ASSESSING TRAUMA CARE THROUGH ASSISTANCE TIMES AND EVOLUTION INDICATORS: A CROSS-SECTIONAL ANALYSIS

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PURPOSE

Assess quality of care and prognosis of trauma patients through 3 assistance times: time from arrival to hospital to revision by medical team, time from arrival to imaging techniques, and time from arrival to patient endpoint; and 2 evolution indicators: hemodynamic instability between arrival at emergency department and 10 minutes from arrival, and hemoglobin worsening between blood test at arrival and the second blood test at emergency department.

METHODS

Participants in this cross-sectional study were 538 individuals attended under activation of Polytraumatic Patient (PPT) code in Hospital del Mar in Barcelona, between October 2020 and October 2021. Between October 2020 and February 2022 data was completed to a prospectively maintained database from hospital data records, subsequently at the hospital discharge.

RESULTS

In a group with low-severity (ISS<15 487 [90.5%]) and low-priority (priority 2-3 468 [87%]) profile, with and extremely low mortality (9 [1.7%]), no significative associations between in-hospital assistance times or evolution indicators, mortality, complications or length of hospital stay, were found.

Associations between covariates -5 indicators and outcomes

	Exitus			Days of hospitalization		
	No	Yes	P	<24h	>24h	P
	(N=529)	(N=9)		(N=417)	(N=121)	
Age			<0,001			0,001
Median (RIQ)	36(26-47)	63 (56-89)		35(26-46)	39(29-55)	
Priority			0,003			<0,001
High (0-1)	65 (12,3%)	5 (55.6%)		35 (8,4%)	35 (28,9%)	
Low (2-3)	464(87,7%)	4 (44.4%)		382 (91,6%)	86 (71,1%)	
Stability			<0,001			0,027
Unstable	21 (4%)	5 (55,6%)		15 (3,6%)	11 (9,1%)	
Stable	508 (96%)	4 (44.4%)			110 (90,9%)	
ISS			<0,001			<0,001
<15	484 (91%)	3 (33.3%)		403 (96,6%)	84 (69,4%)	
16-24	28 (5,3%)	1 (11.1%)		8 (1,9%)	21 (17,4%)	
>25	17 (3,2%)	5 (55.6%)		6 (1,4%)	16 (13,2%)	
RTS			<0,001			<0,001
4 to 10	16 (3%)	4 (50%)		10 (2,4%)	10 (8,3%)	
11	16 (3%)	3 (37,5%)		8 (1,9%)	11 (9,2%)	
12	494 (93,9%)	1 (12,5%)		396 (95,7%)	99 (82,5%)	

Associations between covariates-5 indicators and outcoms

	Clavien-Dindo		
	Low severity 0-II (N = 504)	High severity IIIa-V (N = 34)	p
Age			0,001
Median (RIQ)	35 (26-47)	48 (33-71)	
Priority			<0,001
High (0-1)	55 (10,9%)	15 (44,1%)	
Low (2-3)	449 (89%)	19 (55,9%)	
ISS			<0,001
<15	473 (93,8%)	14 (41,2%)	
16-24	23 (4,6%)	6 (17,6%)	
>25	8 (1,6%)	14 (41,2%)	
RTS			<0,001
4 a10	10 (2,%)	10 (31,3%)	
11	16 (3,2%)	3 (9,4%)	
12	476 (94,8%)	19 (59,4%)	

Associations between covariates-5 indicators and outcoms

	Death			Clavien-Dindo			Days of hospitalization		
	No	Yes	P	Low Sev. 0-II	High sev. IIIa-V	p	<24h	>24h	P
	(N=529)	(N=9)		(N=504)	(N=34)		(N=417)	(N=121)	
Review time.	3 (2-6)	3 (2-4)	0,937	3 (2-6)	4 (2-5)	0,150	3 (2-6)	3 (2-5)	0,231
Imaging time	14 (8- 21)	19,5 (6-23)	0,719	14 (8-21)	15,5 (7,5-23,5)	0,429	14 (8-21)	12 (7-19)	0,055
End point time	400 (253-650)	145 (95-175)	<0,001	402,5 (262-651)	1690 (72-592)	<0,001	407,5 (291-612)	257 (129-731)	0,001

CONCLUSIONS

- ISS (Injury Severity Score), RTS (Revised Trauma Score) and hemodynamic instability continue to be indicators of prognosis and severity.
- The time of care may not be a great prognostic factor in a center like ours because we are already below the threshold of mortality, complications and days of hospital stay.
- Using acute times of care in polytraumatics in high-volume centers does not demonstrate a significant association with final prognosis and studies that should be considered longer time measures, especially those that include non-acute time and hospital stays after critical care.

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