혈관흉부외과학회

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제56차 추계학술대회

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Survival outcomes by trauma scoring system for chest trauma patients: a single center cohort study

- Chest trauma is the third most common cause of death after head and abdominal injury in trauma patients.
- Several trauma scoring system have been developed to predict the outcomes of severe injury to be used in multiple trauma patients.
- However, study on a scoring system that accurately reflects chest injuries is not common.
- The purpose of this study is to analysis previous prediction systems and verify their accuracy for thoracic injuries.

- January 1, 2017 – December 31, 2023 (7 years)
- Single regional trauma center
- Retrospective study based on Korean Trauma Data Base (KTDB)
- Survival versus non-survival.
- Primary outcome: in-hospital mortality.
- Demographic data, vital sign, GCS, trauma scoring system, abbreviated Injury scale (AIS), injury severity score (ISS), revised trauma score (RTS), trauma injury severity score (TRISS), transfusion and survival outcomes of all the patients were reviewed.

- Total patients = 12,985
- Chest trauma = 3,124, Survival rate = 11.2% (n=349)
- Severe chest trauma = 1,964 , Survival rate = 15.2% (n=299)
- Missing data = 226, respiratory rate (RTS & TRISS)
- During the study period, mortality decreased from 15.6% to 9.8%, and when the preventable death rate was adjusted, it further decreased from 11.9% to 6.5%.
- The AIS for chest trauma was 3 points, and the ISS was around 19 points, with no significant change in severity during this period.

Results II

Variables	Total	Survival (n = 2,775)	Non-survival (n = 349)	p-value
Age	60±18.97	57±18.80	60.9±19.5	0.002
GCS	13.01±4.06	13.8±3.02	6.6±4.98	0.001
Blunt trauma	3,003	2,665 (96%)	338 (96.8%)	0.71
AIS	2.81±0.80	2.78±0.78	3.06±0.81	p < 0.001
ISS	18.4±9.3	17.5±8.4	26.4±11.9	p < 0.001
RTS	7.37±1.20	7.48±0.74	6.01±2.13	p < 0.001
TRISS (%)	91.2±8.84	92.9±11.32	9.5±6.82	P<0.001
sBP (mmHg)	106.02±38.02	110.9±30.67	60.2±54.71	P = 0.001
RBC transfusion < 4 h. (pack)	0.91±2.42	0.70±3.61	4.30±5.23	P <0.001

Variable	Odds ratio	95% CI	p-value
GCS	0.7788	0.7565 to 0.8018	<0.001
ISS	1.0203	1.0029 to 1.0380	0.022
sBP	0.9860	0.9826 to 0.9895	<0.0001
RBC transfusion	1.1679	1.1155 to 1.2229	<0.0001



- In this study, it was confirmed that there was no difference in prognosis for patients with chest trauma depending on the chest AIS.
- Among the variable factors, survival rate was correlation with GCS, ISS, sBP and transfusion.
- There was no statistical difference in survival rate was not correlation with physiologic factors RTS and TRISS.
- However, these results have controversial issues that reflecting missing data because the respiratory rate could not be checked in patients transferred from other hospitals.
- TRISS are proven to be the most powerful trauma prediction score systems in the previous studies, but due to domestic characteristics, a Korean system that overcomes this should be developed.