40. OXIDATIVE STRESS MARKERS IN PATIENTS WITH HEART FAILURE AND COMMUNITY-ACQUIRED PNEUMONIA

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Introduction. Oxidative stress is a common pathogenic mechanism in patients with community-acquired pneumonia (CAP). The role of oxidative stress biomarkers in patients with CAP and concomitant heart failure (HF) have not been well described.

Aim of study. To evaluate the changes of oxidative stress biomarkers in patients with CAP and different stages of HF.

Methods and materials. Plasma levels of oxidative stress biomarkers were studied in 77 patients admitted in the hospital during October 2020-January 2021. In study were included 31 men (30.3%) and 46 women (59.7%), with the mean age of 68.6±8.01 years. Patients were divided into two groups, according to New York Heart Association (NYHA) classification of HF: group 1 (n=42) – patients with CAP associated with HF, NYHA stage II, group 2 (n=35) – patients with CAP associated with HF, NYHA stage III. The levels of ischemia modified albumin (IMA), advanced glycation end products (AGE), protein oxidation products (POA), malondialdehyde (MDA) and superoxide dismutase (SOD) were compared in both groups.

Results. All patients with CAP and advanced HF presented high values of pro-oxidative stress biomarkers. Ischemia modified albumin (IMA) was increased in group 2 compared to group 1: 212±54.3 µM/L (95% CI 231-99) vs 189±58.2 µM/L (95% CI 171-207), $p>0.05$, while PPOA had higher values in group 1 compared to group 2: 74±35.1 µM/L (95% CI 63-85) vs 61±24.0 µM/L (95% CI 52-69), $p<0.05$. MDA and SOD were without significant changes in both groups. AGE products were higher in patients with CAP and advanced HF (group 2) compared to group 1: 633±301.4 µM/L (95% CI 530-757) vs 459±181.7 µM/L (95% CI 403-516), $p<0.05$.

Conclusion. The dynamics of pro-oxidative stress levels in patients with CAP and concomitant HF, depending on the stage of the disease, indicates the association of HF severity with that of oxidative stress, which could be useful to determine the disease progression.