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**Title:** Admission serum glucose levels are a risk factor predicting short- and long-term mortality in community acquired pneumonia

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**Body:** Objective To examine whether or not acute dysglycemia predicts an adverse outcome in subjects with community acquired pneumonia (CAP). Participants 6,891 CAP patients with community acquired pneumonia included in the prospective German CAP Competence Network (CAPNETZ) study between 2003 and 2009. Main outcome measures Uni- and multivariable hazard ratios (HR) adjusted for gender, age, body mass index (BMI), current smoking status, CRB-65 and various co-morbidities for 28-, 90-, and 180-day mortality of CAP were calculated according to serum glucose levels on admission. Results In patients without known diabetes, an elevated glucose level at admission was an independent predictor of 28-, 90- and 180-day mortality in CAP. As compared to individuals with normal glucose levels on admission, subjects with mild acute hyperglycemia (glucose on admission 6–<11 mmol/L) had a significantly increased HR for death at 90 days (1.55; 95%CI: 1.18 to 2.04; P<0.001), which increased to 6.04 (95%CI: 4.18–8.74; P<0.001) if admission glucose levels were ≥14 mmol/L. In sensitivity analyses the predictive value of admission glucose levels was confirmed for short- (28 days) and long-term mortality (180 days). Patients with previously diagnosed diabetes had an increased overall mortality as compared to patients without diabetes (crude HR 2.47 95%CI 2.05 to 2.98; P<0.001). This outcome was not significantly affected by

admission glucose levels ( $P=0.18$ ). Conclusions Admission glucose levels predict an adverse outcome in CAP in patients without known diabetes. Hence, acute hyperglycemia may identify patients in particular need of intensified care to reduce mortality in CAP.