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Original Article

An Echocardiographic Study of Heart in a Group of Male Adult Elite Athletes

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Abstract:

Background: Severe and prolonged physical training is associated with morphological and physiological cardiac changes, often termed as the "athlete's heart". Echocardiographic features peculiar to elite Iranian athletes have not been previously described. The aim was to examine the echocardiographic characteristics of highly trained Iranian athletes involved in three different sports.

Methods: We studied cardiac morphology and function as assessed by rest echocardiography in 50 elite adult male athletes referring to a university hospital in Tehran between February 2001 and March 2006. Resting ejection fraction, interventricular septal wall thickness (IVSWT), left ventricular posterior wall thickness (LVPWT), left ventricular internal end diastolic dimension (LVEDD), left ventricular internal systolic dimension (LVISD), left ventricular (LV) mass, and relative wall thickness (RWT) were measured. The control group consisted of 50 age- and weight-matched normal healthy men.

Results: Of the athletes, 38 were engaged in predominantly dynamic (running and soccer) and 12 in predominantly static (weightlifting) sports. The overall mean LVEDD (51.06±5.49mm) and IVSWT (10.24±1.43mm) were higher in the athletes than those in the normal subjects. The mean of IVSWT in the 38 endurance-trained athletes was significantly more than that of the 12 strength-trained athletes (11.1 mm vs. 10.3 mm, P<0.05). LVEDD was also greater in the endurance-trained athletes, but the difference was not statistically significant (51.2 mm vs. 50.6 mm).

Conclusion: Our results of higher LVEDD and IVSWT in Iranian male athletes are in line with previous reports. To generalize the results, we require more studies with larger sample sizes (with female athletes included).

Keywords:

Echocardiography . Athletics . Sport . Heart

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