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Spotlight on Special Topics

OSBORNE WAVE IN ECG AS A PREDICTOR OF HOSPITAL MORTALITY IN COVID-19 ASSOCIATED PNEUMONIA

Poster Contributions
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Background: It is considered that the Osborne wave (J wave) occurs in hypothermia, hypercalcemia and some other conditions and may be a predictor of ventricular fibrillation. Its incidence achieves 3-4% in population. We firstly noted increased incidence of J wave in hospitalized COVID-19 patients. We supposed that it may reflect myocardial and/or conduction system damage. The goal of the study was in hospitalized patients with COVID-19 associated pneumonia to determine the value of Osborne wave as a 14-days hospital mortality risk factor.

Methods: In retrospective, consecutive, nonrandomized, uncontrolled, cohort study in patients with COVID-associated pneumonia (n = 386) at hospital admission based on electrocardiogram (ECG) the patients were divided into groups with (n = 47, 12,2%) and without Osborne wave (n = 339, 87,8%). The primary endpoint was death within 14 days from hospitalization time.

Results: The mortality was higher in Osborn group (14.9 versus 3.8%, p=0.002). The Osborne group patients compared to non-Osborne had trend to be older (64.0±11.1 versus 56.9±13.5 years), had higher lung tissue damage (49.6%±15.6 versus 44.1%±17.3), and more frequent cardiovascular risk factors (coronary heart disease, post myocardial infarction, chronic heart failure, diabetes mellitus 2 type), QTcor interval (all p>0.05) and longer QRS duration (p=0.01). J wave was found most often in I (48.9%), II (46.8%), AVL and AVF (51.0%) leads. By univariant analyses based on logit regression for patient's variables with p<0.1, the Osborne wave was shown to be significant for mortality (OR 1.48, p=0.003, AIC 153.84) and by multivariant analyze the mortality prognostic model was performed based on age, oxygen saturation (SpO2), red blood cells (RBC), serum albumin und Osborne wave variables (p<0.05, AIC 121.36).

Conclusion: At hospital admission Osborne wave on ECG of was more frequent than in general population and was shown to be 14 days mortality predictor in patients with COVID-19 associated pneumonia.