

P2485 Kinetic characteristics and connections with outcomes of CRP and PCT among adult patients hospitalised with community-acquired sepsisBalint Gergely Szabo^{1,2,3}, Rebeka Kiss⁴, Bence Marosi⁵, Janos Szlavik¹, Botond Lakatos¹

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Background: Community acquired sepsis (CAS) is a life-threatening systemic reaction to infection starting within ≤ 72 hours after hospital admittance. Data concerning specific fluctuations of C-reactive protein (CRP) and procalcitonin (PCT) levels during disease progression are sparse, so our aim was to analyse the kinetic characteristics of CRP and PCT among adult patients with CAS.

Materials/methods: We analysed cohort data of consecutive patients hospitalized with CAS at our centre during Jan–Dec, 2016. Sepsis was defined according to ACCP/SCCM SIRS-based criteria, community acquisition was ascertained by *a priori* exclusion criteria. CRP and PCT values measured on days 1–14 were collected from electronic records, and correlated with clinical (in-hospital mortality, intensive care unit [ICU] admission, length-of-stay [LOS]) and microbiological (sepsis source, causative microorganism) outcomes for each patient. Absolute ($\Delta_{\text{abs}}\text{CRP}$, $\Delta_{\text{abs}}\text{PCT}$) and relative ($\Delta_{\%}\text{CRP}$, $\Delta_{\%}\text{PCT}$) differences with respect to value increment/decrement (+/–) were calculated from CRP and PCT values at diagnosis (CRP_0 , PCT_0) and control values within 24 hours of empirical antibiotic therapy initiation. Mann–Whitney-test and Student's *t*-test were used for comparisons, ROC analysis was used for calculating discriminatory ability.

Results: 193 patients were included (mean age 58.2 ± 19.1 years, males 41.5%), in-hospital mortality was 14.0% (27/193), ICU admittance was 25.9% (50/193). Patients who died had significantly smaller median $\Delta_{\%}\text{PCT}$ ($-7.7 \pm 127.9\%$ vs. $-49.8 \pm 67.1\%$, $p=0.003$) and $\Delta_{\text{abs}}\text{CRP}$ ($+50.9 \pm 140.2\text{mg/L}$ vs. $-16.8 \pm 121.5\text{mg/L}$, $p=0.02$) decrements compared to survived patients. During hospital stay, daily absolute values of PCT on days 2–14, while CRP on days 5–14 became significantly higher among patients who died. Patients admitted to the ICU had higher median PCT_0 values ($8.9 \pm 34.1\text{ng/mL}$ vs. $5.1 \pm 22.0\text{ng/mL}$, $p=0.04$) and smaller $\Delta_{\%}\text{PCT}$ decrements ($-19.6 \pm 72.5\%$ vs. $-49.8 \pm 100.8\%$, $p=0.005$) compared to non-admitted patients. Calculated parameters did not show significant correlations with LOS, sepsis source or causative microorganisms. During ROC analysis, $\Delta_{\%}\text{PCT}$ performed well for mortality (AUROC 0.75; 95%CI 0.64–0.83; $p<0.001$) and relatively low for ICU admittance (AUROC 0.67; 95%CI 0.57–0.76; $p<0.01$).

Conclusions: Our study suggests that specific fluctuations of CRP and PCT levels are observable, and especially $\Delta_{\%}\text{PCT}$ might be a favourable clinical parameter for prediction of negative outcomes among adult patients with CAS.

