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Introduction:

Little is known about HAI in severe trauma patients admitted to ICU [1,2]. We aimed to describe the prevalence of infections in this specific subgroup of patients, the pathogens most frequently isolated, the time from ICU admission to HAI development

Methods:

A retrospective cohort study was performed at the II Level Trauma Center of the San Camillo Hospital in Rome. We included adult patients admitted to ICU between June 2019 and June 2020 with severe trauma (Injury Severity Score > 20), with no infection and no antibiotic therapy at admission. Cultures performed during ICU stay were analyzed.

Results:

A total of 142 patients met the inclusion criteria. 95 patients (66.90%) presented HAI during ICU stay. Demographic characteristics of the infected and no infected group are presented in table 1. 82 patients (86.3%) presented microbiological isolation in endotracheal aspirates (Klebsiella spp 35.36%, Staphylococcus spp 34,14%, Pseudomonas spp 31,70%), 65 patients (68.4%) in blood cultures (Staphylococcus coagulase negative 67,69%, Klebsiella spp 24,61%, Acinetobacter spp 10,76%), and 16 patients (16.8%) in physiologically sterile liquid (Staphylococcus coagulase negative 43%, Staphylococcus aureus 25%, fungi 25%). Rectal swab was positive in 20 patients (21%). Mean time from ICU admission to HAI development was $4,75 \pm 3$ days ($5,2 \pm 3,3$ for respiratory infections, $8,3 \pm 5$ for blood infections, $4,2 \pm 2,7$ for sterile liquid infections).

Conclusion:

Due to its complex pathophysiology and management, trauma is a major risk of HAI. The incidence of HAI, mainly caused by Gram negative pathogens, in severe trauma patients can be high. Knowing ICU ecology and adopting specific preventive measure may help reducing HAI development and improving trauma patients outcome.

References:

1. Major JS. Intensive Care Soc. 2015 Aug;16(3):193-198
2. Eguia E. Am J Surg. 2019 Nov;218(5):851-857

Table:

	Total population (n = 142)	Infected Group (n = 95)	No infected Group (n = 47)
Male sex n (%)	109 (76.8%)	77 (77.9%)	35 (74.5%)
Age (mean \pm DS)	49.4 \pm 17.4	50 \pm 17.1	48.2 \pm 18.2
ISS (mean \pm DS)	39.7 \pm 14.7	41.8 \pm 13.3	35.3 \pm 14.3
ICU length of stay (mean \pm DS)	16.7 \pm 14.4	20.7 \pm 15.5	8.6 \pm 6.4
ICU mortality n (%)	10 (7%)	8 (8.4%)	2 (4.2%)

Demografic characteristics and outcomes in infected and no infected patients