Title: Ventilator-associated pneumonia (VAP) – Early and late-onset differences

Body: Background: VAP guidelines recommend choosing empirical antibiotic therapy based on time of diagnosis, presence of multidrug-resistant risk factors (MDR-RF) and local microbiologic data. Objectives: To compare pathogens, length of intensive-care unit (ICU) stay and mortality in early-onset, early onset with MDR-RF and late-onset VAP. Methods: Retrospective study of patients hospitalized in an ICU from 1/8/2001 to 31/12/2011 with VAP diagnosis and identified pathogen in lower airways. Three groups were defined: early-onset (< 5 days of intubation), early-onset and presence of MDR-RF and late-onset VAP (≥ 5 days of intubation). Potential MDR pathogens (methicillin-resistant S. aureus, P. aeruginosa, Acinetobacter sp. and extended spectrum beta-lactamases pathogens) and endpoints were compared between groups. Results: We included 154 patients; 125 had late-onset VAP and 17 had early-onset with MDR-RF. Potential MDR pathogens were identified in 42% of early-onset VAP, in 59% of early-onset with MDR-RF and in 71% of late-onset VAP (p≥0.05). Mortality for early-onset, early-onset with MDR-RF and late-onset VAP was 17%, 24% and 31% respectively (p≥0.05). Mean length of ICU stay after VAP diagnosis of those who didn’t die in ICU (n=109) was higher in patients with late-onset VAP compared to early-onset without MDR-RF (20 vs 13 days, p=0.016). Conclusion: Late-onset VAP was associated to a higher mortality (p≥0.05) and to a longer ICU stay. The percentage of potential MDR pathogens was not significantly different between groups. There were few reports of early-onset VAP but high prevalence of these bacteria in this group may suggest the use of broad spectrum therapy in this ICU, until microbiologic results are ready.