CORRELATIONS BETWEEN CLINICAL AND ECHOCARDIOGRAPHIC PARAMETERS IN PATIENTS WITH OBESITY AND ATRIAL FIBRILLATION

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Relevance. Obesity along with hypertension, are cardiovascular risk factors, the significance of which increases in the presence of cardiac arrhythmias, particularly, atrial fibrillation (AF) [1]. However, it should be noted that the results of some studies indicate that excess body weight and obesity may be associated with a favorable prognosis for cardiovascular diseases (the so-called “obesity paradox”) [2].

Target. To assess correlations between clinical and echocardiographic parameters in patients with obesity and AF.

Research methods. The study included 130 patients with AF who were admitted to the Grodno Regional Clinical Cardiological Center for treatment from January 2023 to November 2025. The patients were further stratified according to their BMI values. Group 1 included 50 patients with obesity stage 1-3 (BMI ≥30.0 kg/m2), Group 2 included 50 overweight patients (BMI 25.0–29.9 kg/m2) and Group 3 included 30 patients with normal body weight (BMI 18.5–24.9 kg/m2). Clinical and demographic data, the results of basic laboratory tests, medical history of comorbidities were collected for all patients. Statistical analysis was performed using the STATISTICA 12.0 software.

Results and their discussion. Patients of all three groups were comparable in age and prevalence of such comorbidities as hypertension, myocardial infarction and anemia ($p>0.05$). In Groups 1 and 2 patients were predominantly male, while among patients with normal BMI more than half of the patients were female ($p=0.002$).

According to the results of transthoracic echocardiography, patients with obesity had significantly larger sizes of left atrium (LA) in both 2 and 4 chamber positions in comparison to overweight patients and patients with normal BMI ($p<0.05$). When conducting a correlation analysis it was found that the majority of echocardiographic parameters had significant correlations with BMI, including LA diameter ($R=0.41$, $p=0.001$), right atrial (RA) diameter ($R=0.27$, $p=0.003$), right ventricle diameter ($R=0.30$, $p=0.004$), as well as LV interventricular septum diastolic thickness ($R=0.38$, $p=0.001$) and posterior wall diastolic thickness ($R=0.42$, $p<0.001$).

Conclusions. An evaluation comparative of echocardiography data in patients revealed a number of characteristics in obese patients, including larger LA and RA sizes and signs of LV myocardial hypertrophy, which can be considered a manifestation of lipotoxic cardiomyopathy. There is a clear link between AF and excess body weight, which requires a comprehensive approach to treatment,

rehabilitation, and prevention involving specialists from various fields and taking into account all comorbidities.

LITERATURE

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COMPARATIVE ANALYSIS OF ARTIFICIAL INTELLIGENCE VERSUS PHYSICIAN ACCURACY IN ANTIBIOTIC DOSING FOR HEMODIALYSIS PATIENTS: A RETROSPECTIVE STUDY

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Relevance. The promise of artificial intelligence (AI) models, like DeepSeek, to improve therapeutic decision-making and diagnostic accuracy has a lot of interest in their use in clinical care [1]. Even while AI models have demonstrated the ability to assess and summarise such complicated medical data, it is unknown how useful they are in the real world, including complex pharmacokinetics [2-3].

Target. The purpose was to evaluate the efficacy of doctor-made treatment recommendations against AI-generated ones, with a particular emphasis on compliance with manufacturer dosage recommendations and the amount of time AI takes to analyse information.

Research methods. The case histories of patients admitted to the intensive care unit at the University Clinic of Grodno in Belarus were gathered for the study. Patients on haemodialysis who have been diagnosed with renal failure and need antimicrobial treatment are eligible to be included. Patients with HIV, hepatic impairment, active hepatitis, and incomplete medical data are excluded. 38 patients in all underwent the initial screening. Among which 3 were eliminated, leaving 35 patients in total. Age, gender, GFR, comorbidities (COPD, pneumonia, or emphysema), and the prescription antibiotic regimen (drug, dose, and frequency) were all collected. DeepSeek LLM was used to process clinical data. For haemodialysis patients, manufacturer's stated dosing guidelines was considered the «gold standard» for accuracy. Among the reference databases examined were Tabletka.by (Republic of Belarus) and the Register of Medicines of Russia (RLSnet.ru). McNemar's test for paired nominal data was used to compare the performance of AI and physicians in terms of discordance.

Results and their discussion. 22 males and 13 females were in study population (n=35), mean age of 66.9 years and a mean GFR of 26.6 ml/min/1.73 m². 10 patients (28.6%) had concomitant conditions, COPD or pneumonia. By comparing the