ORIGINAL RESEARCH

Assessment of Cardiovascular Health Status Among Patients Visited to Hospital

Pradeep Kumar DP[1], Raghav[2], Nandeshwar Amardip Anna[3]

[1]Assistant Professor, Department of Community Medicine, Kamineni Institute of Medical Sciences, Sreepuram, Narketpally, Nalgonda, Telangana, India.

[2]Assistant Professor, Department of Community Medicine, Kamineni Institute of Medical Sciences, Sreepuram, Narketpally, Nalgonda, Telangana, India.

[3]Assistant Professor, Department of Community Medicine, Gouri Devi Institute of Medical Sciences and Hospital, Durgapur, West Bengal, India.

Corresponding Author:
Dr. Pradeep Kumar DP,
[1]Assistant Professor, Department of Community Medicine, Kamineni Institute of Medical Sciences, Sreepuram, Narketpally, Nalgonda, Telangana, India.

ABSTRACT
Background: The present study was conducted to assess the cardiovascular health status among patients visited to hospital. **Materials & Methods:** A total of 200 subjects were screened in the present study. A predesigned and pretested semi-structured schedule was developed with the help of Ideal Cardiovascular Health criteria given by the American Heart association. Complete socio-demographic and clinical details of all the subjects were obtained. Blood samples were obtained, and lipid profile was evaluated in all the subjects. Anthropometric variables were evaluated. Personal habit history was recorded, and hemodynamic variables were recorded separately. **Results:** Hypertension was seen in 43.5 percent of the subjects while deranged fasting blood glucose levels were seen in 13 percent of the subjects. Dyslipidemia and obesity were seen in 46 percent and 44 percent of the patients. While correlating the cardiovascular health with gender, it was seen that deranged lipid profile and obesity significantly correlated with male gender. **Conclusion:** Cardiovascular health status of the adult population of was very poor. Large proportion of the study participants of were suffering from high blood sugar, poor BMI, and poor level of cholesterol.
Key words: Cardiovascular health, Hypertension, Dyslipidemia

INTRODUCTION
Allergic rhinitis (AR) is one of the most prevalent Data obtained in 2013 showed that the leading global cause of death in Western countries is cardiovascular disease (CVD), accounting for 17.3 million of all deaths worldwide per year (or 31.5% of all global deaths), despite steadily decreasing during the past 10 years.[1, 2] One in three deaths in the United States and one in four deaths in Europe are caused by CVD.[3] So, in 2035, 45.1% (>130 million adults) of the US population are projected to have clinical expression of CVD.[1,4] CVD describes a range of disorders that affect the heart and blood vessels, such as hypertension, stroke, atherosclerosis, peripheral artery disease, and vein diseases.[4]
The World Health Organisation (WHO) estimate that over 75% of premature CVD is preventable and risk factor amelioration can help reduce the growing CVD burden on both individuals and healthcare providers. Whilst age is a known risk factor for the development of CVD, autopsy evidence suggests that the process of developing CVD in later years is not inevitable, thus risk reduction is crucial. The INTERHEART study elucidated the effect of CVD risk factors including dyslipidemia, smoking, hypertension, diabetes, abdominal obesity, whilst it demonstrated the protective effects of consumption of fruits and vegetables, and regular physical activity. These risk factors were consistent throughout all populations and socioeconomic levels studied, helping to establish the viability of uniform approaches to CVD primary prevention worldwide.[5- 7] Hence; the present study was conducted to asses the cardiovascular health status among patients visited to hospital.

MATERIALS AND METHODS

The present study was conducted for evaluating the cardiovascular health status among adults in a known area. A total of 200 subjects were screened in the present study. Subjects who were seriously ill, absent despite 3 home visits, pregnant and lactating mothers were excluded from this study. A predesigned and pretested semi-structured schedule was developed with the help of Ideal Cardiovascular Health criteria given by the American Heart association.[8] Complete socio-demographic and clinical details of all the subjects were obtained. Blood samples were obtained and lipid profile was evaluated in all the subjects. Anthropometric variables were evaluated. Personal habit history was recorded and hemodynamic variables were recorded separately. All the results were recorded in Microsoft excel sheet followed by statistical analysis using SPSS software. P-value of less than 0.05 was taken as significant.

RESULTS

A total of 200 subjects were screened during the study period. Mean age of the subjects was 48.3 years. Out of 200 subjects, 112 were males and 88 were females. 135 subjects were of rural residence while the remaining were of urban residence. Hypertension was seen in 43.5 percent of the subjects while deranged fasting blood glucose levels were seen in 13 percent of the subjects. Dyslipidemia and obesity were seen in 46 percent and 44 percent of the patients. While correlating the cardiovascular health with gender, it was seen that deranged lipid profile and obesity significantly correlated with male gender.

Table 1: Cardiovascular health

Cardiovascular health status		Number	Percentage
Hypertension	Present	113	56.5
	Absent	87	43.5
Fasting blood glucose	Within range	174	87
	Deranged (more than 120 mg/dL)	26	13
Lipid profile	Normal	108	54
	Dyslipidemia	92	46
BMI	Upto 25 Kg/m^2	62	31
	25 to 30 Kg/m^2	50	25
	More than 30 Kg/m^2 (Obesity)	88	44

Table 2: Correlation of cardiovascular health and gender

Cardiovascular health status	Males (112)	Females (88)	p-value
Hypertension present	63	50	0.079
Deranged fasting blood glucose levels	14	12	0.324
Deranged lipid profile	62	30	0.001 (Significant)
Obesity present	52	36	0.000 (Significant)

DISCUSSION

The rate of cardiovascular disease (CVD) mortality reduction in the United States has plateaued in recent years despite the development of new medical therapies, increased access to health care, and increased health care spending, in large part due to the increasing prevalence of obesity and type 2 diabetes mellitus in younger individuals. Furthermore, the US Burden of Disease Collaborators have cited poor diet as the leading cause of premature death and disability nationally, with obesity-related health care costs in the United States totaling as high as $210 billion per year. Nutrition counseling is a core aspect of primary and secondary prevention of hyperlipidemia, hypertension, type 2 diabetes mellitus, and CVD. Healthy diet interventions are also central to promoting weight loss and preventing metabolic syndrome, even in those with an elevated genetic risk for obesity. Accordingly, it is imperative that clinicians are familiar with the scientific evidence underlying healthy dietary recommendations and that they implement personalized counseling based on their patients' comorbid conditions, health literacy, and financial limitations.[9-12] Hence; the present study was conducted for evaluating the cardiovascular health status among adults in a known area.

A total of 200 subjects were screened during the study period. Mean age of the subjects was 48.3 years. Out of 200 subjects, 112 were males and 88 were females. 135 subjects were of rural residence while the remaining were of urban residence. Hypertension was seen in 43.5 percent of the subjects while deranged fasting blood glucose levels were seen in 13 percent of the subjects.

In the present study, dyslipidemia and obesity were seen in 46 percent and 44 percent of the patients.

While correlating the cardiovascular health with gender, it was seen that deranged lipid profile and obesity significantly correlated with male gender. Nag K et al, assessed cardiovascular health status among adults and to find the influence of sociodemographic factors on it. The mean age of the study participants was 44.89 (±13.76) years, comprised 52.0% males and 48% females. Hypertension was seen among 58% of the study population and 77% had ideal (<100 mg/dl) level of fasting blood sugar (FBS). The present study showed obesity, hypertension, high level of total cholesterol, high level of FBS was mostly prevalent among 42–61 years age group. Married people were more obese, hypertensive compared to unmarried.[13]

CONCLUSION

Cardiovascular health status of the adult population of was very poor. Large proportion of the study participants of were suffering from high blood sugar, poor BMI, and poor level of cholesterol.

REFERENCES

1. Benjamin E.J., Blaha M.J., Chiuve S.E., Cushman M., Das S.R., Deo R., de Ferranti S.D., Floyd J., Fornage M., Gillespie C., et al. Heart Disease and Stroke Statistics-2017 Update: A Report from the American Heart Association. Circulation. 2017;35:e146–e603.
2. Ravera A., Carubelli V., Sciatti E., Bonadei I., Gorga E., Cani D., Vizzardi E., Metra M., Lombardi C. Nutrition and cardiovascular disease: Finding the perfect recipe for cardiovascular health. Nutrients. 2016;8:363.
3. Mozaffarian D., Benjamin E.J., Go A.S., Arnett D.K., Blaha M.J., Cushman M., Das S.R., de Ferranti S., Despres J.P., Fullerton H.J., et al. Heart disease and stroke statistics-2016 update: A report from the American Heart Association. Circulation. 2016;133:e38–e360.
4. Benjamin E.J., Virani S.S., Callaway C.W., Chamberlain A.M., Chang A.R., Cheng S., Chiuve S.E., Cushman M., Delling F.N., Deo R., et al. Heart Disease and Stroke Statistics-2018 Update: A report from the American heart association. Circulation. 2018;137:e67–e492.
5. WHO. The challenge of cardiovascular disease – quick statistics, 2016. Available at: http://www.euro.who.int/en/health-topics/noncommunicable-diseases/cardiovascular-diseases/data-and-statistics (accessed 10 October 2016).
6. Kannel WB, Doyle JT, Shephard RJ, et al. Prevention of cardiovascular disease in the elderly. J Am Coll Cardiol 1987; 10: 25A–28A
7. Yusuf S, Hawken S, Ôunpuu S, et al. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case–control study. The Lancet 2004; 364: 937–952.
8. Lloyd-Jones DM, Hong Y, Labarthe D, Mozaffarian D, Appel LJ, Van Horn L, et al. Defining and setting national goals for cardiovascular health promotion and disease reduction: The American heart association's strategic impact goal through 2020 and beyond. Circulation. 2010;121:586–613
9. Ren Y., Liu Y., Sun X.-Z., et al. Chocolate consumption and risk of cardiovascular diseases: a meta-analysis of prospective studies. Heart. 2019;105(1):49–55.
10. Dehghan M., Mente A., Zhang X., et al.Prospective Urban Rural Epidemiology (PURE) study investigators Associations of fats and carbohydrate intake with cardiovascular disease and mortality in 18 countries from five continents (PURE): a prospective cohort study. Lancet. 2017;390(10107):2050–2062
11. Montesi L., El Ghoch M., Brodosi L., Calugi S., Marchesini G., Dalle Grave R. Long-term weight loss maintenance for obesity: a multidisciplinary approach. Diabetes Metab Syndr Obes. 2016;9:37–46
12. Gianos E., Williams K.A., Freeman A.M., Kris-Etherton P., Aggarwal M. How pure is PURE? Dietary lessons learned and not learned from the PURE Trials. Am J Med. 2018;131(5):457–458.
13. Nag K, Karmakar N, Ghosh B, Datta A. An Epidemiological Study on the Assessment of Cardiovascular Health Status among Adults in an Urban Area of Teliamura Municipality Area, Khowai, Tripura. Ind J Comm Med. 2019; 44(4):332-36. doi:10.4103/ijcm.IJCM_386_18