



IS THE USE OF ECG AS A SCREENING TOOL FOR LVH VALID IN HYPERTENSIVE INDIVIDUALS

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KEYWORDS :

INTRODUCTION

Undiagnosed and inadequately controlled HTN is one of the most important causes of major morbidity and mortality⁽¹⁾. It is estimated that around the globe there are about one billion those people who are affected with HTN in the world and it is approximated that HTN contributes to around seven million deaths annually⁽²⁾. As per World Health Organization reports, sixty two percent of the CVA and 49 percent of IHD due to the result of sub-optimal control of the blood pressure with the systolic blood pressure more than 115 mm of mercury^(3,4). In the Indian subcontinent HTN is an up - coming public health problem. In the background of the changing SES and the changes that have taken place in the life style of Indians as a result of the adaptation of the western culture^(5,6) One of the most frequent health problems that are seen in by a primary health care physician in India is the blood pressure. Electrocardiography is useful to detect LVH and it has some advantages like low cost, simplicity and almost ubiquitous diffusion . India is a developing country with the available resources at the primary physician level the best care needs to be given . The cardiovascular damage in hypertension cases is the most important one that need to be addressed early and at the best easily available modality not all areas in India especially the rural areas of the interior are lack the facilities for advanced cardiac care and ECHO

In view of the above scenario, the present study was done to analyze clinical evaluation , ECG and echo in the assessment of left ventricular hypertrophy in patients with hypertensive patients.

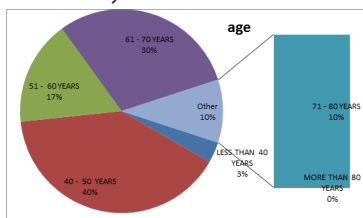
Materials and methods

The study was a prospective non randomized cross sectional study whose population consisted of consecutive consenting patients of both sexes of all ages who have cardiology OPD at father Muller tertiary care Hospital, with SBP more than 140 mm of mercury and DBP more than 90 mm were recruited prospectively during a period of 24 months between January 2016 to December 2018 .All patients underwent blood pressure recording in right brachial artery in sitting posture by mercury sphygmomanometer. ECG and echocardiogram was done in recruited patients. Following criteria were used for detecting LVH . Sokolow-Lyon index S in V1+R in V5 or V6>35 mm & Cornell voltage criteria

S in V3 + R in aVL > 24 mm (men), S in V3 + R in aVL > 20 mm (women). Transthoracic Echocardiogram criteria for LVH was based on LV mass and septal thickness groups were done with and without acute exacerbation of COPD

RESULTS AND OBSERVATIONS

A total of 160 patients admitted to the hospital or attending outpatient department with documented SBP more than 140 mm of mercury and DBP more than 90 mm all hypertensive patients were recruited in the study.



GENDER DISTRIBUTION IN YEARS IN THE STUDY	FREQUENCY
FEMALE	40
MALE	120

In the present study ,we had 40 females and 120 males, when we evaluated the findings suggestive of LVH on ECG among we found that 96 cases (60 %). Echocardiographic LVH criteria were satisfied in 110(68.7%) cases. Amongst patients with ECG detected LVH , 91(95.1%) patients satisfied echocardiogram evidence of LVH. The present study found a sensitivity 67% and specificity 93% by total QRS voltage criteria. The present study found sensitivity 38% and specificity 75% of Sokolow-Lyon index

DISCUSSION

In the present study when we evaluated the age distribution of the cases in the study we found that most cases of hypertension were in the age group of 40- 50 Years Thomas Dieterle in 212 patients with newly diagnosed essential hypertension found that the mean age was 53.2 years, ranging from 25 to 82 years which is similar to our study their mean ages was 59.7 years respectively⁷ Meenakshisundaram et al evaluated a total of 147 consecutive patients with newly diagnosed essential hypertension there were 79 males (M) and 68 females , which is similar to our study⁸ .

The prevalence of LVH was found to be greater in males, especially among those with increased BMI and smoking history. This agrees with earlier studies Patients with one or other components of metabolic syndrome or diabetes often have hypertension, which in turn increases the risk of cardiovascular disease and nephropathy. Hence, our study emphasizes to initiate regular check up and monitoring of blood pressure from an earlier age and further to analyze microalbuminuria in all hypertensive patients as a strong predictor of cardiovascular risk and TOD.

Ayodele, O. E., et al showed that 62 % newly diagnosed essential hypertension had LVH, 47.7% males and 37.8% females⁹

Thomas Dieterle in 212 patients with newly diagnosed essential hypertension LVH was present in 21.2% of all patients⁷. In the present study when we evaluated the findings suggestive of LVH on ECG among subjects in the study we found that most cases were 48 cases 80 percent⁷ .

Meenakshisundaram et.al found increased left ventricular (LV) mass was seen in 68%) of newly diagnosed essential hypertension, this correlates with our study⁸ The relationship of ECG and cardiac hypertrophy was demonstrated by Carter and Estes who co related the total gross cardiac weight with the ECG findings as early as the year 1964⁽¹⁰⁾.

The present study found a sensitivity 67% and specificity 93% by total QRS voltage criteria. The present study found sensitivity 38% and specificity 75% of Sokolow-Lyon index.

Singh et al in their study stated that the Sokolow-Lyon criteria on ECG had a Sensitivity of 38 % and a Specificity of 75 %⁽¹¹⁾

CONCLUSION

Electrocardiography is a good tool to detect LVH and can be used in the Indian subcontinent to detect the cardiovascular damage in hypertension early and easily

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