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Outcome of Heart Rate and Blood Pressure of a Patient after Successful Coronary Angioplasty and Stenting

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Abstract **Original Research Article**

***Background*:** When left main coronary artery stenosis is significant, bypass surgery is the recommended treatment option. An alternate therapy, angioplasty with stenting, has been recommended by the outcomes of many multicenter studies. ***Objective*:** In this study our main goal is to evaluate the outcome of Heart Rate and Blood Pressure of a Patient after Successful Coronary Angioplasty and Stenting. ***Method*:** This cross-sectional study was carried out at tertiary hospital from January 2021 to January 2022. Where 100 patients stent implantation was carried out both men and women aged 69±8 years (range, 50-85 years) with serious LMCA lesions were included. ***Results*:** During the study, 55% were belonging to 50-60 years age group and 75% were male. 55% had hypercholesteremia, 57% had atrial hypertension, 55% diagnostics angiography 52% diabetes milieus, 71% had unstable angina. In the urgent-treatment group 40% had Hypercholesteremia and 59% had a trial hypertension. Whereas elective-treatment group in the urgent-treatment group 49% had Hypercholesteremia and 62% had a trial hypertension. ***Conclusion*:** Hypertension is a major risk factor in development of different cardiovascular events. Control of hypertension is crucial in reducing overall mortality and morbidity from ACS. In the study multiple drugs was manage to control blood pressure adequately.

Keywords: Heart Rate, Blood Pressure, Coronary Angioplasty and Stenting.

INTRODUCTION

Blood pressure is the force exerted on blood vessels by the blood being expelled during cardiac contraction. The increased workload on the arteries (and the heart) caused by high blood pressure increases the risk of cardiovascular events including heart attacks and strokes. Hypertension, or high blood pressure, is often without noticeable symptoms in those who suffer from it.

Millimeters of mercury are the standard unit for measuring blood pressure (mmHg). Below 120/80 mmHg is considered normal for blood pressure.

The average blood pressure for an adult in Bangladesh is between 120 and 140 over 80. Hypertension, or high blood pressure, is diagnosed when the average of two consecutive measurements is 140 over 90. Some kinds of dementia are intimately connected to hypertension, which is also associated with heart and renal disorders. African-Caribbean and South Asian people are disproportionately affected by hypertension [4].

The coronary arteries provide the heart with blood. Arteries in the heart may narrow and stiffen with age (a condition known as atherosclerosis), putting older individuals at risk for heart disease. Angina is a kind of chest discomfort brought on by a reduction in blood supply to the heart. To unblock or otherwise improve the flow of blood to the heart, a coronary angioplasty may be performed. FiveAngioplasty is the procedure when a balloon is used to dilate a constricted artery. However, in most contemporary cases of angioplasty, a small wire-mesh tube (a stent) is inserted into the artery to keep it open [5, 6].

In order to restore blood flow, the stent is kept in place permanently. As a rule, the term "percutaneous coronary intervention" is reserved for procedures that include both angioplasty and stenting of the coronary arteries (PCI). After a cardiac arrest [7], PCI is often employed as a quick and effective therapeutic option.

In this study our main goal is to evaluate the outcome of Heart Rate and Blood Pressure of a Patient after Successful Coronary Angioplasty and Stenting.

OBJECTIVE

To assess the Heart Rate and Blood Pressure of a Patient after Successful Coronary Angioplasty and Stenting.

METHOD

This cross sectional study was carried out at tertiary hospital from January 2021 to January 2022. Where 100 patients stent implantation was carried out both men and women aged 69±8 years (range, 50-85 years) with serious LMCA lesions were included. In all patients, the vessel was accessed via the femoral artery. Size 6 Fr angioplasty catheters were used. Before carrying out the procedure, heparin sodium, at a dose of 100 mg/kg, was administered. In 8 patients (21%), an abciximab bolus, 0.25 mg/kg, was given with subsequent continuous perfusion for 12 hours.

RESULTS

Table-1 shows age distribution of the patients where 55% were belong to 50-60 years age group. Followed by 20% belong to >60 years age group and 25% belong to <50 years age group.

Table 1: Age distribution of the patients

Age group	Percentage (%)
<50 years	25%
50-60 years	55%
>60 years	20%

Figure 1 shows gender distribution where majority were male 75%.

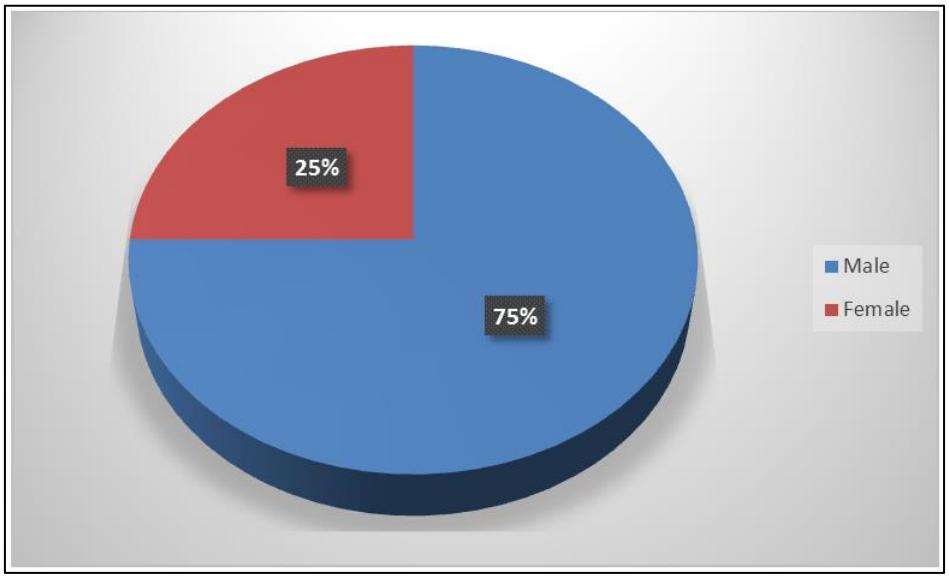

Figure 1: Gender Distribution

Table-2 shows clinical status of the patients 55% had hypercholesteremia, 57% had atrial hypertension, 55% diagnostics angiography 52% diabetes milieus, 71% had unstable angina.

Table 2: Clinical status of the patients

Clinical status	Urgent, %
Hypercholesteremia	55%
Atrial hypertension	57%
diagnostic angiography	55%
Diabetes milieus	52%
Unstable angina	71%
Acute myocardial infraction	29%

Table-3 shows elective-treatment and urgent-treatment groups outcome where in the urgent-treatment group 40% had Hypercholesteremia and 59% had a trial hypertension. Whereas elective-treatment group in the urgent-treatment group 49% had Hypercholesteremia and 62% had a trial hypertension.

Table 3: Elective-treatment and urgent-treatment groups' outcome

Clinical outcome	Urgent, %	Elective, %	P value
Hypercholesteremia	40%	49%	0.1
Atrial hypertension	59%	62%	0.2
Renal insufficiency	0%	8%	<0.005
Unstable angina	0%	92%	<0.005
Mean Blood pressure	120/70mmHg	130/90mmHg	0.001
Mean heart rate	160±1.1bpm	150±1.1bpm	0.001

Figure 2 shows Accumulated survival probability in the elective-treatment group (solid line) compared with the urgent-treatment group (dotted line). Where Urgent treatment was associated with greater mortality, which generally occurred during the first 6 months following angioplasty.

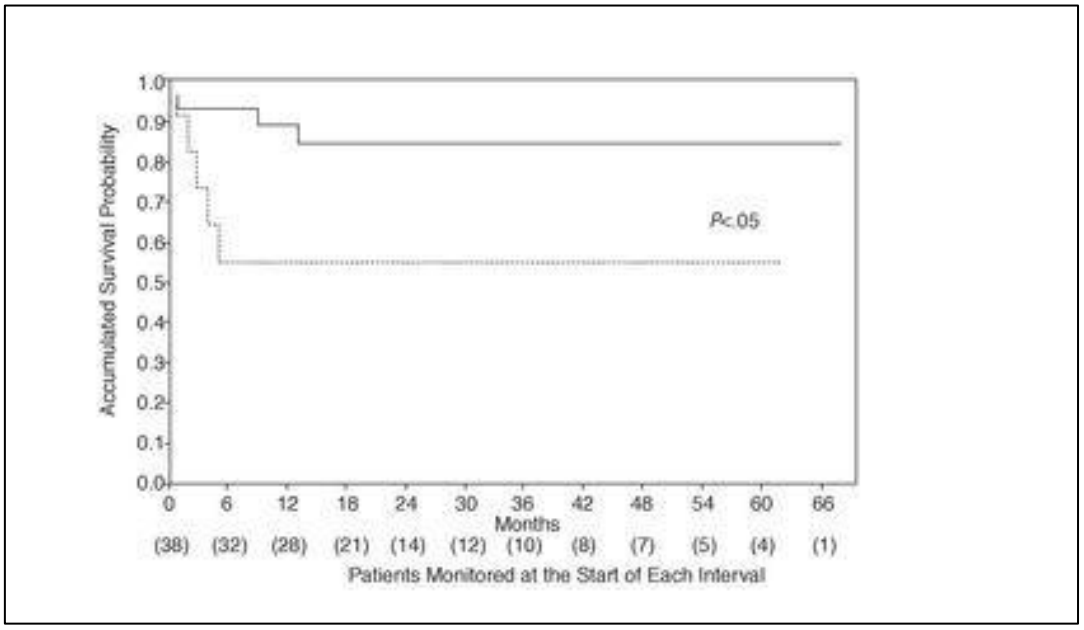

Figure 2: Accumulated survival probability in the elective-treatment group (solid line) compared with the urgent-treatment group (dotted line)

DISCUSSION

Mortality rates are higher in the medium and long term after conventional balloon angioplasty of the LMCA [7]. The death rate in individuals receiving elective angioplasty ranged from 4.3% to 9.1% depending on whether or not they had a protected LMCA, according to a study by O'Keefe *et al.*, [8]. The rate of mortality at 20 months was 65%. As a result, traditional LMCA angioplasty has only been used for high-risk surgical candidates and those who need immediate care. Due to the abundance of elastic fibers in artery walls, the phenomenon of elastic recoil is also more common with LMCA angioplasty [8]. Indications for LMCA angioplasty have grown as the use of stents in the treatment of coronary artery disease has become more commonplace. Stents' primary advantages lie in their ability to lessen the likelihood of acute occlusion, stop elastic rebound of the artery wall, and cut down on the frequency of restenosis [9].

The present study did not include angiographic follow-up. The repeat percutaneous revascularization rate was 7% (i.e., in 2 of 29 patients). In contrast to reports of other series, 13 no patient was referred for surgery in the present study. However, it is important to stress that restenosis manifested as sudden death and fatal AMI in 3 patients, all of whom were undergoing elective treatment and had unprotected LMCA. Consequently, in patients with LMCA stents, it is advisable to monitor their clinical condition regularly during the first few months after angioplasty. In addition, it has been suggested that angiographi c studies should be carried out early, between 6- and 16-weeks following angioplasty, to detect rapidly developing restenosis. However, the actual benefit of angiography in this context has not been established. The use of stents coated with antiproliferative agents, which have recently become available on the market, could help reduce cardiac event and revascularization rates during follow-up [10, 11].

Moroever after managing our patients' blood pressure was controlled. However, in the other study shows the patient had blood pressure which was higher in the morning than at late evening. The cause of this is

unknown but the cause may be due to work related stress before going to office and lack of sleep due to overtime work at night. The patient failed to maintain the lifestyle modifications recommended by the doctors which included relaxation therapy, decreasing work load and anger management. All these are possible factors which may have contributed to uncontrolled hypertension. This agrees with the findings of Djindjic *et al.*, (2012) [8] who found that total Occupational Stress Index (OSI) associated significantly with arterial hypertension, DM type 2 and dyslipidemia in both genders. Patient was advised to undergo regular checkup which the patient did. The patient underwent multiple investigation including CK- MB, HB% which were normal and Troponin–I which was initially slightly high but later normalized. All evidence indicated a successful Angioplasty and Stenting [12].

CONCLUSION

Hypertension is a major risk factor in development of different cardiovascular events. Control of hypertension is crucial in reducing overall mortality and morbidity from ACS. In the study multiple drugs was manage to control blood pressure adequately.

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