

YOUTH SPORT

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CONVENTIONAL ECHO MODALITIES FOR PRE-PARTICIPATION CARDIOVASCULAR SCREENING IN SPORTS – A NAIVE MYTH OR THE CHALLENGE OF THE DAY?

Bruch, V.¹, Kiško, A.²

¹ Faculty of Health, National University in Uzhhorod, Ukraine

² Faculty of Health Care, Pešov University in Prešov, Slovakia

Echocardiography (ECHO) as a diagnostically highly valuable non-invasive method allows to identify/exclude a broad spectrum of congenital cardiac abnormalities, otherwise undetectable, providing potentially life-saving screening in sports. Modern pocket-sized ultrasound devices and portable ultrasound systems that can be easily taken into the field are extremely advanced and powerful for more efficient pre-participation screening (PPS).

In the current pilot study performed in international cooperation, 500 healthy athletes aged 16-32 years (average age 21 ± 5 years) including 446 males and 54 females (8:1) participating in sports like football, athletics, handball, cycling, basketball and gymnastics were examined.

All athletes were screened according to the European PPS protocol. Cardiovascular abnormalities were not detected in any of the athletes. Conventional ECHO exams were then performed in all athletes. Cardiovascular abnormalities were found in 14 cases (2.8%). In 7 (1.4%) it was mitral valve prolapse (hemodynamically significant in 1 case), in 3 (0.6%) it was bicuspid aortic valve (significant aortic stenosis in 1 case) and in 4 (0.8%) it was myocarditis, myocardial bridging, noncompaction of left ventricle and coronary artery fistula.

Conventional ECHO modalities are of enough potential for distinguishing athlete's heart from structural heart disease with evaluation of heart function. We believe, that at the beginning ECHO may be reserved for PPS in sports with vigorous and extremely high levels of physical intensity (cycling, triathlon, cross-country skiing, marathon, football etc.), and for individuals at high risk (uncommon or exercise-unrelated ECG changes, after respiratory infections etc.). We think it's the right time to revise the postulate that the inclusion of ECHO into the screening protocol is not cost-effective, and to initiate a professional debates on this issue. In conclusion, elaboration of "point-of-care" and cost-effective screening protocol with incorporated conventional ECHO modalities is on the agenda of the day.