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ABSTRACT BOOK

IZVODI SAOPŠTENJA

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MORPHOLOGICAL CHANGES OF THE HEART AS A RESULT OF VARIOUS FORMS OF PHYSICAL EXERTION

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Introduction. As a result of regular physical activity/physical training, i.e. long-term participation in sports, changes in the structure and function of the heart occur, more commonly known as cardiac remodeling.

Materials and Methods. The sample comprised 285 athletes of both sexes between the ages of 9 to 38. Anthropometric parameters (gender, age, height, weight) were determined, a personal and sports history was taken, and a 12-lead electrocardiogram (ECG) was performed in the group of studied athletes. In 54 subjects with ECG changes, 2D transthoracic echocardiography was performed.

Results. Longer duration of resistance training throughout the week was statistically significantly associated with: greater left atrial (LA) internal dimension ($r = 0.359$, $p = 0.008$), greater indexed LA volume ($r = 0.315$, $p = 0.020$), lower LA ejection fraction ($r = -0.380$, $p = 0.005$), greater left ventricular (LV) internal dimension in systole ($r = 0.336$, $p = 0.013$), greater interventricular septal and posterior wall thickness in diastole ($r = 0.399$; $p = 0.003$; $r = 0.347$, $p = 0.010$; respectively), as well as a greater indexed LV mass ($r = 0.326$, $p = 0.016$; going to the gym and lifting heavier weights was shown to be associated with: greater internal dimension of the LA ($r = 0.322$,$p = 0.018$), greater internal dimension of the right atrium (RA) ($r = 0.322$,$p = 0.018$ and greater thickness of the interventricular septum and posterior wall in diastole ($r = 0.272$; $p = 0.004$; $r = 0.397$,$p = 0.003$).

Conclusion. The impact of physical exertion is most frequently reflected in changes in the dimensions, function, and deformation of the left and right atria in athletes.

Keywords: Sport Heart, Physical Activity, Echocardiography