Circulation

CORE 2. EPIDEMIOLOGY AND PREVENTION OF CV DISEASE: PHYSIOLOGY, PHARMACOLOGY AND LIFESTYLE
SESSION TITLE: ARRHYTHMIAS AND SUDDEN DEATH

Abstract 19765: Efficacy of the American Heart Association Questionnaire in Identifying Electrocardiographic and Echocardiographic Abnormalities in Young Athletes During Community-based Screening

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Abstract

Abstract: Sudden death in young athletes remains a distressing societal problem. The American Heart Association (AHA) 12-point questionnaire (AHAQuest) has been recommended as a cost-effective initial step in pre-participation screening for athletes. We prospectively tested the efficacy of the AHA approach in a comprehensive,

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multi-modality community-based screening program.

Methods and results: Total 554 athletes (336 boys, mean age 16.7+/-1.5 and 218 girls, mean age 16.3+/- 1.3) participating at state level athletic meets answered the AHAQuest, underwent heart auscultation, blood pressure measurement, electrocardiography (ECG) and echocardiography (echo). All tests were reviewed by experienced cardiologists and adjudicated into normal, borderline and abnormal. Sensitivity and specificity of AHAQuest for identification of borderline and abnormal findings was 48% and 40% for echo only, 57% and 41% for ECG only, and 57% and 43% for combined echo and/or ECG, respectively. The proportion of "positive" and normal responses to AHAQuest were similar whether pathology was identified or not by echo or ECG. Accordingly, there was no significant association between AHAQuest and echo, ECG or combined echo-ECG abnormalities (p values by Fisher's exact and N-1 Chi-squared tests were 0.13 and 0.11; 0.69 and >0.5; 1.0 and >0.5, respectively).

Conclusions: AHAQuest has low sensitivity and specificity for prediction of ECG or echo findings in community-based screenings. Although low-cost, the efficacy of AHAQuest as a sole initial screening tool for cardiac pathologies is questionable.

Table 1: Distribution of Normal and Abnormal Results of each screening method (Questionnaire with EKG, ECHO and EKG+ECHO) in absolute numbers and percentage.

Questionnaire	EKG Normal	EKG Abnormal	Total	*P* value
Normal	132(33%)	30(7%)	162(40%)	0.6874
Abnormal	193(49%)	39(11%)	232(60%)	
Total	325(82%)	69(18%)	394(100%)	
	Echo Normal	Echo Abnormal	Total	
Normal	153(36%)	21(5%)	174(41%)	0.129
Abnormal	234(55%)	19(4%)	253(59%)	
Total	387(91%)	40(9%)	427(100%)	
	Echo + EKG Normal	Echo + EKG Abnormal	Total	
Normal	175(33%)	53(10%)	228(43%)	1.0
Abnormal	230(43%)	71(14%)	301(57%)	
Total	405(76%)	124(24%)	529	

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