

## A Study on Significance of Assessment in Left Ventricular Dysfunction of Ischemic Stroke Patients

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### ABSTRACT

Ischemic heart disease is a common underlying cause of heart failure caused by left ventricular dysfunction arising from myocardial ischemia or infarction. IHD is where atherosclerosis affects the coronary arteries in the heart. The purpose of this study was to collect the ischemic stroke patients with LV dysfunction, to gather the changes in the clinical parameters in LV dysfunction patients, to find out the various risk factors in LV dysfunction patients. This is a retrospective study conducted over a period of 6 months. Our study included 142 patients diagnosed with ischemic stroke. A wide range of patients were involved in the study whose age group ranges from 50 to above 70 years. According to our study, the overall patient's demographics of sex distribution in the study are, 94 patients were males (66%) and 48 patients were females (34%). In our study we concluded that ischemic stroke patients were most observed between 51-60 years of age followed by patients aged 61-70 years. According to this male were more when compared with females. Patients with NYHA class III and IV symptomatic heart failure correlated with left ventricular systolic dysfunction and clinical morbidity in ischemic stroke patients.

**Key words:** Ischemic heart disease, LV dysfunction, Heart failure, myocardial ischemia, atherosclerosis

### I. INTRODUCTION

The major risk factors for the stroke are the cardiac diseases and then cardiogenic related stroke risk [1]. The acute ischemic stroke risk is associated with mild to moderate degree of left ventricular

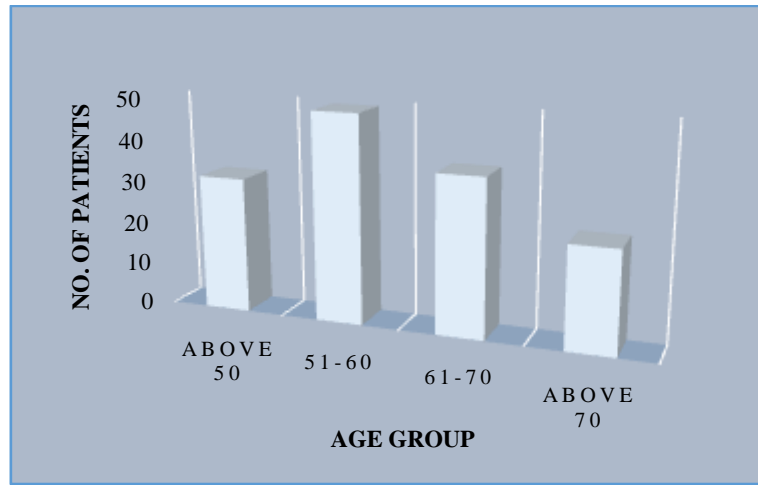
dysfunction, prior to myocardial infarction, its correlation with ischemic stroke was mostly observed [2-3]. The patients who are at high risk of developing LVSD are those with ischemic heart disease, hypertension, diabetes, and smokers. CAD and diabetes mellitus had correlation with LV systolic dysfunction [4-5]. A more cost-effective approach may be to do this at the first presentation of a vascular episode and perform routine echocardiography at that time. MI patients are now screened for LVSD during hospitalization, but patients with a history of CVA and TIA are not routinely screened for LVSD. Thus, the first vascular attack in the form of a stroke can be an opportunity to detect and treat LVSD and thus reduce the incidence of heart failure. [6-8].

### II. METHODOLOGY

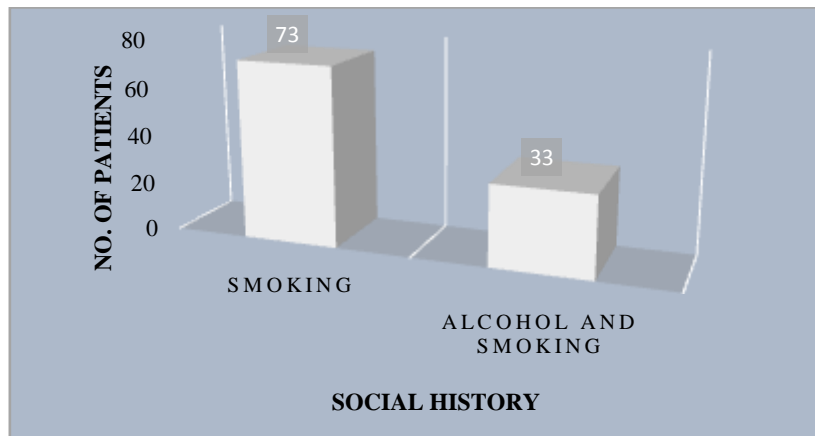
The research conducted at Vivekananda super specialty hospital, Narasaraopet, was a Retrospective study over a period of six months. Inclusion criteria comprised all the adult inpatients aged 50 years and above were diagnosed with LV dysfunction and the patients who are willing to participate in the study. Exclusion criteria included patients under 50, pregnant women, and the patients who are not willing to participate in the study. Data for the study was obtained and analyzed from inpatient records and the medical record department.

### III. RESULT AND DISCUSSION

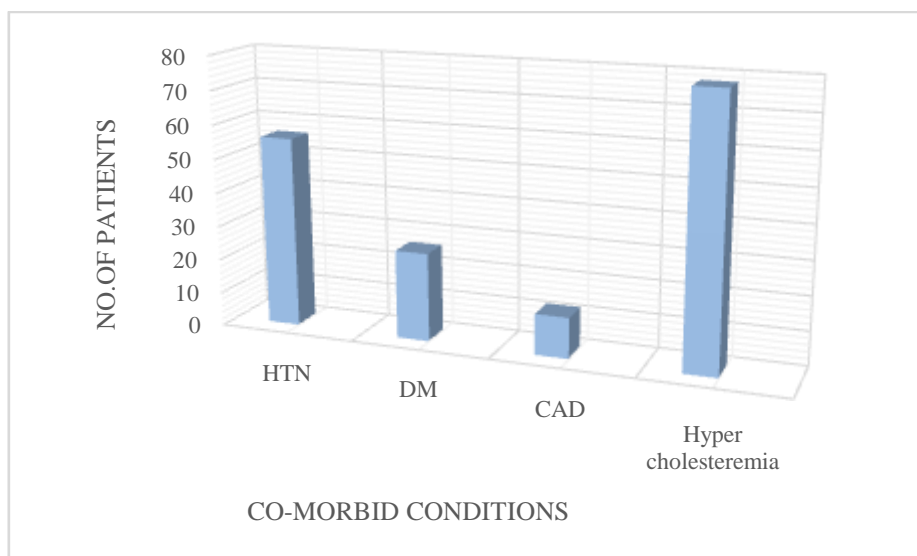
The present study containing 142 patients with different age groups on that 94 patients were males (66%) and 48 patients were females (34%).



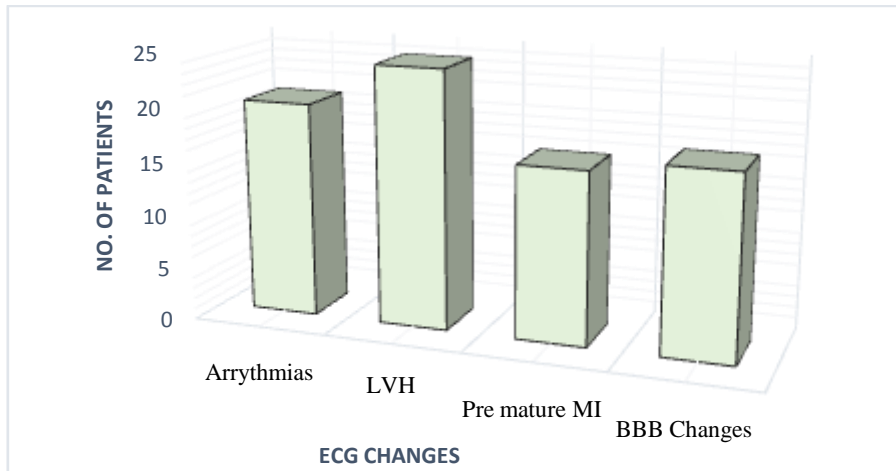
**FIGURE-1:** Based on Age in distribution



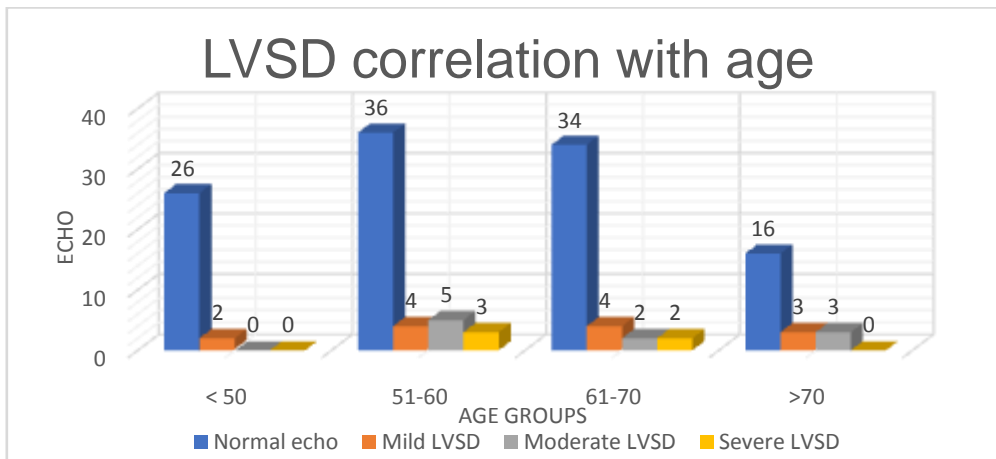
**FIGURE- 2:** No. of patients Vs social history(Based on Risk Factors)



**FIGURE-3:** No of patients Vs Co-Morbid conditions



**FIGURE4:** No. of patients Vs ECG changes (Based on ECG changes)



**FIGURE 5:** Based on LVSD correlation with age

Higher percentage of ischemic stroke were most observed between the ages group of 51-60 and we can state that the people between these age groups are more prone to ischemic stroke. (Fig. 1).The risk factors based on social history in our study out of 94 men 73 (73%) patients were chronic smokers, associated history of chronic alcohol intake was seen in 33(33%) male patients. (Fig.2).Co-morbidities associated with our study population were hypocholesteraemia (45%) was found in most of the cases, followed by hypertension (32%), diabetes mellitus (15%), CAD (6%), (Fig.3.).ECG changes associated with our study population were LVH with a highest percentage of (31%), followed by arrhythmias (26%), pre mature MI (20%), BBB changes (22%). (Fig.4.).LVSD Correlation with age that means the ECHO changes were more observed in between 51-60 age group patients, when compared to <50 patients followed by 61-70 and <70 age group

patients. (Fig.5.).

#### IV. CONCLUSION

Hypercholesterolemia was observed as the most common risk factor among the ischemic stroke patients. Coexisting coronary artery disease and diabetes mellitus had positive correlation with left ventricular systolic dysfunction. Patients with symptomatic heart failure of NYHA class III and IV had a positive correlation with left ventricular systolic dysfunction and clinical morbidity in ischemic stroke. ECG changes of previous MI had statistically significant correlation with left ventricular systolic dysfunction. LV diastolic dysfunction was associated with in patient mortality which was statistically significant.

**Conflict of interest:** Nil

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