The study of conventional cardiovascular risk factor profile in first-degree relatives of patients with premature coronary artery disease.

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Introduction: Cardiovascular diseases have become a leading cause of morbidity and mortality in the adult population of the Indian subcontinent. Premature CAD (<55 years in men and <65 years in women) is a public health problem with a prevalence of 4.6%. Traditional cardiovascular risk factors are strong predictors of an increased likelihood of premature CAD. Risk factor identification and modification should be considered in individuals with a positive family history of premature CAD. Screening (Primary prevention) done at this level may help in determining individual therapy.

Objectives: 1) To identify and study the conventional risk factor profile of first-degree relatives of the patients with premature coronary artery disease and to compare the risk factor profile of study subjects with that of the cases. 2) To determine the prevalence of cardiovascular risk factors in first-degree relatives (natural parent, brother or sister, son or daughter) of the patients with premature coronary artery disease. 3) To calculate the 10-year risk score using the ASCVD Risk Estimator (2013) for prediction of coronary artery disease among first-degree relatives of patients with premature coronary artery disease.

Materials & methods: This cross-sectional study was conducted under the Department of Medicine and patients were enrolled from the ICCU and Department of Cardiology of GMC & SSH Nagpur. The first-degree relatives of the patients suffering from premature CAD were screened for the presence of risk factors. 78 consecutive patients admitted to the cardiac care units of GMC Nagpur with the primary diagnosis of premature coronary artery disease were enrolled. These patients' 100 first-degree relatives were included in the study. Inclusion criteria were age (20 years and above) & first-degree relative. The ASCVD 10-year risk score was calculated for each relative using the ASCVD calculator. Appropriate statistical tests were used for analyzing the data.

Results: Out of a total of 100 study subjects 47% were in the middle age group (31-50 years) with an average age of 35.4 years. 55% of the relatives were males. Approximately 78.0 % of first-degree relatives of premature CAD patients were bearing 1 or more CAD risk factors and tobacco use was found to be the most common modifiable risk factor. Hypertension was present in 18.0 % of the relatives. Diabetes mellitus and dyslipidemia affected 17.0 % and 30.0% of relatives respectively. 25.0 % of the relatives were obese with an average BMI of 22.16 kg/m^2. 8.0 % of relatives were leading a sedentary lifestyle. 88.0 % of relatives had a moderate perceived stress score and only 1 relative was found to have a high perceived stress score. 10 female first-degree relatives were tobacco chewers. 12.0% of relatives were smokers and 21.0 % were alcoholics. Left ventricular hypertrophy was found in 9.0 % of relatives. 13.0% of relatives had an ASCVD score of 5% or more. 47.0 % of relatives had a lifetime risk of 26-50 % for having a cardiovascular event in the future.

Conclusions: Premature Coronary Heart Disease is a public health problem. In resource-limited settings like India, the focus on the management of CAD needs to be shifted from secondary & tertiary prevention (treatment and complication management) to primary prevention (identification and control of risk factors) and even further to primordial prevention (prevention of risk factors). Such an approach to preventive cardiology can aid in curtailing the enormous healthcare expenses required in the management of CAD. In sum, improvement of risk management is indeed the need of the hour for controlling the worldwide epidemic wave of coronary artery disease.