magnetic resonance. Detailed lifestyle information and anthropometric measurements were collected during childhood and adolescence. Metabolic parameters were measured multiple times per week for the first 9 weeks of life and again at follow-up visits.

**Results** Individuals that received IV lipids achieved significantly higher maximum cholesterol levels during the first 9 weeks of life than those that did not (mean±SD=4.38±1.65 vs 3.12±0.78 mmol/l, p=0.006). Dose given and number of days on IV lipids also associated with maximum cholesterol level during this period (r=0.557, p<0.001 and r=0.567, p<0.001, respectively).

There was a graded relation between the maximum elevation in circulating cholesterol postnatally and aortic stiffness (aPWV) in young adulthood (r=0.596, p<0.001). The greatest increase in stiffness was seen in the abdominal aorta, where distensibility was significantly reduced in the group that received IV lipids (mean±SD=9.74±4.27 vs 12.91±4.11/mm Hg×10⁻⁶, p=0.012). There were no differences between the groups in other vascular or left ventricular measures. In a stepwise regression model, maximum cholesterol level achieved in the first few weeks of life was an independent predictor of aPWV in young adulthood (β=0.596, p<0.001) and accounted for 30.9% of the variance in hierarchical multiple regression (β=0.584, p<0.001).

**Conclusions** Brief artifactual elevation of cholesterol level in immediate postnatal life is associated with long term changes in aortic function independent of later cholesterol levels. The association is graded depending on the degree of elevation of circulating cholesterol. High cholesterol exposure during sensitive periods of early postnatal life may have long term impacts on the cardiovascular system.

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**ETHNIC DIFFERENCES IN REPOLARISATION PATTERNS AND LEFT VENTRICULAR REMODELLING IN HIGHLY TRAINED MALE ADOLESCENT (14–18 YEARS) ATHLETES**

**Purpose** Studies in adult, black athletes (BA) demonstrate a high prevalence of ECG repolarisation changes and echocardiographic left ventricular hypertrophy (LVH) that may overlap with hypertrophic cardiomyopathy (HCM). The prevalence of ECG repolarisation changes and echocardiographic LVH in adolescent BA, the group most vulnerable to exercise-related sudden death from HCM, is unknown.

**Methods** This study evaluated 219 male adolescent BA (14–18 years, inclusive) with 12-lead ECG and 2-D echocardiography. Results were compared with 1440 male adolescent WA. Athletes with T wave inversions and morphological LVH were invited for further investigation with exercise stress test, 24 h Holter and CMR.

**Results** ST segment elevation was common in both groups but more frequent in BA (65.3% vs 14.9%, p<0.001), while ST segment depression was exceedingly rare. Both T wave inversions (21.5% vs 2.9%, p<0.001) and deep T wave inversions (11% vs 0.8%, p<0.001) were commoner in BA. Black athletes demonstrated greater left ventricular wall thickness (10.4±1.6 vs 9.4±1.2 mm, p<0.001) compared to WA. Twenty-three (10.5%) BA exhibited a left ventricular wall thickness >12 mm vs only 6 (0.4%) WA (p<0.001).

None of the athletes exhibited the broader phenotype of HCM on further investigation. In multivariable analysis, black ethnicity was the strongest independent predictor for the presence of T wave inversions (OR 5.56, 95% CI 1.56 to 18.13, p=0.005) and LVH (OR 3.17, 95% CI 1.77 to 5.71, p<0.001).

**Conclusions** As with adult athletes, T wave inversions and LVH were more prevalent in adolescent BA compared to WA. These findings have important implications in the pre-participation screening era, particularly in countries with a high proportion of BA competing at elite level, since extrapolation of ECG and echocardiographic criteria, solely derived from Caucasian cohorts, would result in 25.6% of BA requiring further investigations for cardiac pathology.
Atrial fibrillation (AF) confers a 5-fold risk of stroke and the risk of death from AF-related stroke is doubled; it is the most commonly sustained cardiac arrhythmia, occurring in 1%–2% of the general population. Meta-analysis of anti-platelet therapy demonstrate a non-significant 19% reduction in the incidence of stroke, proving oral anticoagulation (OAC; such as warfarin) to be far superior (64% relative risk reduction) in stroke prevention. Recent guidelines have been published by the European Society of Cardiology (ESC) which focus on the most effective antithrombotic therapy in AF and propose a new risk scoring system, the CHA2DS2-VASc score. In our institution the prescription and documentation of antithrombotic therapy in AF has been the focus of a previous audit that demonstrated poor compliance with the guidelines and documentation of decision making. The focus of this audit was twofold: first to determine whether compliance with the guidelines and documentation had improved and second determine the effect of the new risk scoring system on prescription of OAC. A random 10% of cases of patients discharged with a coding diagnosis of AF were selected (125 cases). They were risk assessed using the NICE 2006 stroke risk stratification, CHADS2 and CHA2DS2-VASc score.

In all cases the agent used for thromboprophylaxis was reviewed as appropriate choice of thromboprophylaxis if the NICE guideline was unchanged (30.0% vs 31.0%). The proportion not requiring further testing was 25.6% vs 13.4%; and for invasive coronary angiography 0.0% vs 14.7%; for functional imaging 25.6% vs 13.4%; and for invasive coronary angiography 0.0% vs 14.7%. The proportion of the study population before and after the application of NCG 95 was 50.1% vs 0.0%; for calcium score/CT coronary angiography should be offered. If 30%–60%, functional imaging should be offered, and if 10%–29%, CT calcium scoring should be offered. We determined the number and types of different investigations to diagnose coronary artery disease in patients referred with suspected cardiac pain before the publication of NCG 95 and compared this with the predicted investigations after the application of the guidelines.

**Results** The proportion of the study population before and after the guidelines undergoing exercise testing was 50.1% vs 0.0%; for calcium score/CT coronary angiography 0.0% vs 14.7%; for functional imaging 25.6% vs 13.4%; and for invasive coronary angiography 15.5% vs 25.8%. The proportion not requiring further testing was unchanged (30.0% vs 31.0%).

**Conclusions** Application of NICE CG95 will change the investigation of patients with chest pain substantially. A significant reallocation of resources will be required. Exercise testing will be replaced by anatomic or functional imaging. CT coronary angiography will play an important role and replace functional imaging in some patients. Invasive angiography will take on a more important role in the diagnosis of coronary artery disease. It will, however, empower us to reassure almost a third of referrals that they do not have angina on clinical assessment alone.