ORIGINAL ARTICLE

Variations in the Presentation of Acute Coronary Syndrome

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ABSTRACT

Aim: To determine the differences in clinical presentations of acute coronary syndrome in both the genders as well as different age groups.
Study design: Observational study
Place and duration: Department of Cardiology, Bahawal Victoria Hospital Bahawalpur from December 2014 to March 2015.
Methods: The eligible patients admitted in the department with the diagnosis of NSTE-ACS or STE-ACS was enrolled in the study. Patients of all ages were included in the study. Patients with significant hepatic or renal dysfunction, recent surgery, or significant aortic valve disease were excluded. The data regarding patient characteristics as well as clinical manifestations of the disease was noted. Cardiac biomarkers were evaluated. The data was analyzed using SPSS version 11.
Results: Out of a total of 200 patients, 62% were males. The most prevalent risk factors for coronary artery disease were diabetes mellitus (37%), hypertension (31%), smoking (35%), sedentary life style (29%), and family history of ischemic heart disease (19%). STE-ACS was diagnosed in 127 patients and NSTE-ACS was diagnosed in 73 patients. Chest pain was the most common clinical manifestation of acute coronary syndrome. An increasing proportion of patients presented with atypical manifestations with advancing age.
Conclusion: Clinical presentation of acute coronary syndrome varies with age and gender.
Keywords: ST-segment elevation acute coronary syndrome (STE-ACS), Non-ST-segment elevation acute coronary syndrome (NSTE-ACS)

INTRODUCTION

The pathobiological basis of ischemic heart disease and thus its manifestations and response to treatment can vary between women and men[1]. Difference in the mechanism and pathopysiology of acute coronary syndrome (ACS) between younger and older age population has also been proposed[2]. Patients, especially those with diabetes or hypertension, may have atypical presentations[3]. So a study was designed to determine the variations in the presentation of acute coronary syndrome in our population.

MATERIALS AND METHODS

This observational study was conducted at the Department of Cardiology, Bahawal Victoria Hospital Bahawalpur from December 2014 to March 2015. During this period, the eligible patients admitted in the department with the diagnosis of NSTE-ACS or STE-ACS was enrolled in the study. Patients of all ages with the diagnosis of ACS were included in the study. The diagnosis of myocardial infarction required typical rise or fall of cardiac biomarkers with at least one of the following: ischemic symptoms, development of pathological Q waves, ECG changes indicative of ischemia (ST segment elevation or depression), imaging evidence of new loss of viable myocardium or new regional wall motion abnormality[4]. Patients with STEMI were required to have ST-segment elevation of ≥0.2mV in ≥2 contiguous precordial leads, or ≥0.1mV in ≥2 contiguous limb leads, or new left bundle branch block[5]. Patients with NSTE-ACS were required to have ≥0.1mV ST-segment depression in ≥2 contiguous leads. Patients with significant hepatic or renal dysfunction, recent surgery, or significant aortic valve disease were excluded from the study. The data was collected on a pre-designed proforma. Patient characteristics as well as clinical manifestations of the disease were noted. Cardiac biomarkers were evaluated. The data was analyzed using SPSS version 11.

RESULTS

A total of 200 eligible patients were enrolled during the study period. Out of these 200 patients, 124 (62%) were males and 76 (38%) were females. The most prevalent risk factors for coronary artery disease were Diabetes mellitus (37%), hypertension (31%), smoking (35%), sedentary life style (29%), and family history of ischemic heart disease (19%). Out of 200 patients, 73 were diagnosed as non-ST-

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elevation acute coronary syndrome (NSTE-ACS), and 127 as ST-elevation acute coronary syndrome (STE-ACS). Chest pain was the most common clinical manifestation of acute coronary syndrome observed in 66% of patients. The gender wise distribution of various clinical parameters is shown in Table 1. Although chest pain remained the most common mode of presentation in all age groups, an increasing proportion of patients presented with atypical manifestations, like syncope or weakness alone without accompanied by chest pain, with advancing age (Table 2).

Table 1: Gender based differences in various clinical parameters of acute coronary syndrome

Variables	Males (n=124)	Females (n=76)
Risk Factors		
Diabetes mellitus	44 (35.5%)	30 (39.5%)
Hypertension	38 (30.6%)	22 (28.9%)
Smoking	46 (37.1%)	24 (31.6%)
Sedentary life style	30 (24.2%)	28 (36.8%)
Family H/O IHD	18 (14.5%)	20 (26.3%)
Clinical Presentation		
Chest pain	87 (70.2%)	45 (59.2%)
SOB	19 (15.3%)	12 (15.7%)
Vomiting	7 (5.6%)	9 (11.8%)
Syncope	4 (3.2%)	4 (5.3%)
Weakness alone	7 (5.6%)	6 (7.9%)
Diagnosis		
STE-ACS	86 (69.4%)	41 (53.9%)
NSTE-ACS	38 (30.6%)	35 (46.1%)

Table 2: Clinical presentation of acute coronary syndrome in different age groups

Age group (yrs)	NSTE-ACS	STE-ACS	Chest pain	SOB	Vomiting	Syncope	Weakness alone
< 35	3	5	5	1	1	1	-
35-45	9	13	15	2	3	1	1
45-55	19	26	36	6	1	1	1
55-65	20	43	40	9	7	2	5
65-75	18	31	29	9	4	3	4
> 75	4	9	7	4	-	-	2

DISCUSSION

Despite a decline in cardiovascular mortality, coronary artery disease (CAD) remains the leading cause of morbidity and mortality in both men and women worldwide[6]. Previously conducted studies have documented the gender differences in the presentation of acute coronary syndrome[7,8,9]. Our study also found various differences in the presentation as well as risk factors of acute coronary syndrome in both the genders. Chest pain was found to be the most common manifestation of the disease. This is in accordance with the previously published data[10,11,12]. Moreover, with advancing age, there was an increasing trend towards atypical presentations of acute coronary syndrome like syncope or weakness alone without accompanied by chest pain. Carro A et al[13] has reported that presenting symptoms of acute MI differ in the elderly from those in younger patients. They are more likely to be termed “atypical” because the description differs from the classical one of subesternal pressure with exertion. The elderly appear to have reduced pain perception; as a result, silent myocardial ischemia is more common and carries a somewhat worse prognosis in the elderly than in younger age groups[14].

CONCLUSION

There are differences in the clinical presentation of acute coronary syndrome in males and females. Similarly, the elderly patients present with somewhat different or atypical symptoms as compared to younger patients.

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