

LETTER TO THE EDITOR

ECG CHANGES IN ASYMPTOMATIC HEALTHY MALES

Sir,

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Electrocardiography began as a physiologic curiosity but soon its usefulness was recognized and it became an important tool for the cardiologists. The normal range of ECG waves, reported in the literature has been recorded from the hospitalised subjects admitted for disease other than that of cardiovascular system. The present study was designed to observe the electrocardiographic pattern in normal young adult males. Two hundred healthy medical students of Srinagar Medical College were selected for the study after a thorough general physical examination to exclude any abnormality, their age ranged from 18 to 25 years. A 12 lead standard electrocardiogram (ECG) was recorded

by cardiosun 5010 electrocardiograph. ECGs were analysed according to the criteria laid down by the American Heart Association (1, 2). Special emphasis was laid on the QRS frontal axis, ventricular activation time, and the voltage of R wave in Lead I, aV_L , AV_F , V_3 or V_6 and of the S wave in Lead III, aV_F , V_1 and V_2 .

ECG changes not consistent with normal were observed in 24 subjects. The ECG records of these were further analysed according to Murphy's multiple electrocardiographic criteria (3) Nineteen (9.5%) ECG showed only one abnormal finding and five (2.5%) showed multiple abnormalities (Table I). Murphy (3)

TABLE I : Voltage abnormalities in the present study using Murphy's multiple criteria (3).

Observation	n	Electrocardiographic abnormality	% of the total cases
1) One Major Criterion	19	$SV_1 + RV_3 > 35$ mm	8
		V.A.T. > 0.05 sec	0.5
		$PV_1 > 1$ mm	1
2) Two Major Criteria	1	$SV_1 + RV_3 > 35$ mm + V.A.T. > 0.05 sec.	0.5
3) Two Major and one Minor Criteria	2	$SV_1 + RV_3 > 35$ mm	0.5
		+	
		$RV_1 > 1$ mm	
		+	
		$SV_1 + RV_5 > 35$ mm	
4) One Major and one Minor Criteria	2	V.A.T. > 0.05 sec.	0.5
		+	
		QRS duration > 0.09 Sec.	
		$PV_1 > 1$ mm	
		+	
		Left axis deviation	
		VAT < 0.05 sec	
		+	
		QRS duration > 0.09 sec	0.5
	24		12%

Note : Positive for left ventricular hypertrophy if one major and one minor criteria present. Positive even if only one major criteria is present.

has reported that these abnormal changes in ECGs are significant indicators of the left ventricular hypertrophy. However, none of these subjects had any clinical finding suggestive of LVH. Considerable difference of opinion is reported in literature with regard to the values of these changes in QRS voltage in the electrocardiographic diagnosis of LVH. Manning (4) and Silverman (5) had also observed high voltage changes in normal subjects but no explanation for such changes was

given by them. Mathew (6) Rabkin (7) and Lanti (8) suggest that high voltage changes, once detected in the ECG of normal adults, could be the earliest manifestation of a developing LVH and predict the risk of sudden death. A high percentage of abnormal ECGs that has been observed in the present study is quite alarming but since this is only a preliminary observation, studies on wider group of population with yearly follow up, is necessary.

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