Journal of Cardiovascular Disease Research

ISSN: 0975-3583, 0976-2833 || VOL 16, ISSUE 03, 2025

A STUDY ON PREVALENCE OF DILATED CARDIOMYOPATHY IN CHRONIC ALCOHOLICS

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ABSTRACT :

Background: Chronic Alcoholism is rampant in Western Societies. But the alarming feature is that it is also rising in epidemic proportions in developing countries including our country. The main problem with chronic alcoholism is that many of its effects on body systems are usually irreversible. So if we consider the overall effects of alcohol on heart, various studies clearly establish that, whatever the benefits alcohol offer to heart only minimal and that too transient and questionable whereas the evils it imparts are unquestionably very high.

Methods: Data collected from Department of General Medicine of Sree Mookambika Institute of Medical sciences, kanyakumari, tamil nadu, from march 2022 to september 2023. inclusion criteria is normal weight individuals aged 21 to 50 years attending medicine opd.Exclusion criteria are Patients with history of Ischemic heart disease, ECG changes suggestive of Ischemic heart disease,Patients with the following medical problems,Systemic hypertension Diabetes mellitus Bronchial Asthma Renal disease,Gross nutrional disorders,Liver disease,Hyper calcemic states Hyper cholesterolemia,Thyroid disease and other endocrine problems.

Results: In this study of seventy cases of chronic alcoholism, twelve cases of dilated cardiomyopathy were noted. Though there are numerous other causes of dilated cardiomyopathy, certain factors are against those (obviously peripartum dilated cardiomyopathy would not interfere in this study because only males are taken into account). Patient with ischemic heart disease are not included in this study.

Conclusion: This study results roughly correlate with the seychelles study conducted by victoria hopital. in this study the prevalence was 20%.This prevalence rate is definitely high when compared

ISSN: 0975-3583, 0976-2833 || VOL 16, ISSUE 03, 2025

to the prevalence of alcoholic dilated cardiomyopathy in normal population which is twenty per one lakh.

Keywords: alcoholic dilated cardiomyopathy,

INTRODUCTION:

Chronic Alcoholism is rampant in Western Societies. But the alarming feature is that it is also rising in epidemic proportions in developing countries including our country. The main problem with chronic alcoholism is that many of its effects on body systems are usually irreversible. As mentioned earlier this study is concentrated mainly around the incidence of dilated cardiomyopathy in chronic alcoholics which manifests as increase in dimension of all four chambers of heart as well as congestive cardiac failure.

However, the hypercontractility of heart muscle seen in earlier stages is usually reversible. Moreover, small doses of alcohol taken daily with adequate diet is thought to be beneficial to heart as it decreases the incidence of cardiovascular death, perhaps by decreasing the incidence of coronary artery and heart disease through its actions on HDL cholesterol and changes in clotting mechanism (23).But it is very difficult to control or regularize the daily intake of alcohol in people and moreover even low doses of alcohol if taken for a long time is found to increase the cardiovascular morbidity definitely by (8) Depressing myocardial contractility, cardiac oxygen consumption,Increased incidence of arrhythmias,Changes in blood pressure (usually increase).

So if we consider the overall effects of alcohol on heart, various studies clearly establish that, whatever the benefits alcohol offer to heart only minimal and that too transient and questionable whereas the evils it imparts are unquestionably very high (8). So this study is done to highlight only one of the many evil effects of alcohol i.e. on the cardiac muscle.

AIM AND OBJECTIVES OF THE STUDY:

The Aim of this study is to find the prevalence of dilated cardiomyopathy in chronic alcoholics and to analyse the number of cases by alcoholic etiology.

MATERIALS AND METHODS:

Data was collected from patients attending the Department of General Medicine of Sree Mookambika Institute of Medical sciences, kanyakumari, tamil nadu, from march 2023 to september 2024. inclusion criteria is normal weight individuals aged 21 to 50 years attending

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Exclusion criteria are Patients with history of Ischemic heart disease, ECG changes suggestive of Ischemic heart disease,Patients with the following medical problems,Systemic hypertension Diabetes mellitus Bronchial Asthma Renal disease,Gross nutrional disorders,Liver disease,Hyper calcemic states Hyper cholesterolemia,Thyroid disease and other endocrine problems.

Statistical analysis was done using the statistical package for social sciences (SPSS).Different statistical methods were used as appropriate. Mean ± SD was determined for quantitative data and frequency for categorical variables. The independent t- test was performed on all continuous variables. The normal distribution data was checked before any t-test. The Chi-Square test was used to analyze group difference for categorical variables. In logistic regression models, age was adjusted for estimation of each or all the independent effects of hypertension, ischemic heart disease and diabetes mellitus . A p- value < 0.05 was considered significant.

RESULTS:

GENERAL EXAMINATION

Signs	Present in	%
Obesity	42	60%
Undernourishment	None	0%
Anemia	None	0%
Jaundice	None	0%
Clubbing	None	0%
Cycosis	7	10%

ISSN: 0975-3583, 0976-2833 || VOL 16, ISSUE 03, 2025

Cutaneous stigmata of chronic alcoholism	15	20%
Elevated JVP	6	9%

It is to be noted that from the above tables that certain findings such as hypertension, shock, anemia, jaundice etc. are not present in this study. This is because cases are selected to avoid unnecessary influence of extraneous forces over the out come of study.

SYSTEMIC EXAMINATION

Signs	**Present in**	**%**
Apical Impulse (Down and Outward Shift)	12	17%
Auscultatory Signs of MR/TR	10	14%
S3/S4 Gallop	6	9%
Hepatomegaly a)Tender b)Non Tender	 6 16	 9% 21%
Basal rales	14	20%
Small Volume pulse	10	14%

ISSN: 0975-3583, 0976-2833 || VOL 16, ISSUE 03, 2025

Hypertension	0	0%

It is to be noted from above table that certain findings like non tender hepatomegaly and basal crepts are non specific. As non tender hypatomegaly in alcoholics may be due to fatty infiltration of liver and basal crepts may be due to respiratory infection apart from cardiac failure. Patients with hypertension are already excluded in this study because of unnecessary bias.

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Type of Tachyarrhythmias	Present in	%
Ventricular ectopics	2	3%
Atrial Fibrillation	4	6%

Type of block	No. of cases	%
First degree block	1	1.5%
Complete heart block	1	1.5%
LBBB	2	3%
LAHB	1	1.5%

CHEST X RAY

Findings	Present in	%

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Cardiomyopathy	12	17%
Pulmonary hypertension	6	9%
Alveolar edema	2	3%

It is to be noted from the above table that pulmonary hypertension and alveolar edema are present in patients with cardiac failure and particularly alveolar edema in patients with severe heart failure.

ECHO/DOPPLER:

Findings	**Present in**	**%**
Enlargement of all 4 chambers	12	17%
Increased end systolic volume	8	11%
Ejection fraction < 50	8	11%
Thrombus in chambers	1	1.5%
Mitral and tricuspid regurgitation	10	14%

Above table gives information that although 12 patients are known to have DCM only 8 patients have cardiac failure as evidenced by their echocardiogram finding, increased end systolic volume and ejection fraction <50%. One patient had thrombus in left ventricle.

DISCUSSION:

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In this study of seventy cases of chronic alcoholism, twelve cases of dilated cardiomyopathy were noted. Though there are numerous other causes of
dilated cardiomyopathy, certain factors are against those (obviously peripartum dilated cardiomyopathy would not interfere in this study because only males are taken into account). Patient with ischemic heart disease are not included in this study. Patients on long term drug therapy (any drug) and toxin exposure are not taken, so the problem of drug factor is also ruled out.

Glycogen storage diseases are unlikely in this study as they are seen almost exclusively in paediatric age group whereas in this study all the patients are above thirty. Muscular dystrophies are ruled as there were no signs and symptoms of muscle weakness in any patients. Infections also cause dilated cardiomyopathy notably viral infections. Only endomyocardial biopsy can distinguish between these two.

But again infections causing myocarditis are more common in younger age group and the course is usually sudden with rapid progression to cardiac failure whereas alcoholic cardiomyopathy has a typical insidious onset with slow progression of cardiac failure which is usually very difficult to control with drugs.

So among the left out causes of dilated cardiomyopathy the granulomas and connective tissue disease are unlikely as they all have systemic
manifestations. So also are the deficiency states and metabolic problems like hypo / hyperthyroidism. So only two are now left with. They are the idiopathic and familial varieties. They are quiet rare and their etiological contribution is very difficult to prove.

In this study of chronic alcoholism the prevalence of dilated cardiomyopathy is 17% which goes roughly in parallel with the seychelles study conducted by the victoria hospital, seychelles which is till to date largest study of its kind in the world (it gives a prevalence of 20% among chronic alcoholics Regarding mitral regurgitation and tricuspid regurgitation murmurs due to ventricular dilation, observation made by SCHLANT R. state that they are found in 75% of patients with Dilated cardiomyopathy. It roughly correlates with our study also.
Arrhythmias and conduction blocks are infact known to occur very commonly in acute alcoholic intoxication also. This is called Holiday heart syndrome. Usually these patients will not have evidence of structural heart disease.
Dilated cardiomyopathy per se itself lead on to various arrhythmias.
FAUDAL H.CHENG.et al pointed that 10% of chronic alcoholics have conduction disturbances. In our study it is about 7%.

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CONCLUSION:

The main purpose of this study is to high light the prevalence of dilated cardiomyopathy in chronic alcoholics. In this study of seventy cases of chronic alcoholics dilated cardiomyopathy was noted in twelve patient this amount to prevalence of 17%.
This study results roughly correlate with the seychelles study conducted by victoria hopital. in this study the prevalence was 20%.

This prevalence rate is definitely high when compared to the prevalence of alcoholic dilated cardiomyopathy in normal population which is twenty per one lakh. This is due to selection of cases who are chronic alcoholics with symptoms relevant to cardiovascular system.

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