ANALYSIS OF THE CORONARY ARTERIAL LESIONS IN YOUNG PATIENTS WITH ACUTE MYOCARDIAL INFARCTION IN PUNJAB

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Abstract:

*Introduction: Coronary artery disease (CAD) is the leading cause of mortality worldwide and by 2020, will be the leading cause of disability. **Aims and objectives:** The basic aim of the study is to assess the coronary arterial lesions in young patients with acute myocardial infarction in Punjab. **Material and methods:** This prospective study was conducted in health department Punjab during 2019. The data was collected from 100 patients through non probability sampling technique. We included patients aged < 40 years of age who underwent coronary angiography. **Results:** The data was collected from 100 patients. The mean age of the patients was 26 ± 3.9 years, with a maximum number of patients (60.2%) being within the age of 25-30 years and the rest in the age group of 20-25 years. The youngest patient was 20.1 years old. AMI in very young patients was highly prevalent in urban population (63.9%). Smoking was the most common risk factor (77.4%), hyperlipidemia being the second common risk factor (78.5%), whereas 46.8% of the patients had a family history of premature CAD. **Conclusion:** It is concluded that smoking, family history of premature CAD, hyperhomocysteinemia and obesity were the most common risk factors.*

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INTRODUCTION:

Coronary artery disease (CAD) is the leading cause of mortality worldwide and by 2020, will be the leading cause of disability. India is going through an epidemiologic transition whereby burden of communicable diseases has been declining slowly, but that of non-communicable diseases (NCD) has been rising rapidly, thus facing a dual burden. Current estimates from various epidemiologic studies indicate the prevalence of coronary heart disease (CHD) to be 7%-13% in urban and 2%-7% in rural populations [1]. It is therefore important that those caring for patients with CHD have an understanding of the gendered nature of health and illness [2].

Even though women have a higher frequency of chest pain/angina than men, the incidence of obstructive CAD in the female population is lower when compared with men with similar symptoms [3]. In addition, it would appear that young women with obstructive CAD have a worse prognosis after acute myocardial infarction (AMI), whereas older women in similar circumstances often present with larger number of comorbidities that adversely influence the outcome, when compared to men. Women with acute coronary syndromes (ACS) are also less likely to receive rapid effective diagnosis and treatment than are men [4].

Acute myocardial infarction (AMI) is one of the most common presentations of CAD.5 Although individuals younger than 40 years of age account for only 3% of all patients with coronary artery disease, they are not completely immune from CAD [5]. Additionally, AMI in very young patients aged ≤ 35 years has been poorly described but is estimated to be less than 2%. Moreover, it carries significant morbidity, psychological impact, and financial burden for the patient and their family when it occurs at a young age as the productive age group is being affected [6].

Aims and objectives

The basic aim of the study is to assess the coronary arterial lesions in young patients with acute myocardial infarction in Punjab.

MATERIAL AND METHODS:

This prospective study was conducted in health department Punjab during 2019. The data was collected from 100 patients through non probability sampling technique. We included patients aged < 40 years of age who underwent coronary angiography.

Data collection

All patients were clinically evaluated after detail history taking. Routine biochemistry, complete hemogram, urea, creatinine, viral markers such as hepatitis B surface antigen (HBsAg), hepatitis C virus (HCV) and human immunodeficiency virus (HIV), urine examination including routine and microscopy-active sediment, fasting lipid profile, antinuclear antibody (ANA), c-reactive protein (CRP), erythrocyte sedimentation rate (ESR), plasma homocysteine level, ECG and echocardiography were performed. Smokers were defined as those who were either currently smoking (> 4 weeks) including bidi, cigarette and cigar or who had quit their smoking.

Statistical analysis

Statistical analyses were performed using the SPSS for windows (version 17.0, SPSS Inc., Chicago, IL, USA).

RESULTS

The data was collected from 100 patients. The mean age of the patients was 26 ± 3.9 years, with a maximum number of patients (60.2%) being within the age of 25-30 years and the rest in the age group of 20-25 years. The youngest patient was 20.1 years old. AMI in very young patients was highly prevalent in urban population (63.9%). Smoking was the most common risk factor (77.4%), hyperlipidemia being the second common risk factor (78.5%), whereas 46.8% of the patients had a family history of premature CAD.

Table 01: Baseline characteristics of the patients

Variables	n (%)
Age (year)	26.0 ± 3.9
Sex (male/female)	1061/95 (95.1/4.9)
Background (urban/rural)	714/452 (63.9/36.1)
Smoking	877 (78.5)
Hypertension	229 (20.5)
Diabetes	191 (17.2)
Family history of premature CAD	522 (46.8)
Obesity	437 (39.1)
Hyperhomocysteinemia	214 (19.2)
Physical inactivity	432 (38.7)
Substance abuse (cannabis)	52 (4.6)
Stressful life events	330 (29.6)
Dyslipidemia	236 (21.2)
Total cholesterol (mg/dl)	193.7 ± 36.4
LDL-C (mg/dl)	123.2 ± 26.1
TG (mg/dl)	177.1 ± 57.4
HDL-C (mg/dl)	33.2 ± 7.3
Non-HDL-C (mg/dl)	158.0 ± 14.9

DISCUSSION:

We confirm that definite CAD, based on a doctor's report and Q waves on ECG, was twice as prevalent in men as in women. However, unlike populations of European origin, we not only show that ischaemic or major ECG changes were highly prevalent in our population, but that the prevalence was twice as high in women as in men. Others indicate either similar or only a modestly increased prevalence of such ECG changes [7].

The greater prevalence of CAD in the Indo-Pakistan population is likely to be due to a greater susceptibility to the metabolic syndrome; around a third to a half of these middle-aged men and women, respectively, were classified as positive for the metabolic syndrome using current criteria [6]. The greater prevalence of definite CAD in men is largely due to the effect of smoking exposure, which owing to its substantially higher prevalence in men, overwhelms the impact of the greater prevalence of the metabolic syndrome in women [8].

Previous studies in the Indo-Pakistan subcontinent have generally reported combined definite and probable CAD prevalence, and thus not demonstrated marked gender differences. However, in a study from South India, the prevalence of T-wave changes was markedly higher in women than in men (11% vs 2%), reflecting our own observations of a substantially greater prevalence of ischaemia and major changes on ECG in women [9].

CONCLUSION:

It is concluded that smoking, family history of premature CAD, hyperhomocysteinemia and obesity were the most common risk factors. Multivessel disease and complication were more in diabetic population but had favorable in-hospital outcome overall. Primordial prevention about smoking cessation and life style modification in cutting down obesity will be important epidemiological tool.

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