CARDIOLOGICAL SAFETY OF LONG-ACTING COMBINED BRONCHODILATORS IN PATIENTS WITH COPD AND HYPERTENSION: ASSESSMENT OF ARRHYTHMOGENIC EFFECTS AND VENTRICULAR FUNCTION

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Abstract: Objective: To evaluate the efficacy and safety of a long-acting combined bronchodilator in patients with chronic obstructive pulmonary disease (COPD) and hypertension, with a focus on heart rhythm and ventricular function.
Materials and Methods: Twenty-four patients with GOLD stage II–III COPD and stable stage II hypertension, previously on tiotropium monotherapy, were examined. Patients were switched to a long-acting combined bronchodilator (tiotropium bromide monohydrate 2.5 μg + olodaterol hydrochloride 2.5 μg, 2 inhalations once daily) for 3 months. Heart rate (HR), rhythm and conduction disturbances (via 24-hour Holter ECG monitoring), as well as systolic and diastolic ventricular function (via echocardiography), were assessed.
Results. During the 3-month therapy, no significant changes in average daily, daytime, or nighttime HR were observed ($p > 0.05$). No episodes of paroxysmal tachycardia, atrial fibrillation, or atrioventricular conduction disturbances were recorded. The number of supraventricular and ventricular extrasystoles did not change significantly ($p > 0.05$). Systolic function of both ventricles remained preserved in 100 % of patients; left ventricular diastolic function did not deteriorate, while right ventricular diastolic function showed significant improvement ($p < 0.05$).
Conclusions. The long-acting combined bronchodilator (tiotropium bromide + olodaterol) demonstrated a favorable cardiovascular safety profile in patients with COPD and hypertension: it did not induce arrhythmogenic effects, did not negatively affect ventricular function, and was well tolerated during the 3-months therapy.

Key words: chronic obstructive pulmonary disease, hypertension, blood pressure, bronchial obstruction, 24-hour blood pressure monitoring, Holter electrocardiography, echocardiography, long-acting bronchodilators, inhalation therapy.