

Left ventricular hypertrophy detection from simple clinical measures combined with electrocardiographic criteria in a group of African ancestry

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Abstract

BACKGROUND:

Whether routine clinical parameters associated with left ventricular mass (LVM) enhance the performance of electrocardiographic (ECG) criteria for LV hypertrophy (LVH) detection and hence modify overall cardiovascular risk stratification is unknown.

METHODS:

An approach to echocardiographic LVH detection was identified from ECG criteria and clinical variables [age, body mass index (BMI), systolic blood pressure (SBP) and estimated glomerular filtration rate] associated with LVM in 621 participants of African ancestry. Performance (area under the receiver operating curve) and classification accuracy for LVH detection and the impact on cardiovascular risk stratification were determined.

RESULTS:

Compared to Cornell criteria alone, the combined use of Cornell criteria and clinical variables increased the performance ($p < 0.001$) and sensitivity ($p < 0.05$ to $p < 0.0001$) for LVH detection. The use of Cornell product together with additional clinical parameters as compared to Cornell product criteria alone increased the proportion of participants with pre-, grade I or grade II hypertension risk stratified as having a high added cardiovascular risk (56.3-67.9 %, $p < 0.05$).

CONCLUSIONS:

In individuals of African ancestry, a combination of Cornell product criteria and age, BMI and SBP improves classification accuracy of Cornell criteria for LVH and increases those identified as having a high added as compared to lower cardiovascular risk scores.