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Title: Acute respiratory failure and severe sepsis may identify different clinical phenotypes in community-acquired pneumonia

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Body: The aim of the study was to evaluate the impact of acute respiratory failure (ARF) and severe sepsis (SS) on outcomes of patients with community-acquired pneumonia (CAP). This was a multicenter, observational, prospective study of immunocompetent CAP patients admitted to three hospitals in Italy, Spain and Scotland between 2008 and 2010. ARF was defined as the presence of at least one among: PaO2<60 mmHg; PaO2/FiO2 ratio<250; oxygen saturation<90%; respiratory acidosis. SS was defined according to the 2008 Surviving Sepsis Campaign. Three groups were identified: patients with neither ARF nor SS (Group 1), those with only ARF (Group 2) and those with both ARF and SS (Group 3) on admission. A total of 2,271 consecutive CAP patients were enrolled (48% male, mean±SD age 68±19 yrs). ARF and SS were diagnosed in 969 (49%) and 473 (21%) patients, respectively. 242 (11%) patients died during hospitalization. Prevalence and mortality according to the study groups are depicted in Figure. At the multivariable logistic regression model, after adjustment for centers and confounders, the presence of only ARF had an OR for mortality of 2.5 (95%CI: 1.6-4.0, p<0.001) and the presence of both ARF and SS an OR of 5.9 (95%CI: 3.6-9.8, p<0.001). The significant difference in mortality in patients with or without ARF and

SS on admission may indicate different clinical phenotypes.