

Electrocardiographic and Echocardiographic Findings in Black Athletes: A General Review.

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Abstract

BACKGROUND:

Participation in regular physical activity produces electrophysiological and structural cardiac changes in electrocardiograms (ECGs) and echocardiographs (ECHOs) of athletes, and the term "athlete's heart" is used to describe these physiological cardiovascular adaptations. Extent and type of sporting discipline, age, sex, body dimensions, and ethnicity have an influence on cardiac remodeling.

OBJECTIVE:

As the recent scientific literature increasingly reports on ethnicity-specific ECG and ECHO findings in black athletes, it is the aim of this review to provide an overview of ECG and ECHO findings among athletes of black African/Afro-Caribbean descent.

DATA SOURCES:

A systematic search of PubMed and MEDLINE databases up to and including August 2017 was conducted using the following terms/phrases "black OR African OR Afro-Caribbean athlete heart," "black OR African OR Afro-Caribbean athlete electrocardiogram," and "black OR African OR Afro-Caribbean athlete echocardiogram." The search generated a total of 130 papers, out of which 16 original articles fitted our criteria and were selected for this review.

MAIN RESULTS:

The various studies reviewed revealed that about 10% to 30% of black African/Afro-Caribbean athletes had abnormal ECG. R/S voltage criteria exceeding hypertrophic indices were found in about 60% to 89% of black African/Afro-Caribbean athletes. ST-segment elevation (17%-90%) and T-wave inversions were also common findings among this ethnicity. About 10% to 12% of black African/Afro-Caribbean athletes had a left ventricular wall thickness ranging from 13 to 15 mm. Cavity dimensions ranged from 40 to 66 mm in black African/Afro-Caribbean athletes with a relative wall thickness >0.44.

CONCLUSIONS:

Updated ethnic-specific guidelines are required to discriminate physiological from pathologic hypertrophy and repolarization changes. Future studies should focus on homogeneous cohorts of African athletes