



Poster N°: 1049

Predictive risk factors of healthcare-associated infections in a tertiary Tunisian hospital during three months in 2018: A prospective study

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Background :

Healthcare-associated infections (HCAIs) are the most frequent adverse consequences of healthcare worldwide, threatening the health of both patients and healthcare workers (HCWs). The objective of the present study was to describe the risk factors and determine the predictive and mortality factors in ICU patients at Sahloul University hospital over three months.

Methods:

A prospective observational study was carried out in six ICUs in Sahloul University Hospital over three months in 2018. We included all patients hospitalized for more than 48 hours in the ICU. Surveillance for each patient was stopped after the discharge from the ICU or the death. Data analyses was performed using SPSS 20.0.

Results:

During the Study period, 202 patients were included; **66 of them (33.7%) developed 99 HAIs** (33.6 infections /1000 days of hospitalization).

The **most frequently** identified infections were **ventilator-associated pneumonia (VAP), Urinary tract infections (UTI), and bloodstream infection (BSI)**.

Univariate analyses showed **risk factors** which were significantly associated with ICU-HAI: **tobacco use** (P=0.03), **antibiotherapy in the last 6 months** (p<10-3), **central-venous catheterization (CVC)** (p<10-3), **exposure duration to CVC** (p<10-3), **urinary tract** (p<10-3), **exposure duration to UC** (p<10-3), **intubation** (p<10-3), **re-intubation** (p<10-3), **duration of intubation** (p<10-3), **bronchial aspiration** (p<10-3), **tracheotomy** (p<10-3), **nasogastric catheter** (p<10-3), **parenteral alimentation** (p<10-3), **sedation** (p<10-3) and **surgery** (0.017).

Independent risk factors for acquiring ICU-HAIs were: length of stay (p<10-3), duration of CVC (p<10-3), and tracheotomy (p=0.003). The total mortality incidence was 19.3% (n=39). Independent risk factors of ICU mortality were intubation (p=0.005), tracheostomy (p=0.003), chronic dialysis (p<10-3) and HAI (p<10-3).

Conclusion:

Independent risk factors found were in line with those of the literature, highlighting the need for more effective infection control strategies in the intensive care units involving a global and multidisciplinary action.