

Category : **Cardiovascular: cardiac arrest\CPR**

**A123 - Prognostic capabilities of inflammatory markers after out-of-hospital cardiac arrest: a systematic review**

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**Introduction:**

Out-of-hospital cardiac arrest (OHCA) survivors often develop a post-cardiac arrest syndrome in which systemic inflammation plays an important role [1]. We conducted a systematic review to summarize current evidence regarding whether inflammatory marker levels are useful for prognostic assessment and guidance of treatment in the intensive care unit setting.

**Methods:**

We conducted a systematic search from PubMed database using search terms (“inflammation” OR “cytokines”) AND “out-of-hospital cardiac arrest”. Afterwards, each inflammatory marker found was combined with “out-of-hospital cardiac arrest” with AND function to find further relevant studies. We included original articles where inflammatory markers were measured from adult OHCA patients, and their prognostic capabilities were assessed regarding mortality, neurological outcome, or severity of organ failure.

**Results:**

47 studies met the inclusion criteria. Elevated procalcitonin (PCT), interleukin-6 (IL-6) and CRP were associated with outcome in 10/11 (independently in 3), 10/11 (independently in 4) and 7/10 (independently in 2) studies, respectively. PCT had strongest association 1 day after OHCA, IL-6 at ICU admission, and CRP at later timepoints. In general, the inflammatory marker association with outcome was stronger in studies with more severely ill patient populations. Spearman r between AUC and poor outcome proportion was 0.82 for PCT (Figure 1) and 0.53 for IL-6. Studies reported conflicting results regarding marker association with organ failure severity. Numerous other inflammatory markers were assessed, mostly in single studies.

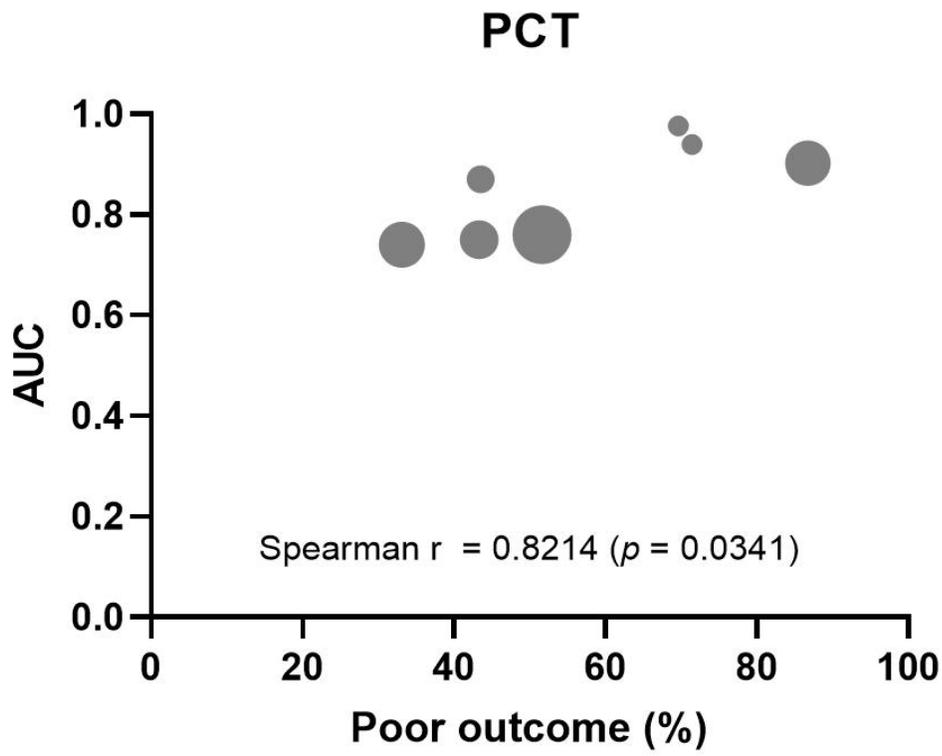
**Conclusion:**

Inflammatory markers are potentially useful for early risk stratification after OHCA. PCT and IL-6 are the most studied markers and reported to have prognostic value during the first 24 hours of ICU stay. Prognostic value of the inflammatory markers is dependent on the case mix.

**References:**

1. Adrie C et al. Circulation 106:562–568, 2002

**Image :**



*Spearman correlation between procalcitonins (PCT) area under receiver operating characteristic curve (AUC) and proportion of patients with poor outcome. Sample size of each study is represented by point size.*