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Original Article

Incidence, Pattern and Outcome of Diseases in Patients Admitted in Coronary Care Unit in a Tertiary Care Hospital in Dhaka - A 3 Year Retrospective Study

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Abstract:

Background: *Cardiovascular disease (CVD) is the leading causes of death globally. Like other countries, CVD prevalence is also rising among the adults in Bangladesh. Most of the cardiac emergencies and acute ailments are preferably managed in a specially designed place of a hospital called Coronary Care Unit, which has better facilities of monitoring, care and support. In every day-to-day practice a proportion of diabetic patients need to admit in CCU for different life threatening crisis. For better understanding of such CVD prevalence scenario, we conducted this retrospective observational study.*

Aim of the Study: *Our objective was to assess the pattern and incidence of CVD admitted in CCU with their outcomes among the population using the data from the record book.*

Methodology: *This is a retrospective observational study carried out in the Coronary Care Unit (CCU) of BIRDEM General Hospital, Dhaka, Bangladesh from 2017-2019. Total 1069 patients (861 were Diabetic and rest were non diabetic) who were admitted to the CCU of this Institute from 2017-2019 were studied and evaluated to see the pattern of cardiac emergencies in diabetic population.*

Results: *Among 1069 patients, 57.2% were male and 42.8% were female. Majority (80.54%) of them were diabetic. Most of the patients belonged to age 50 years and above. Seven hundred and one (65.57%) patients were admitted due to Ischemic Heart Disease (IHD) in different forms. Among the Acute Coronary Syndrome, most prevalent one was NSTEMI (354). Among NSTEMI group, where 50.37% were male and 50.67% were female, 102 patients had Unstable Angina and 73 had STEMI. Eighty nine patients were admitted after intervention (PCI or CABG) and 61 patients had Ischemic Dilated Cardiomyopathy (IDCM) due to some complications. Four hundred and twenty patients admitted due to Heart Failure and 137 patients were admitted due to different forms of Shock. Cardiac function was assessed (by Teichholz method and Biplane Simpson's method) among the admitted patients and 57.31% of patients had moderate LV dysfunction, 29.26% had severe systolic dysfunction and remainder 13.43% found to have mild LV systolic dysfunction. Mean hospital stay was assessed and it was found to be gradually declining from 13.33 in 2017 to 9.23 in 2019 (p=0.041*). Outcome of the study population shows that ~ 66% were transfer to general ward or cabin of the department of cardiology after initial stabilization, 17.3% were discharged directly from CCU, and 5.42% patients were transferred to other department after recovery. About 5.5% were become critically ill for which they need to transfer under care of ICU, 2.5% were transfer for intervention (to other institutes according to patient's economical ability and preference for CABG, Pace maker implantation, PTCI etc.) and 3.3% patients were expired.*

Conclusion: *In this study, incidence of IHD found higher than other cardiac diseases. NSTEMI is about three times more than Unstable Angina and about five times more prevalent than STEMI for the reason of admission in CCU. Diabetes Mellitus was found in majority of the admitted patients in CCU and the number of diabetic population is increasing which may also responsible for leading more coronary heart disease in our country in future. 88.7% of study population was shifted to general ward after initial stabilization after acute crisis, 2.5% required further cardiac intervention and 5.5% become critical and required ICU support. Only 3.3% of total population expired after all possible support.*

Key words: *ACS (Acute Coronary Syndrome), Coronary Artery Disease (CAD), Coronary Artery Bypass Grafting (CABG), Coronary Care Unit (CCU), Critical Care Medicine (CCM), Ischemic Heart Disease (IHD), Non ST Elevated Myocardial Infarction (NSTEMI), Left Ventricle (LV), Per Cutaneous Intervention (PCI), ST Elevated Myocardial Infarction (STEMI).*

Introduction:

Diabetes mellitus is a major global health problem. People with diabetes have an increased risk of developing several serious life-threatening micro-and macro-vascular complications resulting in higher medical care costs, reduced quality of life, and increased mortality[1]. The International Diabetes Federation (IDF) has estimated that 463 million adults live with diabetes worldwide in 2019, with a projected increase to 700 million by 2045 [2]. It is projected that diabetes cases will increase by 74% in Southeast Asian countries in the

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next two decades, from 88 million in 2019 to 153 million by 2045[3]. In Bangladesh, 8.4 million adults lived with diabetes in 2019 and projected to be almost double (15.0 million) by 2045[3]. Studies, including a systematic review and meta-analysis, and national survey reports, showed that the prevalence of diabetes among adults had increased substantially in Bangladesh, from ~5% in 2001 to ~14% in 2017 [4–7]. Diabetes now rivals smoking, high blood pressure and lipid disorders as a major risk factor for cardio-vascular disease[8]. Cardiovascular disease is a major worldwide public health problem, and is the number one cause of death in industrialized countries. It is also set to overtake infectious diseases as the most common cause of death in many low- and middle-income countries, with levels becoming comparable to those in high-income countries[9]. Cardiovascular diseases (CVDs) are among the leading cause of death globally. According to the World Health Organization (WHO), 17.7 million people died from CVDs in 2015, representing 31% of all global deaths[10]. Furthermore, people with diabetes also have a higher prevalence of many of the other common cardiovascular risk factors than the general population, such as high blood pressure[11]. Bangladesh has experienced a significant increase in the prevalence of non-communicable chronic diseases and associated mortality in the last few decades[7, 12]. Approximately, one-third (32.2%) of the people with T2DM are affected by some sort of CVDs, mainly from coronary heart disease (21.2%) followed by heart failure (14.9%), angina (14.6%), myocardial infarction (10.0%) and stroke (7.6%). These CVDs also cause approximately half of all deaths among them[13]. Moreover, developing and also dying from CVD is twice as high in T2DM subjects than the nondiabetic ones, according to the American Heart Association.[14] In Bangladesh, as a developing country in the South Asian region with a highly dense population of over 165 million[15], the prevalence of CVD was reported to be 4.5–5.0%[16, 17]. Moreover, a large number of people in this country are affected by diabetes, reporting almost one in every ten of the adults (9.7%)[18-19]. There is specific relation of diabetic and cardiovascular diseases, though number of study in number has been found in our country. The aim of this study of cardiovascular diseases in diabetic population is very few was to observe the pattern and incidence of diseases in Diabetic population admitted in Coronary Care Unit in a tertiary care hospital in Dhaka.

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Materials & Method:

This is a retrospective observational study carried out in the Department of Cardiology BIRDEM General Hospital Dhaka, Bangladesh from 2017 to 2019. Total 1069 patients who were admitted to the institute in between 2017 to 2019 was studied and evaluated to see the pattern of cardiovascular diseases. Documents were evaluated for gender, age, glycaemic status, blood pressure, different forms of Ischemic Heart Disease, Cardiomyopathy, Heart Failure, and Renal Impairment. Diabetes Mellitus was diagnosed according to the American Diabetes Association (ADA) criteria; Fasting plasma glucose (FPG) at or above 126 mg/dL (7.0 mmol/L), A1C ≥6.5 %, a two-hour value in an oral glucose tolerance test (OGTT) (2-h post glucose) at or above 200 mg/dL (11.1 mmol/L), or a random (or "casual") plasma glucose concentration ≥200 mg/dL (11.1 mmol/L) in the presence of symptoms. Duration and type of DM were detected from the registered diabetic book and past medical records of the patients.

Regarding diagnosing IHD, which comprises stable angina and acute coronary syndrome we maintained a standard protocol based on clinical feature, cardiac biomarkers, ECG and Echocardiography. Therefore, the patients with IHD had following features.

Features of IHD: Angina pectoris, often simply known as angina, is a clinical syndrome characterized by discomfort in the chest radiates to shoulder, back, arm, or jaw. Ischemic heart disease may occur clinically as stable angina and acute coronary syndromes, which again includes unstable angina, non-ST elevation myocardial infarction, and ST-elevation myocardial infarction.

Stable angina: Typical symptoms include chest discomfort in the form of heaviness, band like, pressure, squeezing, or tightness usually occurs after exertion, heavy meal or emotional excitement and persists for brief period usually less than 5 minutes and reliefs promptly taking rest or taking sub lingual glyceryl tri-nitrate. The pain usually has a retrosternal component and commonly radiates to left shoulder, forearm, arm even up to fingers. Radiation to the back, neck, jaw and shoulders and very rarely to right arm is also possible. Patients may have typical symptoms often described as fatigue, indigestion, chocking lightheadedness, dyspnea (angina equivalent), palpitations, diaphoresis, and weakness.

Unstable angina: Includes any of the following subgroups: angina of worsening character, either with (i) increasing severity of pain, (ii) increasing duration of pain (iii) increasing frequency of pain or (iv) increasing requirement for nitroglycerin; and (v) angina at rest.[20]

We followed Framingham diagnostic criteria for Congestive Heart Failure CHF which includes; (a) Major criteria: Paroxysmal nocturnal dyspnea or orthopnea, neck-vein distension, rales, cardiomegaly, acute pulmonary edema or S_3

gallop, increased venous pressure (>16 cm H_2O), hepatojugular reflux. (b) Minor criteria: Ankle edema or night cough, dyspnea on exertion, hepatomegaly, pleural effusion, vital capacity decreased one-third from maximal capacity. To diagnose CHF, simultaneous presence of at least two major criteria or one major criteria in conjunction with two minor criteria are needed. Minor criteria are acceptable only if they cannot be attributed to another medical condition (eg. pulmonary hypertension, chronic lung disease, cirrhosis, ascites, nephrotic syndrome).

Cardiomyopathy was diagnosed based on history, clinical and echocardiographic findings in the absence of coronary artery disease, myocarditis and other causes of systolic dysfunction of the heart. (a) Dilated Cardiomyopathy was considered among those who have indolent course of relapse and remission of heart failure with Echocardiographic evidence of dilatation of all chambers, normal wall thickness and ejection fraction usually below 45% and LV end-diastolic diameter >2.7 cm/m^2 or >117% predicted value corrected for age and body surface area.[21-23]

(b) Hypertrophic cardiomyopathy (HCM) was diagnosed by Echocardiographic evidence are

I) Ventricular wall thickness ≥15 mm in at least one LV myocardial segment or ≥13 mm in patients with a first-degree relative with confirmed HCM.

II) Septal wall thickness is 1.5 times more than Posterior wall thickness (Asymmetric Septal Hypertrophy). HCM typically manifests as asymmetric septal hypertrophy, although other patterns, such as apical, concentric, lateral wall, and right ventricular forms, can occur.

III) Systolic anterior motion of anterior Mitral valve leaflet (SAM).

IV) The presence of the LVOT gradient is defined as nonobstructive when the left ventricular outflow tract obstruction (LVOT) gradient is <30 mmHg at rest, obstructive when the LVOT gradient is ≥30 mmHg at rest, and latent obstructive form when the LVOT gradient is <30 mmHg at rest, and on exertion when ≥30 mmHg.[24-27]

Hypertensive heart disease was diagnosed according to Joint National Committee- 7 (JNC-7) guideline. Data were collected from institutional registry were all admitted patients' diagnosis enlisted with outcome. These are regularly checked weekly by the consultant and registrar and corrected accordingly.

Statistical Analysis: Data was analyzed for mean, percentage, standard deviation, chi square test, multiple correlation and multivariate analysis, by using SPSS-20 for Windows. The t-test and chi square test will be applied to study quantitative and qualitative data, respectively with P-value <0.05 will be considered significant.

Results:

Total 1069 patient with 612 (57.2%) male and 457 (42.8%) female admitted between 2017 to 2019 in the Coronary Care Unit of BIRDEM General Hospital where analysis to see this pattern-

Table-I shows the total number, age and gender distribution of the study population along with their glycemic status. Among all patients, 861 were Diabetic and rest were non diabetic.

Table-I: Status of Gender, Diabetic and non diabetic and age of the study subjects (N=1069)

Gender	Number	Diabetic	Non-Diabetic	< 50 yrs	≥ 50yrs
Male	612 (57.2%)	498(57.84%)	114 (54.81%)	261(54.15%)	351(59.8%)
Female	457 (42.8%)	363 (42.16%)	94 (45.19%)	221(45.85%)	236(40.2%)

Among the 1069 patients, 57.2% were male and the rest were female. Among the male 30.32% were less than 50 years of age and 69.68% were more than 50 years. For the female, the corresponding values were 37.98% and 62.02%. Most of the study population (80.54%) were diabetic and only 10.66% in male and 8.79% in female were nondiabetic (table-I).

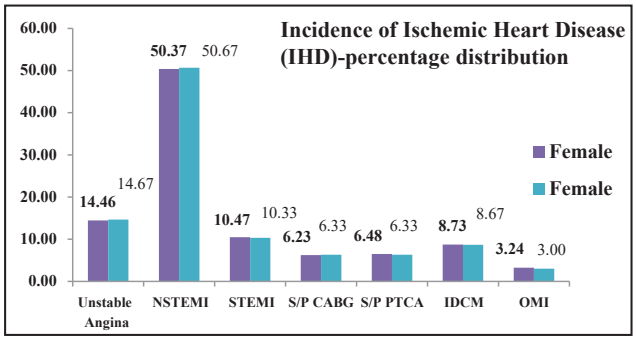

Figure-1: Incidence of Ischemic Heart Disease (IHD)-percentage distribution

Figure 1 expressed that among the study subject 701 patients had Ischemic Heart Disease (IHD). 401 were male and the rest were female. Among them the most prevalent one 354 (50.50%) was NSTEMI where 202 (50.37%) were male and 152 (50.67%) were female. NSTEMI, S/P CABG and OMI were significantly higher among male than female.

Table-II: Left ventricle (LV) dysfunction among the IHD subjects

Stage	Ejection Fraction (EF %)	Percentage
Mild	40% - 55%	13.43%
Moderate	30%-39%	57.31%
Severe	<29%	29.26%

Table-II shows majority 57.31% of patients of IHD had moderate LV dysfunction and 29.26% had severe systolic dysfunction. Remainder 13.43% found to have mild LV systolic dysfunction.

The tools of systolic function were as follows:

Teichholz method: (based on simple ellipsoid shape with a correction factor) and prolate ellipsoid method (which uses a simplified cube formula rather than the nonsimplifiedprolate ellipsoid equation) are all based on a single linear measurement of LV cavity made using M-mode echocardiography cursor placed perpendicular to LAX of LV at the tip of the mitral valve in a parasternal LAX view with TTE (Trans Thoracic Echocardiography) Teichholz formula: Volume = $7/(2{\cdot}4+ D) \times D^3$ (D – linear LV diameter)

Biplane Simpson's method: This method is the only method currently recommended for the calculation of LV volumes and EF using 2D echocardiography. This employs the principle of summation of twenty cylindrical discs of equal height. Diameter of the cylinder will varies depending on the shape of the LV cavity. This requires the LV cavity to image in LAX including the base and apex in two orthogonal planes. The endocardial border has to be drawn and connected at the mitral valve level by a straight line. Inbuilt software in all the echocardiography machines would automatically divide this LV area into twenty equal divisions once the LV LAX has been marked from the apex to the middle of the line joining the mitral annulus. LV volumes are measured at end diastole and end systole in both the planes and used in the equation for calculating the EF.

Reference values

- Normal LV function - >55%
- Mild LV dysfunction - 40%–54%
- Moderate LV dysfunction - 30%–39%
- Severe LV dysfunction - <30%.[28]

Table-III: Patients admitted with the features of heart failure (n=420)

Type (N=239)	Male (%) (N=181)	Female (%) (N=420)	Total (%)
Acute LVF	206 (85.83)	156 (86.67)	362 (86.19)
Acute on chronic HF	26 (10.83)	19 (10.56)	45 (10.71)
Acute Pulmonary Oedema	3 (1.25)	2 (1.11)	5 (1.19)
CCF	5(1.90)	3(1.6)	8(1.9)
Total	**239 (100)**	**181(100)**	**420(100)**

Table-III shows total 420 patients were admitted with the features of heart failure. Among them 57.14% were male and 42.85% were female. Most of them (86.19%) had acute left ventricular failure. Figure-2 shows that 127 admitted patients had shock in different forms. Among them 52.7% had cardiogenic, 41.7% had septic and remainder had both cardiogenic and septic shock. Sepsis has toxic effects on cardiovascular system which sometimes involve in reducing the cardiac function by causing myocarditis, increasing the heart rate, decreasing the blood pressure (by vasodiatation) and activation of renin-angiotensin-aldetesteron system. Septic shock often precipited pre exiting heart disease and may lead heart failure. The presentation has been shown among male and female in figure 2.

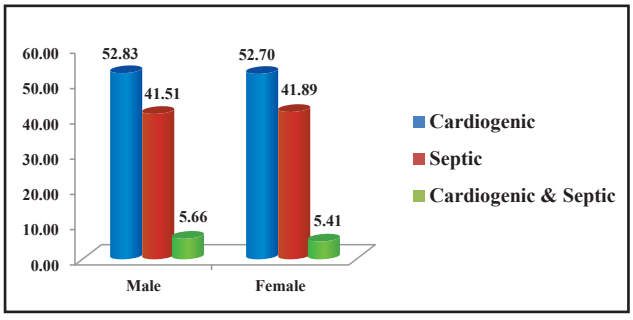

Figure-2: Incidence of Shock

Table-IV: Incidence of associated co-morbidities

Disease	Number	Percentage
Hypertension	533	49.85
Kidney Disease		
- AKI ON CKD	63	5.89
- CKD	148	13.84
- ESRD ON MHD	49	4.58
Diabetic Foot Ulcer	28	2.6
DVT	6	0.56

AKI: Acute kidney injury, CKD: Chronic kidney disease, DVT: Deep vein thrombosis, ESRD: End stage renal disease, MHD: Maintenance hemodialysis

Table IV shows incidence of associated comorbidities among admitted patient in CCU. 49.8% of them had Hypertension and 24.3% had CKD in different form. Table V shows the different outcome of the admitted patient in CCU. Majority patients (~ 66%) were transferred to Cardiology ward and cabin after initial stabilization. Around 17.3% were discharged directly from CCU and 58 (5.42%) patients transfer to other department after recovery. Among the admitted patient in CCU, condition of 59 (5.5%) were become critical for which they needed to transfer under care of Critical Care Medicine (CCM) and 27 (2.5%) were transferred to nearby cardiac center for intervention. In spite of all possible measures, 35 (3.3%) patients were expired.

Table-V: Outcome after admission in CCU (N=1069)

Outcome	Number	Percentage (%)
Discharge	**185**	
- Discharge with Advice	65	6.1
- Discharge on request	41	3.8
- Discharge on bond	79	7.4
Transfer to Ward	629	58.8
Transfer to Cabin	76	7.1
Transfer out	**144**	**13.4**

▪ Critical Care Medicine	59	
ICU	56	5.2
HDU	01	0.1
SICU	02	0.2
▪ Intervention	27	2.5
▪ Nephrology	15	1.4
▪ Hemodialysis	9	0.7
▪ Other Disciplines	34	3.3
Death	**35**	**3.3**

HDU: High Dependency Unit, ICU: Intensive Care Unit, SICU: Surgical Intensive Care Unit

Table-VI: Incidence of Arrhythmia (n=180)

Arrhythmia	Number	Percentage (%)
Atrial Fibrillation	**77**	42.7
- Permanent	5	
- Persistent	44	
- Paroxysmal	28	
SVT	45	25.0
VT	32	17.7
AV Block	12	6.6
- Complete AV Block	09	
- Mobitz Type-II	03	
Sick Sinus Syndrome	09	5.0
WPW Syndrome	05	2.7

AV block: Atrio-ventricular block, SVT: Supra ventricular tachycardia, VT: Ventricular tachycardia, WPW syndrome: Wolff-Parkinson-White syndrome

Table VI shows pattern of Arrhythmia and majority (42.7%) of them had Atrial Fibrillation. Supra Ventricular Tachycardia (SVT) were diagnosed among 25% of cases, Ventricular Tachycardia (VT) in 17.7% cases and 6.65% patient had Atrio-ventricular block (AV-Block). Remaining few patients had Sick Sinus Syndrome (5.0%) and Wolff-Parkinson-White syndrome (WPW Syndrome) (2.7%). Sick sinus syndrome is also known as tachy-brady syndrome which also includes sinus pauses, junctional rhythm and atrial fibrilation. WPW syndrome also known as preexitation syndrome and lead to different types of supraventricular (for example atrial fibrilation atrial flutter, atrial tachycardia, AV nodal reentrant tachycardia and atrioventricular reentrant tachycardia) and sometines venticular Arhythmias. Figure 3 shows that the mean hospital stay in days in subsequent years. The interesting finding was that the hospital stay decreased gradually in the following subsequent years.

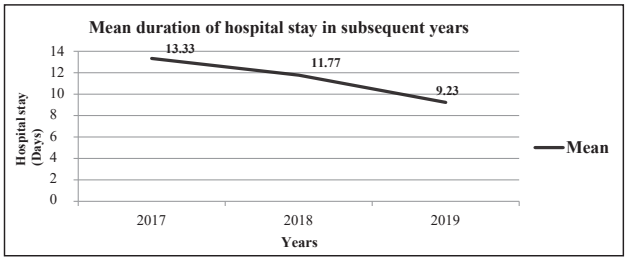

Figure 3: Mean duration of hospital stay in subsequent years

Discussion:

In our study, we found among the 1069 total admitted patients, 57.2% were male and the rest were female. Among the male, 30.32% were less than 50 years of age and 69.68% were more than 50 years. For the female, the corresponding values were 37.98% and 62.02% respectively. Most of the study population (80.54%) was diabetic and only 10.66% in male and 8.79% in female were nondiabetic. In a study done by Abdul Wadud Chowdhury et al showed that a total 2415 patients in the year 2010, were admitted at CCU of Dhaka Medical College Hospital (DMCH). Among them 56% (n=1346) were male and 44% (n=1069) were female which is almost similar to our study. But sample size was double of this study which may be due to higher number of CCU beds than ours. Out of total admitted patients, 220 (9%) were below 30 years of age and 588 (24%) & 1607 (67 %) were the age group of 31 to 44 years and 45 years and above age group respectively, similar result we found in our study indicated that most of the patient were in older age group.[29] Influences of age and gender were tried to be correlated with cardiac diasease and compared it to other similar study carried out before in different Institutions.

In the study by Abdul Wadud Chowdhury et al, ischemic heart disease(IHD) (45%) was the most common cause of hospitalization followed by heart failure (HF) (16%), valvular heart disease (9%), hypertension (7%) and arrhythmia (2%)[29]. Acute myocardial infarction (30%) was the leading cause of IHD followed by unstable angina (15%); but in our study we estimated that 701 (65.57%) patients had Ischemic Heart Disease (IHD). Among them 354 (50.50%) was NSTEMI followed by unstable angina 202 (14.4%), STEMI 73 (10.4%), IDCM 61 (8.7%) and S/P Intervention (PCI and CABG) patients were 89 (12.6%). The number of Heart failure patients were 420 (39.28%), hypertension 533 (49.85%) and Arrhythmia 180(16.08%). OMI were significantly higher among male than female, which was not mentioned in the above-mentioned study. Acute myocardial infarction (30 %) was the leading cause of IHD followed by unstable angina (15%) in another study[20] which is comparable with our study.

A study was done by Raymond I et al showed that the prevalence of systolic dysfunction (left ventricular ejection fraction 40%) was more than twice as high among men (7.6%) as among women (2.6%).[30] In the male population systolic heart failure (left ventricular ejection fraction 40% and symptoms) was found in 1.8% of the 50–59 years age group

and approximately doubled for each age decade to reach 13.9% in octogenarians. Among women, systolic dysfunction increased from 0.8% to 4.3% in the same age groups. Asymptomatic cases accounted for 44.0% of all cases of systolic dysfunction in the male population and only 9.1% in the female population. Here we found in our study that majority 57.31% of patients of IHD has moderate LV dysfunction and 29.26% has severe systolic dysfunction. Remainder 13.43% found to have mild LV systolic dysfunction which didn't match with the above mentioned study and more over we didn't observed it in between male and female.

Mohammad Kabiruzzaman et al did a hospital based cross sectional study at a tertiary cardiac hospital in Dhaka city.[31] Hospital medical records of 14009 patients admitted between January 2005 and August 2006 were reviewed and 1970 patients with the diagnosis of HF were identified. About one-seventh of total hospital admitted patient had Heart Failure. In our study we showed total 420 patients were admitted with the features of heart failure. Among them 57.14% were male and 42.85% were female. Most of them (86.19%) had acute left ventricular failure, which is comparable with that study.[31] Here incidence of heart failure in different studies has showed to compare it with our study populations incidence of heart failure in different time zone to find out whether the incidence is similar or decreasing or it increasing.

We showed in our study that the incidence of associated comorbidities among admitted patient in CCU. Mostly (80.54%) were diabetic. 49.8% of them had Hypertension and 24.3% had CKD in different form. In one study done by Md. Alahi Khandaker published in Asian Journal of Cardiology Research, found that 68.1% of the respondents were with diabetes mellitus, 82.2% of the respondents with hypertension and 75.6% of our respondents were with dyslipidemia which could be contrast with our study as they didn't included the CKD in their study.[32]

In our above mentioned study we showed the different outcome of the admitted patient in CCU. Majority patients (~ 66%) were transfer to Cardiology ward and cabin after initial stabilization. Around 17.3% were discharged directly from CCU and 58 (5.42%) patients transfer to other department after recovery. Among the admitted patient in CCU, condition of 59 (5.5%) were become critical for which they need to transfer under care of CCM and 27 (2.5%) were transfer to nearby cardiac center for intervention. In spite of all possible measures 35 (3.3%) patients were expired. We did not find any other such study showing the outcome by mentioning the data of transferred patients.

In our study the result showed that the mean hospital stay in days. The interesting finding was that the hospital stay decreased gradually in the following subsequent years. We can compare the result in one study done by Irfan SMR et al.[33] In that study showed that the duration of hospital stay from 2011 to 2017 was gradually declined to 11.34, 11.01, 9.61, 9.03, 8.87, 7.89 and 7.35 days in the Department of cardiology of the same hospital (BIRDEM General Hospital).[33]

In a study by Abdallah Bukari showed 61.8% were found to have any atrial arrhythmia (AA) at follow-up. Individual prevalence of AAs was high as follows: AF 43.5%, atrial flutter (AFL) 6.5%, AT 25%, and AVNRT 6.8%. AF was documented in 23% of patients (n = 74) prior to pacemaker; among those, 15% (n = 11) had no recurrence of AF with average atrial pacing (AP) of 74%. The incidence of new-onset AF after pacemaker was 15.8%. In subgroup analysis, prevalence of AF was increased by 16% with high rate of AP (81–100%) and 17% with lower rate of AP (0–20%). Incidence of new-onset AF was not affected by AP. Diabetes, hypertension, and left atrial enlargement were predictors of AAs. In our study we found pattern of Arrhythmia and majority (42.7%) of them had Atrial Fibrillation. SVT were diagnosed among 25% of cases, VT IN 17.7% cases and 6.65% patient had AV-Block. Remaining few patients had Sick Sinus Syndrome (5.0%) and WPW Syndrome (2.7%). We may conclude in such a way that in the above mentioned study they didn't estimate the Sick Sinus Syndrome and WPW Syndrome.[34]

Conclusion:

In this study, incidence of IHD found higher than other cardiac diseases. NSTEMI is about three times more than Unstable Angina and about five times more prevalent than STEMI for the reason of admission in CCU. Diabetes Mellitus was found in majority of the study population and the number of diabetic population is increasing day by day which may also responsible for leading more coronary heart disease in our country in future.

This was a small study in specific group of population having particular social, educational and economic background. So this may not reflect the exact scenario of the diseases. We are not really aware of the actual magnitude of these diseases in our population. Therefore national based wide range assessment is required for early detection followed by adequate steps to make aware for better glycemic control to prevent vascular complications related with disability and death.

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