

## Original Research

# Evaluation Of Various Type Of Cardiovascular Risk Factors: An Observational Study

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### ABSTRACT

**Introduction:** Present era is an era of lifestyle diseases. This includes diseases like diabetes mellitus, hypertension, obesity and heart diseases. All these have one most common findings that today's modern sedentary and stressful lifestyle contributes to various type of heart diseases. **Aim and Objectives:** To evaluate various risk factors in patients diagnosed with different type of heart diseases. **Material and Methods:** The present prospective and observational study was conducted in Bharat Nursing Home, Sonipat Road, Rohtak, Haryana (India). Patients who visited to outpatient department of General Medicine with known or suspected criteria of various type of heart diseases. The total study population consists 50 coronary artery disease patients aged between 18-70 years at that time of their enrollment. **Results:** Mean age of the patients was 55.15±16.01 years. A total of 42(84%) were male and 8(16%) were female and majority of them belonged to urban areas i.e. 76%. A total of 44% patients were illiterate and 56% were literate. Forty four (88%) patients were found to be alcoholic, 38(76%) were smoker and 37(74%) were using tobacco. Mean systolic blood pressure was 128±21.85, diastolic blood pressure 96.19±14.12. mean body mass index observed was 28.14±6.45. Maximum number of patients were suffering from diabetes mellitus type I i.e. 45(90%) and 5(10%) had type II diabetes mellitus. In 38(76%) patients we observed positive family history of heart diseases. Mean haemoglobin was 11.18±2.12, mean TLC was 7771.83±1879.19, APC was 2.9±0.84, fasting blood sugar was 169.18±26.12, postprandial blood sugar was 292.19±52.11, blood urea 97.11±22.10, serum creatinine 9.12±1.87 and serum uric acid 6.12±1.87. Mean AST was 36.10±21.72 and ALT was 32.17±16.98. Mean triglycerides was 153±48.23, cholesterol was 158.39±45.16, high density lipoprotein was 37.2±29.14, low density lipoprotein was 105.21±39.19 and VLDL was 42.13±26.28. **Conclusion:** This study showed that various risk factors related to cardiovascular diseases is the major cause of death. Present study recommends improvement in life style in patients who already diagnosed with various type of heart diseases.

**Keywords:** Risk factors; Cardiovascular

### INTRODUCTION

Cardiovascular disease found to be the more common and primary cause of morbidity and mortality. Present era is an era of lifestyle diseases. This includes diseases like diabetes mellitus, hypertension, obesity and heart diseases. These all have one common thing that modern sedentary and stressful lifestyle contributes to their origin, progression and impacts. One important ongoing epidemic which is affecting both developed and developing countries, is that of heart diseases. In countries whose income are low and middle, these cardiovascular disease risk burden found to be associated with increased to the overall morbidity and mortality. A study reported that Asian Indians population who were aged between thirty five years to sixty four years lost an estimated 9.2 million years of productive life due to cardiovascular disease in 2000 and it was estimated that it will increase to 17.9 million years by 2030.<sup>1</sup> The aim of the present study was to evaluate risk factors in patients diagnosed with various type of heart diseases.

**MATERIAL AND METHODS**

The present prospective and observational study was conducted in Bharat Nursing Home, Sonipat Road, Rohtak, Haryana (India) to evaluate various risk factors in patients diagnosed with various type of heart diseases. All the patients were included in the study who visited to outpatient department of General Medicine with known or suspected criteria of various type of heart diseases. The total study population consists 50 coronary artery disease patients aged between 18-70 years at that time of their enrollment in the study.

**STATISTICAL ANALYSIS**

The data was analysed using statistical software (SPSS v. 21.0). The Numerical/Continuous data were expressed as Mean±Standard Deviation and the Categorical data were expressed as Percentages.

**OBSERVATIONS AND RESULTS**

The present prospective and observational study was conducted in Bharat Nursing Home, Sonipat Road, Rohtak, Haryana (India). A written signed informed consent was taken from all the patients prior to their enrolment in the study. A total of 50 patients were included in the study.

**Table 1: Baseline parameters of study population (n=50)**

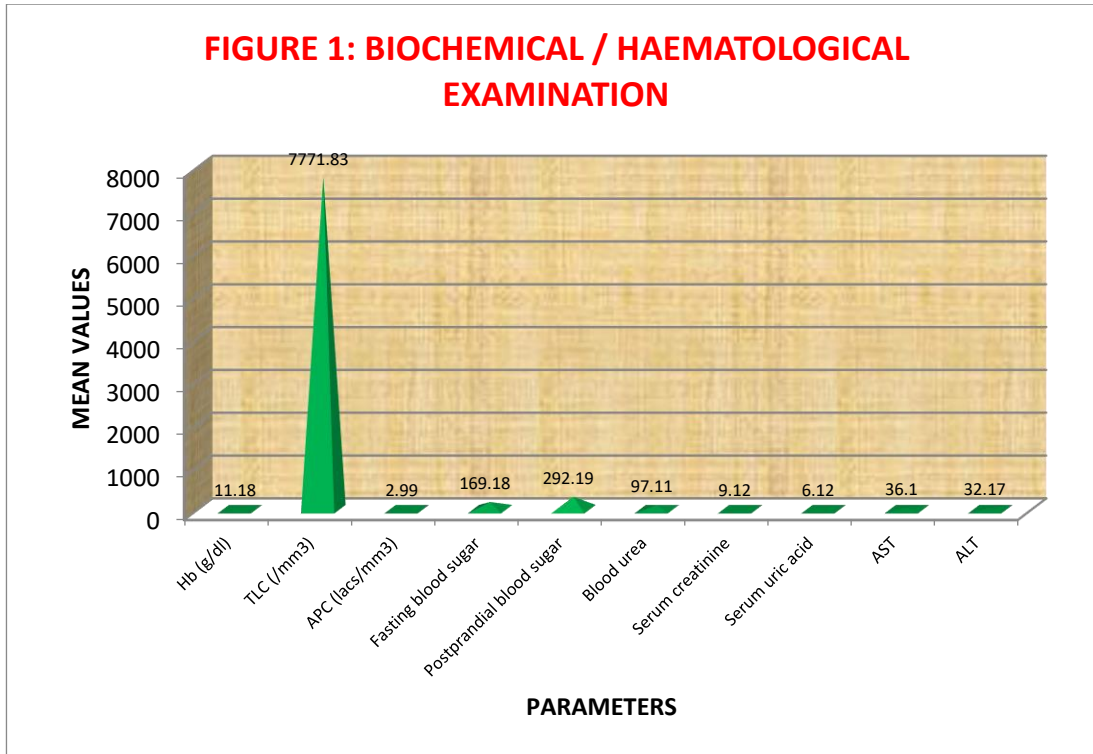
Parameters	Mean±SD / No. of patients	Percentage
<b>Mean age</b>	55.15±16.01	-
<b>Gender</b>		
Male	42	84
Female	8	16
<b>Residential status</b>		
Urban	38	76
Rural	12	12
<b>Educational status</b>		
Illiterate	22	44
Literate	28	56
<b>Addiction history</b>		
Alcoholic	44	88
Smoker	38	76
Tobacco chewing	37	74
<b>SBP (mmHg)</b>	128±21.85	-
<b>DBP (mmHg)</b>	96.19±14.12	-
<b>BMI (kg/m<sup>2</sup>)</b>	28.14±6.45	-
<b>Diabetes mellitus</b>		
Type I	45	90
Type II	5	10
<b>Family history</b>		
Yes	38	76
No	12	24

Table 1 depicts various demographic parameters observed in the present study. In the present study, mean age of the patients was 55.15±16.01 years. A total of 42(84%) were male and 8(16%) were female and majority of them belonged to urban areas i.e. 76%. A total of 44% patients were illiterate and 56% were literate. Forty four (88%) patients were found to be alcoholic, 38(76%) were smoker and 37(74%) were using tobacco. Mean systolic blood pressure was 128±21.85, diastolic blood pressure 96.19±14.12. mean body mass index observed was 28.14±6.45. Maximum number of patients were suffering from diabetes mellitus type I i.e. 45(90%) and 5(10%) had type II diabetes mellitus. In 38(76%) patients we observed positive family history of heart diseases.

**Table 2: Biochemical / haematological examination (n=50)**

Parameters	Mean±SD
Hb (g/dl)	11.18±2.12
TLC (/mm <sup>3</sup> )	7771.83±1879.19
APC (lacs/mm <sup>3</sup> )	2.99±0.84
Fasting blood sugar	169.18±26.12
Postprandial blood sugar	292.19±52.11
Blood urea	97.11±22.10
Serum creatinine	9.12±1.87
Serum uric acid	6.12±2.15
AST	36.10±21.72
ALT	32.17±16.98

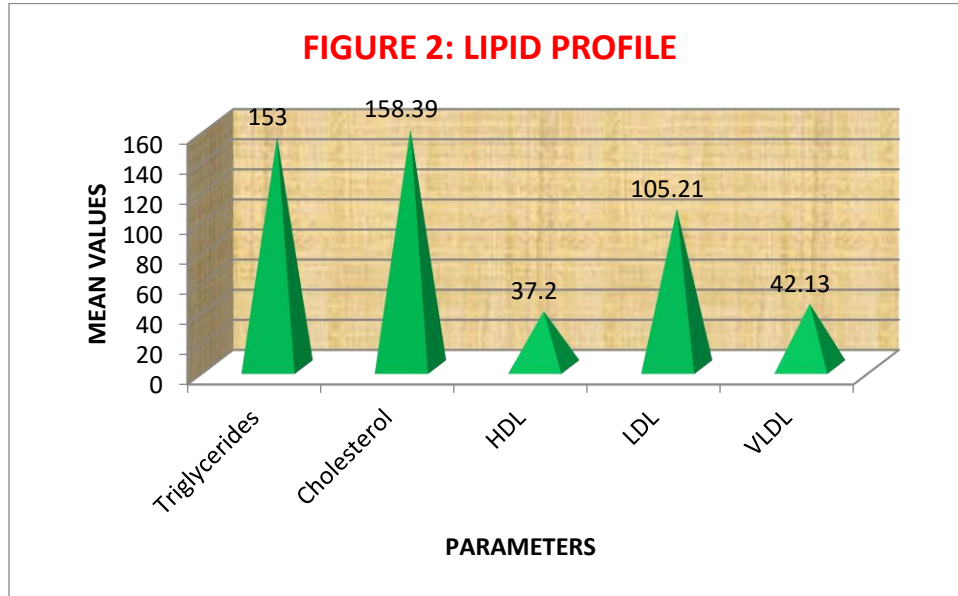
Table: 2 and Figure 1 depicts various Biochemical / haematological investigations observed in the present study. Mean haemoglobin was 11.18±2.12, mean TLC was 7771.83±1879.19, APC was 2.9±0.84, fasting blood sugar was 169.18±26.12, postprandial blood sugar was 292.19±52.11, blood urea 97.11±22.10, serum creatinine 9.12±1.87 and serum uric acid 6.12±1.87. Mean AST was 36.10±21.72 and ALT was 32.17±16.98.



**Table :3 Lipid profile (n=50)**

Parameters	Mean±SD
Triglycerides	153±48.23
Cholesterol	158.39±45.16
HDL	37.2±29.14
LDL	105.21±39.19
VLDL	42.13±26.28

Table: 3 and Figure 2 shows lipid profile examination of the study population. Mean triglycerides was  $153 \pm 48.23$ , cholesterol was  $158.39 \pm 45.16$ , high density lipoprotein was  $37.2 \pm 29.14$ , low density lipoprotein was  $105.21 \pm 39.19$  and VLDL was  $42.13 \pm 26.28$ .



## DISCUSSION

In humans, heart is the main circulatory organ which is divided into four chambers - right and left atrium along with right and left ventricle. In heart, the conduction system consists of four main components which included sinoatrial node, atrioventricular node, Atrioventricular bundle and bundle of His which transmits impulses from the SA node to the ventricular walls. The valves of heart included aortic valve, mitral valve, pulmonary valve and tricuspid valve. Blood supply is facilitated by the coronary arteries.<sup>2</sup> The main three coronary trunk which supplies blood to the heart include anterior descending branch of the left coronary artery; the circumflex branch of the left coronary artery and the right coronary artery.<sup>3</sup> The three patterns of distribution of the blood supply to the heart, mainly depends on the crux are under the right coronary artery preponderance, balanced cardiac circulation and the left coronary preponderance. Two major coronary arteries - left main & right coronary arteries. Coronary artery disease (CAD) occurs when arteries that supply the heart muscle become compromised due to the accumulation of materials such as cholesterol (plaque on the inner walls which is sometimes regressed to as atherosclerosis). Due to this, there is decreased in the supply of blood (ischemia) which also means decreased oxygen levels. This subsequently causes pain (Angina) or a heart attack. Its progressive complications include arrhythmia, heart failure and subsequently death. The main causes risk factors of the CAD are atherosclerosis, obesity, BMI >30 kg/m<sup>2</sup>, smoking, increased cholesterol, diabetes etc. Primary symptoms include chest pain, dyspnea, pain in arm and shoulders etc.<sup>5</sup> Today, heart diseases are the leading cause of death worldwide. Age, gender, smoking, obesity, dyslipidemia, physical inactivity, hypertension and diabetes mellitus are the major established risk factors for heart diseases. Some other risk factors viz. nutritionally poor diet, excess use of alcohol consumption and eating junk foods are the other major and important modifiable risk factors for the prevention of heart diseases which had a role of more than 70% of the overall global burden and are expected to increase by 80%.<sup>6</sup>

## CONCLUSION

This study showed that various risk factors related to cardiovascular diseases is the major cause of death throughout the world. The study included various risk factors related to cardiovascular diseases to evaluate among patients of this region. In conclusion, age, gender, diabetes mellitus, increased blood pressure, obesity, family history, smoking and alcohol intake were found to be strong and significant risk factors with regard to various type of heart diseases. We also found that people who were residing in urban areas were more prone to heart diseases as compared to rural areas. The percentage of incidence of the heart diseases was also found to be more in males as compared to females.

Finally, the data we collected, the present study showed that various risk factors such as diabetes mellitus, age, hypertension, smoking, alcohol; obesity and family history are the main and leading causes. Present study also recommends improvement in life style mandatory in patients who already diagnosed with various type of heart diseases.

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