A study of incidence of arrhythmia during angioplasty procedures

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Abstract
Introduction: These arrhythmias are thought to be indicators of successful reperfusion. However, in some studies it was mentioned that these arrhythmias may be due to ongoing myocardial cell damage and ischemia. **Aims and Objectives:** Study of Incidence of Arrhythmia during Angioplasty Procedures. **Methodology:** This was a Hospital based cross-sectional study in the Patients Angioplasty procedures for the ischemic heart disease, all the patient with age more than 20 yrs. during the Year December 2014- December 15 were taken into study those patients who given written consent were included into study while those who does not given consent and having serious illness and immuno -compromised state like uncontrolled diabetes etc. Were excluded from the study. **Result:** The majority of the Patients were from 40-50 i.e. 28.40% followed by 30-40- 25.00%,50-60-19.31%, >60-17.04%, 20-30- 10.22% respectively .Majority of the Patients were Male i.e. 60.22 % and 39.77% were Female . The most common types of Arrhythmia after Angioplasty procedure were AV Block i.e. 6.81% followed by Reperfusion arrhythmias-5.68% Ventricular fibrillation- 4.54%, AIVR-3.40%, Sustained VT -2.27%, Frequent PVCs-2.27%, No sustained VT-2.27%, Atrial fibrillation -1.13% were respectively. Out of the total 2 5 complications 72.00% Recovered and Death occurred in 8.00% and 12.00% referred to higher Cardio-logical management. **Conclusion:** In our study The most common types of Arrhythmia after Angioplasty procedure were AV Block, followed by Reperfusion arrhythmias-Death occurred in 8.00% and 12.00% referred to higher Cardio-logical management.
Key Words: Angioplasty Procedure, Accelerated idioventricular rhythm, ventricular tachycardia, atrioventricular, premature ventricular contractions.

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INTRODUCTION

These arrhythmias are thought to be indicators of successful reperfusion. However, in some studies it was mentioned that these arrhytmias may be due to ongoing myocardial cell damage and ischemia [1]. In acute myocardial infarction, ventricular tachycardia (VT) and ventricular fibrillation (VF) may occur due to either complete occlusion or reperfusion. Rhythm disorders associated with coronary occlusion are defined as ischemic arrhytmias, whereas arrhythmias occurring as the result of increased myocardial perfusion are called reperfusion arrhythmias [2]. Accelerated idioventricular rhythm may be a marker of early reperfusion and continuing arterial patency. In a previous study, the presence of accelerated idioventricularrhythm combined with normalization of ST segments was demonstrated to indicate successful reperfusion in patientstreated with thrombolytics and there was no requirement for emergency coronary angiography and rescue percutaneous coronary intervention (PCI) in this group of patients [3].It has been reported that the use of small size and universal catheters can reduce access-site complications,[4,6]simplify the procedures of catheter manipulation and shorten the time of x-ray exposure.[6]However, its influence on episodes of VA hasn't been discussed so far so we have studied the

incidence of Arrhythmia following Angioplasty procedure .

METHODOLOGY

This was a Hospital based cross-sectional study in the Patients Angioplasty procedures for the ischemic heart disease, all the patient with age more than 20 yrs. during the Year December 2014- December 15 were taken into study those patients who given written consent were included into study while those who does not given consent and having serious illness and immuno - compromised state like uncontrolled diabetes etc. Were excluded from the study.

RESULT

Table 1: Age wise Distribution of the Patients

Age	No.	Percentage (%)
20-30	9	10.22%
30-40	22	25.00%
40-50	25	28.40%
50-60	17	19.31%
>60	15	17.04%
Total	**88**	**100.00%**

The majority of the Patients were from 40-50 i.e. 28.40% followed by 30-40- 25.00%,50-60
-19.31%, >60-17.04%, 20-30- 10.22%respectively.

Table 2: Gender wise Distribution of the Patients

Sex	No.	Percentage (%)
Male	53	60.22 %
Female	35	39.78%
Total	88	100.00%

Majority of the Patients were Male i.e. 60.22 % and 39.78%were Female

Table 3: Incidence of Arrhythmia

Arrhythmia	No.	Percentage (%)
Reperfusion arrhythmias	5	5.68%
AIVR	3	3.40%
Sustained VT	2	2.27%
Ventricular fibrillation	4	4.54%
Frequent PVCs	2	2.27%
Atrial fibrillation	1	1.13%
Nonsustained VT	2	2.27%
AV Block	6	6.81%
Total	**25**	**28.40%**

AIVR: accelerated idioventricular rhythm, VT: ventricular tachycardia, AV: atrioventricular, and PVCs: premature ventricular contractions. The most common types of Arrhythmia after Angioplasty procedure were AV Block i.e. 6.81% followed by Reperfusion arrhythmias-5.68%Ventricular fibrillation- 4.54%, AIVR-3.40%, Sustained VT -2.27%, Frequent PVCs-2.27%, Nonsustained VT-2.27%, Atrial fibrillation -1.13% were respectively.

Table 4: Outcome in the Patients

Outcome	No.	Percentage
Recovered	18	72.00%
Death	2	8.00%
Referred to Higher Centre	3	12.00%
Total	**25**	**100%**

Out of the total 2 5 complications 72.00% Recovered and Death occurred in 8.00% and 12.00% referred to higher Cardio-logical management.

DISCUSSION

The incidence of VA during CA using 5F or 4F universal catheter was lower than previous studies.[7,8] New nonionic contrast agents lowered the incidence of VF[9,10]; a smaller size catheter can reduce the incidence of catheter occlusion, and it also tends to reduce the volume of contrast material injections as well. We consider that these contribute mainly to the decreased incidence. Similar to previous studies,[8]the episode of VA was more frequent during RCA procedures than LCA procedures
The incidence of the development of AF in acute MI is about 5–10% and it is known that AF development in acute MI is usually due to impaired left ventricular function or poor reperfusion [15]. Celik et al. reported that in patients who underwent PTCA, p dispersion was reduced, showing that successful reperfusion may reduce the likelihood of development of AF [16]. On the contrary, the incidence of AF could increase in patients with poor reperfusion. The left ventricular functions in both groups of patients were normal in this study. Therefore, the cause of AF was thought to beresiduel ischemia or poor reperfusion instead of impaired left ventricular functions. Unlike thrombolytic group, we observed significantly lower rates of AF in PTCA group. Six et al. investigated the predictive value of ventricular arryhtmias as an indicator of angiographic arterial patency after thrombolytic therapy. Among these, AIVR was the most sensitive and specific arrythmia in cases of successful reperfusion [17]. In contrast, Bonnemeier et al. demonstrated that only 19 of 125 patients who were successfully treated with primary PCI exhibited AIVR which indicated a poor relationship between TIMI 2 or 3 flow and reperfusion arrhythmia and declared that AIVR may not be used as a reperfusion criteria [18]. Terkelsen et al. mentioned that although AIVR does not meet criteria for reperfusion, it may be an indicator of more extensive myocardial damage and delayed microvascular reperfusion in a study of 503 patients who were treated by primary PTCA [19] In our study we have observed that The majority of the Patients were from 40-50 i.e. 28.40% followed by 30-40- 25.00%, 50-60-19.31%, >60-17.04%, 20-30- 10.22% respectively. Majority of the Patients were Male i.e. 60.22 % and 39.77% were Female. The most

common types of Arrhythmia after Angioplasty procedure were premature ventricular contractions. AV Block i.e. 6.81% followed by Reperfusion arrhythmias- 5.68% Ventricular fibrillation- 4.54%, AIVR-3.40%, Sustained VT -2.27%, Frequent PVCs-2.27%, Nonsustained VT-2.27%, Atrial fibrillation -1.13% were respectively. Out of the total 2 5 complications 72.00% Recovered and Death occurred in 8.00% and 12.00% referred to higher Cardiology Department for next management by experts .

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