INTERNAL MEDICINE AND FORMER ATHLETE'S GENERAL HEALTH

Venevtseva Yu, Melnikov A., Nizhnik L., Balko A.
Tula State University, Tula, Russia

Background and aims. Long-term health effects of training in different sports disciplines during adolescence and youth are studied insufficiently. Despite the recent paper revealed that female and male US Olympic athletes live 5 years longer than their general population counterparts **[Antero J, Tanaka H, De Larochelambert Q, Pohar-Perme M, Toussaint JF. Br J Sports Med. 2021 Feb;55(4):206-212. doi: 10.1136/bjsports-2019-101696]**, another study group have published the work named "Weight Gain, Hypertension, and the Emergence of a Maladaptive Cardiovascular Phenotype Among US Football Players" **[Kim JH, Hollowed C, Liu C, et.al. JAMA Cardiol. 2019 Dec 1;4(12):1221-1229. doi: 10.1001/jamacardio.2019.3909. PMID: 31617867; PMCID: PMC6802270].**

Because a career in sport does not eliminate risk of cardiovascular disease **[McHugh C, Hind K, Cunningham J, Davey D, Wilson F. J Sci Med Sport. 2020 Sep; 23(9):792-799. doi: 10.1016/j.jsams.2020.02.009]**, the purpose of our study was to examine the most prevalent health afflictions and ECG features in former athletes.
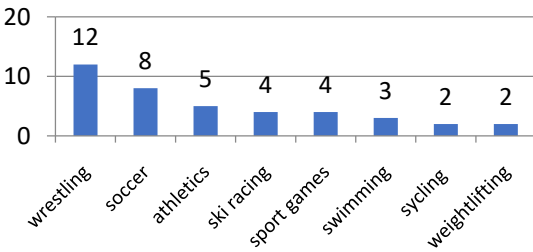

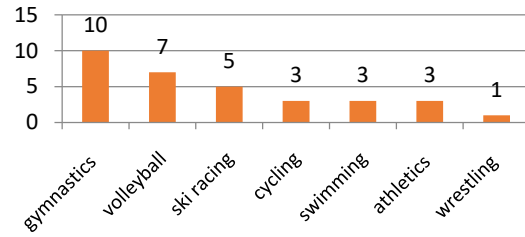Fig.1.Sport disciplines in males

Fig.2. Sport disciplines in females

Methods. We analyzed medical records of 40 males (mean age (M±m) 52.1±2.6 (26-82) yrs) and 34 females (53.1±2.4 (26-80) yrs) during 2005-2020. The most of them had participating in national championships (athletics, cycling, swimming, sport games, rhythmic gymnastics, wrestling).
69 of 74 (93,2 %) of former athletes had retired for a minimum of five years and worked as coaches. ECG and exercise stress-testing have made before treatment in outpatient Rehabilitation Clinic.

Results. 66 % of females and 45 % of males suffered neck or low back pain, shoulder, knee or hip pain. According sport disciplines former male-wrestlers (5/12; 29-47 yrs) and female-volleyball players (4/7; 22-64 yrs) are more likely to suffer from low back pain. 7/10 artistic gymnasts (23-47 yrs) suffered neck pain, and ECG obtained in this time often showed mild repolarization abnormalities.

42% of younger (<50 yrs; n=19) and 29% of older (>50 yrs, n=21) males demonstrated incomplete right bundle branch block, 21 and 19% - sinus bradycardia, early repolarization pattern – 11 and 5%, premature ventricular beats – 14% of older males.

Atrial fibrillation had developed only older ones - 24% of males in their 65-70th and 14% of females; 4/8 cases were former highly endurance trained athletes.

In males EchoCG has been shown moderate left atrium enlargement and normal left ventricular wall thickness and contractility. In females all parameters were within normal limits (table).

Gender	LA, mm	LVEDD, mm	IVS, mm	LVPV, mm	EF, %
Males	40.4 ±1.4	53.4 ±2.1	9.6 ±0.4	9.9 ±0.4	68.8 ±4.0
Females	34.3 ±1.4	45.0 ±0.9	9.0 ±0.6	8.6 ±0.6	69.9 ±1.6

Table. EchoCG parameters in former athletes, M±m
LA – left atrium, LVEDD – left ventricular end-diastolic diameter, IVS – interventricular septum thickness, LVPW - left ventricular posterior wall thickness, EF - ejection fraction, %

Mean body mass index (BMI) in males was 27.8±1.1 kg/m2, in females – 27.0±1.3 kg/m2. 36 % of males and 23 % of females were obese.

Using health register data from Tula Clinical diagnostic center in 2005-2020 wide spectrum of comorbidities was seen: cardiovascular (50 % in males and 40.6 % in females), gastrointestinal and hepatobiliary pathology (12.5 % in males and 34.3 % in females). 4/40 males had neurology pathology, 3/10 artistic gymnasts – thyroid nodules. Despite elevated BMI only 1 male and 1 female have experienced diabetes mellitus.

Total cholesterol was elevated in 7/10 cases and relative lymphocyte count was >40 % in 7/13 cases, more often in females.

Conclusions. Former athletes may experience orthopaedic pathology with different comorbidity. General practitioners must take into account previous long time physical activity, especially high intensity endurance training and weight gain.

Contact name: Yulia L. Venevtseva, MD, Prof.
Organization: Medical institute of Tula State University, Tula, Russia
E-mail: ulvenevtseva@rambler.ru