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Title: Cardiac autonomic alterations impact early and late outcomes in patients with community-acquired pneumonia

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Body: The role of cardiac autonomic control (CAC) in the development of cardiovascular events (CVE) and adverse outcomes in community-acquired pneumonia (CAP) has not been yet investigated. To evaluate the impact of alteration of CAC on early and late outcomes, including CVE, in CAP. Consecutive patients hospitalized at two university hospitals from Sept. 2011 to Jan. 2013 for CAP were prospectively enrolled. Patients underwent 15' registration of ECG and respiration within 24 hours after admission. CAC was assessed using linear spectral (SP) and non-linear symbolic (SY) analysis of heart rate variability (HRV). SP evaluates rhythmical components of HRV, identifying three oscillations: very low (VLF), low (LF) and high (HF) frequency components. LF and HF are markers of sympathetic and vagal modulation, respectively. SY identifies 0V% and 2UV%, indices of sympathetic and vagal modulation, respectively. HRV indices were correlated with time to reach clinical stability (TCS) and a combined adverse outcome, including either CVE or mortality, during hospitalization. Fifty-eight patients (33 males; median age: 74 yrs) were enrolled. Patients with a TCS>3 days (n=38) showed a smaller VLF component on admission compared to patients with a TCS≤3 days (p= 0.03). Patients with adverse outcome (n=7) had lower LFnu (p=0.02) and higher 2UV% (p=0.002) values compared to patients without an adverse outcome. No other HRV indices were correlated with both outcomes. CAP patients with lower VLF on admission show a longer TCS during hospitalization. A predominant parasympathetic modulation and a reduced sympathetic oscillation on admission are predictors of adverse outcomes in CAP patients.