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Research Article

### ANALYSIS OF ASPIRIN IN COMBINATION WITH CLOPIDOGREL IN THE TREATMENT OF ACUTE MYOCARDIAL INFARCTION PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION

Dr Sana Hanif<sup>1</sup>, Dr Madiha Ansar<sup>2</sup>, Dr Tahira Yasmeen<sup>3</sup>

<sup>1</sup>Allied hospital, Faisalabad.

<sup>2</sup>Lahore General Hospital Lahore

<sup>3</sup>Holy family hospital, Rawalpindi

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**Abstract:**

**Introduction:** Acute myocardial infarction is defined as partial acute necrosis of the myocardium caused by persistent and severe myocardial ischemia. **Aims and objectives:** The basic aim of the study is to analyse the aspirin in combination with clopidogrel in the treatment of acute myocardial infarction patients undergoing percutaneous coronary intervention. **Material and methods:** This cross sectional study was conducted in Allied hospital, Faisalabad during June 2018 to January 2019. The data was collected from 100 patients of acute myocardial infarction. The data was collected through non-probability sampling technique. The data was divided into two groups one was control and one was study group. Patients in both groups underwent PCI under the guidance of coronary angiography and received conventional drug therapy associated with PCI. Continuous nursing intervention was carried out after operation. **Results:** The data was collected from 100 patients. The total effective rate of the observation group and the control group was 89.4% and 81.8%, respectively with no significant difference. As regards re-thrombosis the observation group was significantly lower than that in the control group. Before treatment, there was no significant difference in LVEDD and LVESD between the two groups ( $P > 0.05$ ). After treatment, the decrease of LVEDD and LVESD in the observation group was more significant than that in the control group, and the difference was statistically significant. **Conclusion:** It is concluded that the treatment based on aspirin combined with clopidogrel has better clinical efficacy than aspirin alone. The therapy can effectively improve the cardiac function of patients.

**Corresponding author:****Dr. Sana Hanif,**

Allied hospital, Faisalabad.

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**INTRODUCTION:**

Acute myocardial infarction is defined as partial acute necrosis of the myocardium caused by persistent and severe myocardial ischemia. It is characterized by severe and persistent retrosternal pain, increased serum myocardial enzymes activity and progressive electrocardiographic changes. Some patients may also suffer from arrhythmia, shock and heart failure, which seriously threatens the lives of patients [1]. With the aggravation of aging, the improvement of people's living standard and the change of life style, the incidence of coronary atherosclerotic heart disease is increasing year by year, and the age of patients becomes younger [2]. Dual antiplatelet therapy (DAPT) with aspirin and a P2Y<sub>12</sub> receptor inhibitor is standard of care following percutaneous coronary intervention (PCI) for patients with acute myocardial infarction (MI) [3]. However, approximately 5% to 10% of patients who have acute MIs have conditions, such as atrial fibrillation or prosthetic valves, for which oral anticoagulants provide superior benefit when compared with antiplatelet agents. Patients with an indication for anticoagulant therapy on top of DAPT represent a clinical conundrum, given the lack of rigorous evidence supporting net clinical benefit with triple therapy use [4].

At present, the most effective treatment for acute myocardial infarction is percutaneous coronary intervention (PCI), which can effectively relieve the clinical symptoms of patients. However, a large number of studies have shown that patients with acute myocardial infarction are prone to re-thrombosis or vascular stenosis after receiving PCI. Therefore, post-PCI continuous antithrombotic therapy is very important. Currently aspirin is commonly used in clinic, but it is limited in clinical application because of its slow onset and high variability [5].

**Aims and objectives**

The basic aim of the study is to analyse the aspirin in combination with clopidogrel in the treatment of acute myocardial infarction patients undergoing percutaneous coronary intervention.

**MATERIAL AND METHODS:**

This cross sectional study was conducted in Allied hospital, Faisalabad during June 2018 to January 2019. The data was collected from 100 patients of acute myocardial infarction. The data was collected through non-probability sampling technique. The data was divided into two groups one was control and one was study group. Patients in both groups underwent PCI under the guidance of coronary angiography and received conventional drug therapy associated with PCI. Continuous nursing intervention was carried out after operation. Firstly, a continuous intervention group which was composed of attending doctors, competent nurses and head nurses was set up, and the group members were trained comprehensively, including communication skills, knowledge of continuous nursing and specialty knowledge about PCI for acute myocardial infarction. The patients in the control group were given 300 mg of aspirin enteric-coated tablets immediately after admission. Patients in the observation group were given 600 mg of clopidogrel bisulfate tablets immediately after admission and 300 mg of aspirin enteric-coated tablets.

**Statistical analysis**

The data were processed by SPSS 21.0. The measurement data were expressed by Mean±SD and processed by t test.

**RESULTS:**

The data was collected from 100 patients. The total effective rate of the observation group and the control group was 89.4% and 81.8%, respectively with no significant difference. As regards re-thrombosis the observation group was significantly lower than that in the control group. Before treatment, there was no significant difference in LVEDD and LVESD between the two groups ( $P>0.05$ ). After treatment, the decrease of LVEDD and LVESD in the observation group was more significant than that in the control group, and the difference was statistically significant.

**Table 01:** Cardiac function indicators between the two groups before and after treatment.

Group		Observation group	Control group
LVEDD	Before treatment	69.50±9.86	69.45±9.91
	After treatment	47.00±7.51 <sup>*#</sup>	68.01±8.49
LVESD	Before treatment	58.00±10.51	57.96±10.54
	After treatment	36.05±7.50 <sup>*#</sup>	56.00±10.55

**Table 02:** Coagulation indicators and platelet aggregation rate.

Group		Observation group	Control group
PT	Before treatment	11.32±2.68	11.24±2.57
	After treatment	12.01±3.38	11.59±3.41
APTT	Before treatment	33.61±5.63	33.52±5.87
	After treatment	39.44±6.57*	39.21±6.18*
PA	Before treatment	0.88±0.06	0.89±0.07
	After treatment	0.89±0.07	0.89±0.08

**DISCUSSION:**

The pathological background of myocardial infarction is rupture of unstable plaque of coronary artery or secondary thrombosis. Therefore clinical acute symptoms such as acute myocardial infarction may happen when thrombogenesis progresses to a certain degree. The main principle of clinical treatment of acute myocardial infarction is to open the related infarct vessels as soon as possible to promote the recovery of myocardial blood flow and rescue the dying myocardium [6]. Emergency PCI is one of the effective measures for the treatment of acute myocardial infarction. In emergency PCI, trauma is mild, the opening rate of infarct vessels is more than 90%, and there is no absolute contraindication [7]. But in the process of PCI, balloon dilatation, stent implantation and other instruments are needed, which can exert pressure on the wall of coronary artery and then induce plaque rupture and intima and media injury of coronary artery [8]. Intima and media injury of coronary artery can activate platelets and promote platelet adhesion and aggregation to form thrombus [9]. Therefore, hemolysis and antithrombotic therapy are the keys to successful PCI. In the past, aspirin was used more frequently [10]. The antiplatelet mechanism of aspirin is to make arachidonic acid lose its ability to transform into prostaglandin endoperoxide and hindering the formation of prostaglandin E2 and thromboxane A2 through inhibiting the activity of cyclooxygenase in platelets [11].

**CONCLUSION:**

It is concluded that the treatment based on aspirin combined with clopidogrel has better clinical efficacy than aspirin alone. The therapy can effectively improve the cardiac function of patients.

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