

Clinico-demographic Characteristics of Coronary Artery Bypass Surgery Patients: Experience of 60 Cases at Referral Cardiac Surgery Hospital in Bangladesh

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Abstract

Background: Coronary artery bypass surgery is needed in different group of patients. **Objective:** This study was undertaken to see the different socio-demographic characteristics of patients undergone coronary artery bypass surgery. **Methodology:** This cross-sectional study was conducted in the Department of Cardiac Surgery at National Institute of Cardiovascular Diseases (NICVD), Dhaka, Bangladesh during January 2014 to December 2015 for a period of two (2) years. Patients' undergone CABG after fulfilling the inclusion and exclusion criteria was recruited for this study. The details socio-demographic characteristics of the study population were recorded. **Result:** A total number of 60 patients were recruited for this study after fulfilling the inclusion and exclusion criteria. The age of the patients undergoing OPCAB surgery ranges from 37 years to 70 years. But most of the patients were in the range of 41 to 60 years which was 50(83.3%). There was an overall male dominance among the patients which was 91.67%. the ratio of male and female was 11.0:1. NYHA class I was in 32(53.3%) cases and class II was 28(46.47%) cases. Hypertension was present in 37(63.3%) cases. Diabetes mellitus and dyslipidemia were present in 50(83.3%) cases and 37(61.7%) cases respectively. Obesity was present in 40(66.7%) cases. Smoking habit was present in 34(56.7%) cases. **Conclusion:** In conclusion the efficacy of topical tranexamic acid is helpful for reducing postoperative bleeding after OPCAB surgery. [*Journal of Science Foundation, 2016;14(2):62-65*]

Keywords: Coronary artery bypass surgery; demographic characteristics; cardiac surgery

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Introduction

Incidence of ischemic heart disease is increasing in developing countries including Bangladesh. In 1975, the incidence of IHD in Bangladesh was reported to be 3.3 per thousand (Christensen et al., 2009) and that in 1985 was 14 per thousand (Brown et al., 2007). According to the latest WHO data published in April 2011 Coronary Heart Disease Deaths in Bangladesh reached 163,769 or 17.11% of total deaths and Bangladesh ranks 25th position in the world in respect to cause of death due to coronary artery disease (Hartmann et al., 2006).

Bleeding is a common complication after CABG (Abrishami et al., 2009). Excessive bleeding and blood transfusion play an important role in post-CABG mortality and morbidity. Patients undergoing cardiac surgery still receive more blood transfusions than in other surgical procedures, consuming 20% of blood bank reserves. Reopening sternotomy to control bleeding has been reported in 2 to 7% of cases. Blood transfusion can cause infection and immunological reactions and increase hospital length stay and cost,

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which justifies all efforts to reduce bleeding after CABG (Nourei et al., 2013). The present study was undertaken to see the different socio-demographic characteristics of patients undergone coronary artery bypass surgery.

Methodology

This study was designed as cross-sectional study. This study was conducted in the department of cardiac surgery at National Institute of Cardiovascular Diseases, Dhaka, Bangladesh from January 2014 to December 2015 for a period of two (2) years. The study was carried out among the patients admitted in NICVD for OPCAB surgery. Approval for this study protocol was taken from the institutional ethical review committee. The purpose of the study was explained to the potential participants. Interests of the study were given the highest priority and confidentiality was maintained with safeguard of the right and health of the participants. Patients with ischemic heart disease admitted in NICVD with a plan for OPCAB Surgery with the age of the patients were within 18 to 60 years in both male and female were include for this study. Data were collected in a case record form (CRF) from history, physical examination, investigation reports. The numerical data obtained from the study were analyzed and significance of difference was estimated by using the statistical methods. Qualitative data are expressed in frequency with corresponding percentage and quantitative data are expressed in mean with standard deviation. All data were analyzed by SPSS 20.0 for Windows®.

Result

A total number of 60 patients were recruited for this study after fulfilling the inclusion and exclusion criteria. The age of the patients undergoing OPCAB surgery ranges from 37 years to 70 years. But most of the patients were in the range of 41 to 60 years which was 50(83.3%) (Table 1).

Table 1: Distribution of the Patients According To Age

Age Group	Frequency	Percentage
37 to 40 Years	2	3.33
41 to 50 Years	26	43.33
51 to 60 Years	24	40.00
61 to 70 Years	8	13.33
Total	60	100.0
Mean±SD	52.0±7.0	

Figures in the parenthesis denote corresponding %; Data were analyzed using chi-square Test

There was an overall male dominance among the patients which was 91.67%. the ratio of male and female was 11.0:1 (Table 2).

Table 2: Distribution of the Patients According To Sex

Gender	Frequency	Percentage
Male	55	91.67
Female	5	8.33
Total	60	100.0

Figures in the parenthesis denote corresponding %; Data were analyzed using χ^2 Test

NYHA class I was in 32(53.3%) cases and class II was 28(46.47%) cases. Hypertension was present in 37(63.3%) cases. Diabetes mellitus and dyslipidemia were present in 50(83.3%) cases and 37(61.7%) cases respectively. Obesity was present in 40(66.7%) cases. Smoking habit was present in 34(56.7%) cases (Table 3).

Table 3: Distribution of the Patients According to Base Line Clinical Characteristics

Base Line Characteristics		Frequency	Percentage	
NYHA class	Class I	32	53.33	
	Class II	28	46.47	
	Class III	0	0.0	
	Class IV	0	0.0	
Comorbidities	Hypertension	Present	38	63.33
		Absent	22	36.67
	Diabetes mellitus	Present	50	83.33
		Absent	10	16.67
	Dyslipidemia	Present	37	61.67
		Absent	23	8.33
Obesity	Present	40	66.67	
	Absent	20	33.33	
Smoking habit	Present	34	56.67	
	Absent	26	43.33	
Preoperative Anti-platelet	Present	20	33.33	
	Absent	40	66.67	

Figures in the parenthesis denote corresponding %; χ^2 Test were used to analyze data\

The mean with SD haematocrit, platelet count, INR, bleeding time and clotting time were 41.53 ± 2.38 , 245.75 ± 37.11 , 1.05 ± 0.09 , 4.24 ± 0.49 and 5.89 ± 0.41 (Table 4).

Table 4: Distribution of the patients according to preoperative investigation profile

Investigation Profiles	Mean \pm SD
Haematocrit (%)	41.53 ± 2.38
Platelet count ($\times 10^9$ /cmm)	245.75 ± 37.11
INR	1.05 ± 0.09
Bleeding time (min)	4.24 ± 0.49
Clotting time (min)	5.89 ± 0.41

Data were analyzed using Student's t-Test and presented as mean \pm SD

Discussion

National Institute of Cardiovascular Diseases, Dhaka, Bangladesh plays a pivotal role in the field of cardiac surgery in the country. Yearly about one thousand heart surgeries are performed here. Number of OPCAB surgeries is nearly 20% of the total procedures performed. Mean (\pm SD) age of the study subjects was $52.97 (\pm 7.44)$ years. Age of the most of the patients was between 41 to 60 years. Jares et al (2007) reported the mean age of patients undergoing OPCAB surgery to be 53.80 ± 8.57 years which are similar to this study.

Male sex was more common than female among the study subjects. There was an overall male predominance among the patients which was 91.67%. The ratio of male and female was 11.0:1. Khalil et al (2004) also reported a male preponderance in patients undergoing OPCAB surgery.

Baseline clinical characteristics in the study subjects are recorded. Patients were in NYHA class I and class II and no patients were in NYHA III or IV. Most of the patients were hypertensive, diabetic, obese, dyslipidemic. NYHA class I was in 32(53.3%) cases and class II was 28(46.47%) cases. Hypertension was present in 37(63.3%) cases. Diabetes mellitus and dyslipidemia were present in 50(83.3%) cases and

37(61.7%) cases respectively. Obesity was present in 40(66.7%) cases. Smoking habit was present in 34(56.7%) cases. Fergusson et al (2008) reported 48.3% prevalence of DM respectively. Prevalence of preoperative hypertension was 65.5%. The study subjects were comparable in terms of preoperative patient characteristics and cardiopulmonary functional status.

Preoperative coagulation profiles of were recorded. The haematocrit, platelet count, INR, bleeding time and clotting time were measured. The mean with SD haematocrit, platelet count, INR, bleeding time and clotting time were 41.53 ± 2.38 , 245.75 ± 37.11 , 1.05 ± 0.09 , 4.24 ± 0.49 and 5.89 ± 0.41 . Christensen et al (2009) reported in a study of OPCAB surgery with haematocrit $41.86\pm 8.35\%$, platelet count $206852\pm 76272/\text{cu mm}$. These findings were nearly similar to our study.

Conclusion

In conclusion coronary artery bypass surgery is more commonly performed among male middle age person. Furthermore majority are the history of diabetes mellitus and hypertension. Further lasrge scale study can be performed to get the scenario of Bangladeshi people.

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