SEX AND ETHNICITY SPECIFIC ECG DIFFERENCES IN ELITE ATHLETES: RELEVANCE TO PRE-PARTICIPATION CARDIOVASCULAR EVALUATION: THE BRITISH EXPERIENCE

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Purpose The athlete's ECG is affected by several demographic factors but there is a paucity of data relating to the impact of the athlete’s sex and ethnicity. The ESC guidelines for ECG interpretation in athletes are derived predominantly from male cohorts. Extrapolating such criteria to athletes of African/afro-Caribbean origin and female athletes may lead to erroneous interpretation.

Methods Between 2001 and 2011, 1578 highly trained athletes (35% males, 81% Caucasian) (mean age 21.6±5.4 years); range 14-35 years, underwent cardiac evaluation including 12-ECG and echocardiography. ECGs were analysed for training related (group 1) and training-unrelated (group 2) changes, according to the ESC guidelines.

Results Males demonstrated a higher prevalence of Group 1 (89% vs 61%; p<0.0001) and Group 2 ECG changes (26% vs 16%; p=0.0001) compared with females. Of the group 1 changes, isolated left ventricular hypertrophy (42%), early repolarisation patterns (ST elevation >0.1 mV) (61%), first-degree AV block (10%) were more prevalent in males compared to 14%, 45% and 4.7% females respectively (p=0.0001). Of the group 2 changes, T-wave inversion in leads V1-V4 were more prevalent in female athletes (12%) particularly black females (17%) compared to male athletes (4%; p=0.0001), whereas, T-wave inversion in the inferior leads were more common in males (3.3% vs 0.6%) irrespective of ethnicity. Males demonstrated a higher prevalence of axis deviation (6.7% vs 2.1%; p=0.0001), atrial enlargement (4.2% vs 1.0%; p=0.0002) and right ventricular hypertrophy (RVH) (3.3% vs 2.6%; p=0.0001) compared with females. Caucasian athletes exhibited greater group 1 changes compared with black athletes (73% vs 65%; p=0.0161). Black athletes exhibited a higher prevalence of group 2 ECG changes compared with Caucasian athletes (34% vs 21%; p=<0.0001) with 15% of black athletes exhibiting T-wave inversion, 4.5% left atrial enlargement 14% right atrial enlargement and 12% demonstrating RVH compared to 9%, 0.9%, 0.09% and 4.1% of Caucasian athletes respectively. There was no correlation between any ECG parameter and cardiac chamber size.

Conclusions Male sex and black ethnicity equated to a higher prevalence of Group 1 and 2 ECG changes compared with female sex and Caucasian ethnicity. However, anterior T-wave inversion was significantly more common in females, being present in over 10% of athletes irrespective of ethnicity than previously reported. The precise incidence and significance of anterior T-wave inversion in female athletes requires further assessment.

ATRIAL FIBRILLATION ABLATION IN A DISTRICT GENERAL HOSPITAL: 3 YEARS EXPERIENCE

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Introduction The practice of atrial fibrillation (AF) ablation is increasing exponentially. At present, these procedures are performed in a small number of surgical tertiary centres. In order to meet the growing demand it will be necessary to expand this service. We sought to assess patient satisfaction, procedural success and complication rates for AF ablation performed via a newly established district general hospital (DGH) service.

Methods We prospectively surveyed patients undergoing AF ablation, between November 2007 and November 2010, at Eastbourne DGH. Patient symptoms were assessed before and at least 12 months after AF ablation by telephone questionnaire, procedural satisfaction was also assessed. Procedural details (procedural time, fluoroscopy time, ablation technique) and complications were all accurately recorded for every case.

Results 278 patients 314 procedures (average 1.13 procedures/pt) were performed (160 for persistent AF [PersAF], 134 for paroxysmal AF [PAF]). Mean age 63±7-10.7 years, 70% male. Of the PAF cases 75 procedures were performed with the PVAC (Medtronic, USA) and 56 with the Mesh (Bard, USA) catheter. The remaining three
063 Sex and ethnicity specific ECG differences in elite athletes: relevance to pre-participation cardiovascular evaluation: the British experience

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