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## Total Antioxidant Capacity and C-Reactive Protein Levels in Patients with Community-Acquired Pneumonia

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**Abstract:** Aims: The aim of this study was to evaluate the oxidative stress measured by serum total antioxidant capacity (TAC) and malondialdehyde (MDA) in patients with community-acquired pneumonia (CAP), and to evaluate their possible correlation with the serum C-reactive protein (CRP) and pneumonia severity index (PSI). Materials and Methods: The PSI, chest X-ray (CXR) scores, and the serum TAC, MDA, and CRP levels were determined in 67 CAP patients on admission and compared to 45 healthy controls. Results: In the whole study population, the TAC level was inversely correlated with CRP levels and WBC counts ( $r=-0.648$ ,  $P=0.0001$ ;  $r=-0.626$ ,  $P=0.0001$ , respectively). Lower TAC and higher MDA levels were found in CAP patients compared with those of controls ( $P = 0.0001$ ,  $P = 0.029$ ). Although the mean serum MDA and TAC levels were similar between the groups of PSI class I-III ( $n=45$ ) and PSI class IV-V ( $n=22$ ), the radiological scores ( $2.36 \pm 1.23$  vs  $3.19 \pm 1.17$ ) and CRP levels ( $138.67 \pm 63.86$  vs  $177.14 \pm 56.43$ ) were significantly higher in the latter group ( $P = 0.010$  and  $P=0.005$ , respectively). Conclusions: Single measurement of serum MDA or TAC levels in CAP patients, in contrast to CRP level measurement, does not seem to predict the severity of disease.

**Key Words:** Community-acquired pneumonia, C-reactive protein, malondialdehyde, oxidative stress, pneumonia severity index, total antioxidant capacity

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