Title: Heart-type fatty acid binding protein (H-FABP) and brain natriuretic peptide-fragment (BNP-fragment) in COPD patients with pneumonia

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Body: Background: COPD exacerbations are commonly complicated by pneumonia. The cardiac involvement in these cases may also play an important prognostic role. Aim: To evaluate the value of cardiac dysfunction biomarkers (H-FABP and BNP-fragment) in COPD patients with pneumonia. Methods: We studied 61 hospitalized patients with acute exacerbation COPD (64.4±7.9 yrs; FEV1 28.1±12.1% pred.), pneumonia was diagnosed in 26 patients of them. All patients underwent investigation including chest X-ray, blood gases, echocardiography, measurement of serum C-reactive protein (CRP), H-FABP, BNP-fragment. Results: In patients with pneumonia who died during hospital stay (n=11) levels of H-FABP, BNP-fragment were significantly higher than in survivors (11060.6 [3328, 2-17216, 0] vs 1666,2 [3088,1-5779,4] pg/mL and 2066.5 [575.6-6000.0] vs 497.9 [307.4-1854.8] fmol/mL, respectively, p<0.05). CRP levels were comparable in died patients and survivors. We observed significant correlations between BNP-fragment levels on hospital admission and H-FABP levels (r = 0.476) as well as right ventricular diameter (r = 0.514). There were significant correlations between H-FABP levels and left ventricular end-diastolic diameter (LV EDD) (r = 0.397). CRP levels were significantly correlated with LV EDD (r = 0.389), LV end-systolic diameter (r = 0.420) and LV ejection fraction (r=-455). Conclusions: Increased levels of H-FABP, BNP-fragment were associated with poor outcome of pneumonia. Inflammatory response reflected cardiac dysfunction in COPD patients with pneumonia.