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Abstract (oral session)

Risk factors and mortality related to health-care associated infections in the SPIN-UTI cohort study: the emerging role of Acinetobacter baumannii

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Objectives: To explore sources of variation of indicators of healthcare-associated infections (HAIs) in the Intensive Care Units (ICUs) participating in the SPIN-UTI six years-project. Methods: The SPIN-UTI project, a prospective cohort study, is based on the HELICS-ICU protocol (2004) (Agodi et al., 2010). We examined HAIs surveillance data from Italian ICUs during the three editions of the project (2006-2007, 2008-2009 and 2010-2011) and performed multiple logistic regression analysis. Results: A total of 71 ICUs contributed data to the SPIN-UTI database. The risk of ICU-acquired infections, estimated by computing the cumulative incidence and the incidence density, increased in the third edition compared with the other two editions (RR: 1.192; 95%CI: 1.026-1.385 and RR: 1.179; 95%CI: 1.039-1.337). In the third edition, ventilator-associated pneumonia rate (17.3 per 1000 ventilator-days) and bloodstream infection rate (5.7 per 1000 patient-days), significantly increased compared with the second and the first edition. On the contrary, catheter-associated urinary tract infection rates and central venous catheter-related infection rates remained unchanged. Notably, a decrease of ventilator utilization ratio, from 0.64 to 0.62, an increase of urinary catheter utilization ratio, from 0.82 to 0.90, and of central venous catheter utilization ratio, from 0.82 to 0.85, was observed. “Acinetobater baumannii” resulted the most frequently reported microorganism in the third edition, while in the two previous editions ranked third and second, respectively. High SAPS II score and patient origin from hospital were identified as independent risk factors for HAIs. Risk trends computed for “A. baumannii” associated infections did not differ significantly from those computed for other microorganisms. During the three editions, mortality rates remained unchanged, while, the risk of death increased for infected patients, from RR=2.476 (95%CI: 2.028-3.023) to RR=3.623 (95% CI: 2.995-4.383). Conclusion: Our study highlighted the increased risk of infection, partly explained by the increased severity of patients, and the emerging role of “A. baumannii” in the Italian ICUs. Furthermore, HAIs greatly increased mortality. We identified ventilator use as a potential target for infection control and as such the need of implementation of strategic bundles in order to decrease the growing risk of HAI in the ICUs.