

Risk Factors of Hospital Acquired Infection Mortality in a Tunisian Intensive Care Unit

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Abstract : Background: Hospital Acquired Infection (HAI) constitutes an important worldwide health problem. It was associated with high mortality rate in intensive care units (ICU). This study aimed to determine HAI mortality rate in Tunisian intensive care units and identify its risk factors. Methods: We conducted a prospective observational cohort study over a 12 months period (September 15th 2015 to September 15 th 2016) in the adult medical ICU of University Hospital-Farhat Hached (Sousse-Tunisia). All patients admitted in the ICU for more than 48 hours were included in the study. We used an anonymous standardized survey record form to collect data by a medical hygienist assisted by an intensivist. We adopted definitions of Center for Diseases Control and prevention of Atlanta to detect HAI, Kaplan Meier survival analysis and Cox proportional hazard regression to identify independent risk factor of HAI mortality. Results: Of 171 patients, 67 developed ICU-acquired infection (global incidence rate=39.2%). The mean age of patients was 59 ± 21.2 years and 60.8% were male. The most frequently identified infections were pulmonary acquired infection (ventilator associated pneumonia (VAP) and infected atelectasis with density rates 21.4 VAP/1000 days of mechanical ventilation and 9.4 infected atelectasis /1000 days of mechanical ventilation; respectively) and central venous catheter associated infection (CVC - AI) with density rate 28.4 CVC-AI / 1000 CVC-days). HAI mortality rate was 66.7% (n=44). The median survival was 20 days 3.36, 95% Confidential Interval [13.39 - 26.60]. Specific mortality rates according to infectious site were 65.5%, 36.4% and 4.5% respectively for VAP, CVC associated infection and infected atelectasis. In univariate analysis, a significant associations between mortality and cardiovascular history (p=0.04) tracheotomy (p=0.00), peripheral venous catheterization (p=0.04), VAP (p=0.04) and infected atelectasis (p=0.04) were detected. Independent risk factors for HAI mortality were VAP with Hazard Ratio = 3.14, 95% Confidential Interval [1.63 - 6.05] (p=0.001) and tracheotomy (Hazard Ratio=0.22, 95% Confidential Interval [0.10 - 0.44], p=0.000). Conclusions: In the present study, hospital acquired infection mortality rate was relatively high. We need to intensify the fight against these infections especially ventilator-associated pneumonia that is associated with higher risk of mortality in many studies. Thus, more effective infection control interventions were necessary in our hospital.

Keywords : hospital acquired infection, intensive care unit, mortality, risk factors

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