

Category : **Polytrauma**

A22 - D-dimer levels at the time of admission to hospital as predictor of outcome in trauma patients. A prospective observational study

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Introduction:

Trauma causes a state of hypercoagulability, and its presence is common early in the injury course. D-dimer (DD) easily measured and considered a good screening tool of coagulation activation. Its increase amount in plasma is a reflection of the extent of hyper coagulopathy. Hence, in trauma, measuring DD levels may be helpful in providing useful prognostic information. So, our study tried to find whether DD levels at the time of admission can be a predictor to the outcome of patients.

Methods:

This prospective observational study involved 205 adult patients of age group 18-60yrs coming to trauma emergency within 24 hrs of injury and blood samples collected within this period. The primary outcome was to assess whether DD levels at the time of admission predicts outcome. Association of DD levels with injury severity score (ISS), with blunt or penetrating trauma, time from injury to admission (TIA), and to hospital stay were secondary outcomes. Value of DD > 250 ng/ml were considered elevated. For ease of statistical analysis, patients were divided into two groups - ISS < 16 and ISS ≥ 16. We also divided the patients on basis of TIA; within 6 hours and more than 6 hrs of injury.

Results:

The DD level were significantly high in patient who died then those who were discharged. [1316.28 (384.5,3331.18) vs 498.03(140,693), p-0.041].(Figure1) Blunt trauma victims had significant high levels than penetrating [1280(565,3377) vs 162(82,526), p-0.001]. ISS < 16, TIA < 6hrs and hospital stay had lesser DD levels but of no significant difference. Plotting a ROC of D-dimer values, a cut-off value of 1793.35 was calculated (sensitivity-0.72; specificity-0.4) and on its basis hospital stay was compared. There was no statistically significant difference

Conclusion:

Our study found that high DD levels at admission among non survivors. Similarly, blunt trauma had increased levels than penetrating trauma victims. Hence, DD values at admission can be a useful screening tool to predict outcome.

Image :

Table 1: Shows D-dimer levels among death and discharge patients, in relations to ISS, type of injury, time to injury and hospital stay

D-dimer levels	Median (Q ₁ , Q ₃)	p-value*
Outcome		
Death (n=22)	1316.28 (384.5,3331.18)	0.041
Discharge (n=183)	498.03 (140,693)	
Injury severity score (ISS)		
<16 (n=139)	1001 (304,2337)	0.105
>16 (n=66)	1438 (458,10936)	
Type of injury		
Blunt(n=181)	1280 (565,3377)	0.001
Penetrating (n=24)	162 (82,526)	
Time to injury		
< 6 hours(n=105)	900 (209,4963)	0.561
>/= 6 hours(n=100)	1353 (571,3010)	
Hospital stay		
< 1793.35 (n=116)	8 (4,17)	0.396
>/= 1793.35(n=89)	10 (5,19)	

*Mann-Whitney U test; p<0.05 is significant

Shows D-dimer levels among death and discharge patients, in relations to ISS, type of injury, time to injury and hospital stay