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**Title:** Assessment of severity of intensive care unit-acquired pneumonia and association with aetiology

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**Body:** Background: Studies on nosocomial pneumonia define severity only related to mortality or mortality scores. The current 2005 guidelines, with limited accuracy to predict multi-drug resistant (MDR) microorganisms, do not take into account severity in choosing empiric antibiotics. We evaluated the association between severity and microbial aetiology of ICU-acquired pneumonia (ICUAP), to define if severity should be used to guide empiric antibiotics. Methods: We prospectively assessed characteristics, microbiology, systemic inflammatory response and outcomes of 343 consecutive patients with ICUAP clustered according to the presence or not of MDR pathogens. Results: 208 (61%) patients had ventilator-associated pneumonia (VAP). We determined etiology in 217 (63%) patients. The most frequent pathogens were *P. aeruginosa*, Enterobacteriaceae, methicillin-sensitive (MSSA) and methicillin-resistant (MRSA) *S. aureus*. 58 (17%) patients had a MDR pathogen. Except for a longer ICU stay in the MDR group, no differences were found in clinical and inflammatory characteristics, severity criteria and outcomes between patients with or without MDR pathogens, even after adjusting for potential confounders. Patients with higher severity scores and septic shock had significantly lower survival and higher systemic inflammatory response. The results were similar when only patients with microbial diagnosis were considered. Conclusions: In patients with ICUAP severity of illness seems not to affect aetiology. Risk factors for MDR, but not severity, should be taken into account in selecting empiric antimicrobial treatment. Supported: IDIBAPS, CibeRes (CB06/06/0028)-ISCiii, 2009 SGR 911, ERS Fellowship.