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Abstract (publication only)

Evaluation of risk factors for mortality in ventilator-associated pneumonia patients

C. Bulut*, C. Ataman Hatipoglu, Y. Kurtoglu Gül, U. Önde, A.K. Adiloglu, A.P. Demiroz (Ankara, TR)

Objectives: Ventilator associated pneumonia (VAP) is one of the most important infections in intensive care units with high mortality and morbidity rates. In this study, we aimed to detect risk factors for mortality in VAP patients. **Methods:** This study was conducted in the four intensive care units (ICU) of a tertiary care hospital. All patients having the diagnosis of VAP between January 2010 and December 2011 were included in the study. Demographic, clinical and laboratory findings were recorded. Identification and antimicrobial susceptibility tests of the isolated species were performed by VITEK II system (Biomérieux, France). CDC criterias were used for the VAP diagnosis. Univariate and multivariate analyses were performed to assess the risk factors for mortality. All statistical analyses were performed by SPSS for Windows v15.0. **Results:** During the study period, a total of 4163 patients were hospitalized in four intensive care units, (two medical, one medical-surgical and one surgical ICU). Hospital infection (HI) ratio and HI density were detected as 24.3% and 34.16 per 1000 patient day respectively. Two hundred and thirty-three VAP attacks were detected in 165 patients (1.41 attacks per patient). Mean age of the patients was 63.9 ± 17.9 years (18-90 years) and 49.7% of them (82) were male. Mean duration between hospitalization and development of infection was 18 days. The etiologic agents could not be detected in 43 attacks (26% of attacks). *Acinetobacter baumannii*, *Pseudomonas aeruginosa* and *Klebsiella pneumoniae* were the most prevalent bacteria. Twenty six of the attacks were polymicrobial and 23 attacks were early onset VAP (23%). Overall mortality rate was 78.8%. On the univariate analysis, older age (>70 years), and being a medical ICU patient were found as risk factors for mortality ($p < 0.05$). On multivariate analysis, age and type of the ICU (medical ICU) were found as risk factors (OR's were 2.68 and 2.87, respectively, $p < 0.05$) for increased mortality. Although polimicrobial agent isolation and inappropriate antibiotic usage were noted as factors for increased mortality (OR's were 10.5 and 2.18, respectively), they were not statistically significant ($p = 0.07$ and $p = 0.06$, respectively). **Conclusion:** VAP still remains as one of the most important causes of mortality and morbidity among ICU patients. Detection of risk factors and appropriate antimicrobial therapy will be helpful for decreasing mortality rates.