

Prošireni sažetak / Extended abstract

Athlete's heart in Dubrovnik professional water polo players

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Increased left ventricular wall thickness associated with intensive athletic training is one of the important marks of the „athlete's heart“. Such morphologic changes in the hearts of the athletes have been attributed to the hemodynamic overload induced by endurance sports such as water polo. The mayor challenge facing electrographers is small subset of elite male athletes who show a borderline increased LV thickness of 13 to 15 mm defining the gray zone of overlap between the extreme expressions of athlete's heart and mild HCM phenotype. HCM is a relatively common inherited cardiomyopathy which can be separated from the athlete's heart by the 2D echocardiography. Twenty asymptomatic highly trained adolescent athletes, aged 18-36 underwent cardiac evaluation with medical examination, 12-lead resting and stress electrocardiography and echocardiography (M, 2D, conventional and tissue Doppler imaging). Among the group of the highly trained water polo players I did not identify anybody with HCM. Among the group of 20 players a few

athletes develop substantial LVH as adaptation to intensive training. Out of 20 athletes 3 of them had LVWT more than 15 mm. One of them at the end was excluded because he became a trainer so he didn't have regular trainings. An enlarged left ventricular end-diastolic cavity dimension (55) was present in 14 athletes. TDI was important tool to separate athletes with the altered diastolic function. Most water polo players show normal pulsed or tissue Doppler diastolic indices of left ventricular filling. Only one water polo player who was the oldest and hypertensive had E-E' 9.27 (Table 1). The early peak of the transmitral flow velocity (E) was not decreased. Deceleration time of the early peak was not prolonged and atrial filling (A) was not increased. There were not inverting the normal E-A ratio (0.9-2.3) (Table 1).

KEYWORDS: water polo players, athlete's heart, hypertrophic cardiomyopathy, professional sport.

Table 1. Athlete's heart in professional water polo players.

Parameter	IVSd cm	LVIDd cm	IVSs cm	LVIDs cm	EF %	FS %	LA cm	MV E/A ratio	E/E'
Min.	0.8	5.2	1.1	3.1	61	33	3.2	0.9	3.66
Max.	1.4	6.8	1.6	4.5	74	43	4.3	2.3	9.27
Avg.	1.2	5.9	1.3	3.8	65.2	36.5	3.8	1.4	5.7
STD	0.1	0.5	0.2	0.4	3.9	3.0	0.3	0.4	1.4

n=19; Min. = minimal values; Max. = maximal values; Avg. = mean; STD = standard deviation.

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