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Short term outcomes of administering antiplatelet clopidogrel Loading dose in the Emergency Department for low-risk acute coronary syndrome patient in North West Bank hospitals

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Declaration

I certify that this thesis submitted for the degree of master, is the result of my research, except where otherwise acknowledged, and that this study (or any part of the same) has not been submitted for a higher degree to any other university or institution.

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Date: 30-11-2021

Dedication

I dedicate this work to the Almighty Allah for preserving my life, ensure my security in West Bank during the COVID-19 pandemic, and gave me good health and strength to be able to do this work.

To my parents for their endless prayers and my family for their encouragement.

To my lovely friends Mr. Ali Aboamash and Mr. Ameen Enaya for their patience and support.

To my friends for support and encouragement.

To all martyrs and injuries in Palestine.

To every person help me to finish this work.

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Short term outcomes of administering antiplatelet clopidogrel loading dose in the Emergency Department for low-risk acute coronary syndrome patient in North West Bank hospitals

Abstract

Background: Antiplatelet clopidogrel loading dose significantly improves outcome in patients undergoing Percutaneous coronary intervention; however, the efficacy of loading strategy before Percutaneous coronary intervention after coronary angiography versus routine pretreatment has not been fully characterized for low-risk Acute coronary syndrome patients.

Aim: Identify the prevalence of clopidogrel loading dose short-term outcomes (Hematoma, Length of stay & Transient Ischemic Attack) in low-risk Acute coronary syndrome patients, the clinical manifestations of low-risk Acute coronary syndrome, and the relationship between group A and group B regarding patients' characteristics (ages, gender, etc.), finally, to identify the prevalence of coronary angiography finding.

Methodology: A prospective, descriptive, comparative, quantitative study design. A total of 352 patients with low-risk Acute coronary syndrome were convenient to receive a 300mg clopidogrel and 300mg aspirin loading dose, before coronary angiography (Group B n: 252), or post coronary angiography in case Percutaneous coronary intervention (Group A n:100). The endpoint was hematoma and Transient Ischemic Attack in case of coronary intervention and surgical intervention, Length of stay in case of surgical intervention.

Result: There was a statistically significant difference (X^2= 9.83 & Sig. = 0.020) due to the rate of endpoint, (hematoma, Transient Ischemic Attack) between the two groups, and for

Length of stay for coronary artery bypass graft (t= 9.39, p<0.001). Hematoma occurs in 4% in group A and 8.1% in group B. Transient Ischemic Attack complication occur in 0.7% in group B and no any case in group A (0.0%). The mean Length of stay in group A is 4.18 days while in group B 6.59 days.

Conclusion: Pretreatment Antiplatelet loading dose before elective coronary angiography increases the risk of minor bleeding complication, Transient Ischemic Attack, and increase Length of stay in case of surgical intervention. It can be administered safely in the catheterization lab between coronary angiography and Percutaneous coronary intervention in patient with low-risk Acute coronary syndrome. We suppose that Pretreatment antiplatelet loading dose should be used before planned elective Percutaneous coronary intervention, but not before planned elective coronary angiography.

Keywords: Low-risk Acute coronary syndrome, Pretreatment, Antiplatelet loading dose, short-term outcome

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List of Abbreviations

ACS: Acute coronary syndrome

CA: Coronary angiography

CABG: Coronary arteries bypass graft

CAD: Coronary artery disease

CAG: Coronary angiography

CHD: Coronary heart disease

CURE: Clopidogrel in unstable angina prevent recurrent

CVA: Crebrovascular accident

DAPT: Dual Antiplatelet Therapy

ECG: Electrocardiogram

ER: Emergency room

LHC: Left heart catheterization

LOS: Length of stay

MI: Myocardial infarction

NSTEMI: Non ST elevation myocardial infarction

PCI: Percutaneous coronary intervention

STEMI: ST elevation myocardial infarction

TIA: Transient ischemic attack

TIMI: Thromolysis in myocardial infarction

UA: Unstable angina

Chapter 1: Introduction

1.1 Introduction

Coronary artery disease (CAD) remains a leading cause of mortality worldwide. Acute coronary syndrome (ACS), the most severe manifestation of CAD, is burdened by significant mortality, concerning approximately 5%–8% of the cases within six months of diagnosis (Guedeney & Colletet. 2020).

Unstable angina (UA) and myocardial infarction (MI) with or without electrocardiographic (ECG) evidence of ST-segment elevation are referred to as acute coronary syndrome (ACS) (Switaj & Christensen. 2017).

Clinical criteria for UA confirmation were based on chart review and required documentation that: (1) symptoms were consistent with the acute coronary syndrome; and (2) symptoms were (a) new-onset, (b) nocturnal, (c) worsening, or (e) described by the physician as representing definite or probable unstable angina (Mirza et al., 2018).

Chest pain was classified as typical or atypical based on the symptoms. The typical symptoms define as (1) chest pain characterized by squeezing, tightness, aching, crushing, arm discomfort, dullness, fullness, heaviness, or pressure aggravated by exercise or relieved by rest or nitroglycerin; and located on right or left of substernal. The absence of a typical presentation was termed as atypical presentation (Sanchis-Gomar et al., 2016).

The majority of ACS patients (53–74%) complain of chest discomfort. However, investigations have shown that individuals who are subsequently diagnosed with ACS often arrive with atypical symptoms, i.e., symptoms that do not fit the traditional criteria of

angina. Patients who arrive in the hospital with ACS but no chest discomfort or unusual chest pain may be deemed low risk for ischemia (Holmberg et al., 2018).

1.2 Background

Thrombosis has been identified as a cause of coronary artery occlusion in individuals with acute coronary syndromes (ACS), prompting treatment with fibrinolytic, antiplatelet, and antithrombotic medication (Dworeck et al., 2020).

Following an acute coronary syndrome (ACS), recurrent ischemia episodes are prevalent. Antithrombotic medication combined with coronary revascularization lowers the risk of such life-threatening occurrences (Capodanno & Angiolillo. 2015).

Dual antiplatelet therapy (DAPT) with aspirin and a P2Y12 receptor inhibitor is the standard of care in patients with acute coronary syndromes (ACS) (Tarantini et al., 2020).

New agents have been introduced to the present treatment over the last 30 years, usually delivering a marginal benefit while also raising the risk of bleeding. This was an acceptable risk as long as the risk of bleeding was low and the treatment lowered ischemic outcomes (Layne & Ferro. 2017).

However, with the greater use of antithrombotic medications and early revascularization, bleeding has become a more serious issue (Al-Hijji et al., 2019).

In an era where high-risk ACS patients have early cardiac catheterization and revascularization, the current review explores techniques to retain the advantages of antithrombotic and antiplatelet medication while minimizing the risk of hemorrhage (Delia et al., 2015).

In acute coronary syndromes (ACS), pretreatment with anti P2Y12 medicines before to angiography is linked to a lower risk of thrombotic events. However, recent evidence has questioned the benefits of upstream antiP2Y12, reporting a higher incidence of bleeding (Capodanno et al., 2018).

Pretreatment refers to taking aspirin and P2Y12 receptor inhibitors before having coronary angiography. The goal of pretreatment is to ensure adequate platelet inhibition as soon as possible if an ACS diagnosis is suspected (Guedeney & colletet. 2020).

Pretreatment refers to a situation in which a drug is administered in an ambulance, at a referral hospital, in the medical emergency department, in the cardiac intensive care unit, or even in the cath lab following coronary angiography and before to PCI (Capodanno . 2015).

Clopidogrel is the most investigated P2Y12 receptor, and it is still the most widely utilized. However, a key therapeutic conundrum, exacerbated in recent years by the emergence of novel antiplatelet medicines, both oral (prasugrel and ticagrelor) and intravenous (cangrelor), is whether patients undergoing an invasive examination should be pretreated with antiplatelet therapy (Capodanno. 2015).

In investigations of patients with ACS, the reported incidence of bleeding varies greatly. The study methodology (randomized trial or community registry), the definition of bleeding severity, and patient characteristics such as demographics (e.g., age and sex), as well as comorbidities, all have a role (diabetes, hypertension, renal and hepatic impairment, and hemostatic disorders), as well as treatment factors that include concomitant therapy (antiplatelet, anticoagulant, and fibrinolytic medication), invasive

procedures (percutaneous coronary intervention [PCI] and coronary artery bypass graft), and drug administration timing related to procedures and surgery are all considerations (Doktorova & Motovska, 2013).

Although bleeding is an independent predictor outcomes following ACS, no causal link between bleeding and adverse ischemic outcome has been shown (Costa et al., 2017).

Furthermore, more serious bleeding relative to minor bleeding is associated with worse outcomes, regardless of baseline characteristics and management strategies (Delia et al., 2015).

If the diagnosis of ACS is later disproved following a coronary angiography, as may be the case in up to 35% of patients, pretreatment may expose patients to an unnecessary risk of bleeding (Guedeney & colletet. 2020).

Giving an oral P2Y12 inhibitor before determining coronary anatomy, known as a pre-treatment strategy, has the theoretical benefit of providing more ischemic protection while patients wait for coronary angiography and lowering the risk of per procedural thrombotic complications in those undergoing percutaneous coronary interventions (PCI), It may also raise the risk of per procedural bleeding in patients undergoing PCI or coronary artery bypass grafting (CABG), lengthening their hospital stay and increasing their costs (Tarantini et al., 2020).

Reducing bleeding with vascular access techniques: Vascular access techniques can help to lower the risk of significant bleeding. The danger of bleeding is reduced by using a smaller catheter and removing the artery sheath as soon as possible (Bajraktari et al., 2021).

Antithrombin therapy is avoided following sheath removal to limit the risk of bleeding and the formation of false aneurysms. The use of the radial artery for coronary angiography with or without PCI is linked to a decreased risk of severe hemorrhage (Bajraktari et al., 2021).

The 2020 ESC NSTEMI guidelines have recommended against the routine administration of P2Y12 inhibitors in patients whose coronary artery anatomy is unknown and early invasive management is planned, demonstrating a lack of benefit in terms of ischemic prevention with a consistent increase in the risk of bleeding complications associated with pretreatment.

1.3 Pathophysiology of ACS

Atherosclerosis can lead to ACS, which is a life-threatening condition. Acute thrombosis caused by a burst or degraded atherosclerotic coronary plaque, with or without accompanying vasoconstriction, causes a rapid and severe decrease in blood flow, which is the most common cause. Inflammation was discovered to be a crucial pathophysiological factor in the complicated process of plaque disruption. Arthritis, trauma, dissection, thrombo-embolism, congenital abnormalities, cocaine addiction, or consequences of cardiac catheterization are among non-atherosclerotic causes of ACS (Hamm et al., 2011).

To properly employ the current treatment options, essential pathophysiological concepts such as susceptible plaque, coronary thrombosis, vulnerable patient, endothelial dysfunction, accelerated atherothrombosis, secondary processes of NSTE-ACS, and myocardial damage must be recognized (Hamm et al., 2011).

Angiographically, the lesions that indicate ACS is generally moderate, with a thin-cap fibroatheroma, a high plaque load, a limited luminal region, or a combination of these features. Retrosternal pressure or heaviness (‘angina') radiating to the left arm, neck, or jaw is a common clinical manifestation of NSTE-ACS. It can be intermittent (typically lasting a few minutes) or chronic. Other symptoms such as diaphoresis, nausea, stomach discomfort, dyspnea, and syncope may accompany these problems. These include epigastric pain, indigestion, stabbing chest pain, chest pain with some pleuritic features, or increasing dyspnoea (Hamm et al., 2011).

1.4 Antiplatelet agents

Platelet activation and subsequent aggregation play a major role in the spread of arterial thrombosis and are thus important therapeutic targets in the treatment of ACS. When NSTE-ACS is diagnosed, antiplatelet treatment should be started as soon as feasible to minimize the risk of both acute ischemic consequences and recurring atherothrombotic episodes (Hamm et al., 2011).

Platelets can be inhibited by two classes of drugs, each of which has a distinct mechanism of action:

1.4.1 Aspirin

Acetylsalicylic acid targets cyclo-oxygenase (COX-1), inhibiting thromboxane A2 formation and inducing a functional permanent inhibition in platelets. According to research conducted 30 years ago, aspirin lowers the risk of recurrent MI or mortality in individuals with unstable angina. Between 150 to 300 mg of chewed, plain aspirin is advised as a loading dosage (Hamm et al., 2011).

1.4.2 Clopidogrel

To enable successful therapy and prevention of coronary thrombosis, platelet aggregation pathways must be blocked. Platelet activation and aggregation are aided by ADP binding to the platelet P2Y12 receptor, which amplifies the first platelet response to vascular injury. Antibodies to the P2Y12 receptor are important therapeutic strategies in the treatment of ACS. Although clopidogrel has a relatively short half-life of 6 hours, the time to peak action is 45 minutes (Hamm et al., 2011).

In the Clopidogrel in Unstable Angina to Prevent Recurrent Events (CURE) study, a 300 mg loading dose followed by 75 mg daily maintenance for 9–12 months in addition to aspirin decreased the risk of cardiovascular mortality and non-fatal MI or stroke compared to aspirin alone (Hamm et al., 2011).

Clopidogrel's 600 mg loading dosage provides a faster start of the action and a stronger inhibitory impact than the 300 mg dose. In comparison to the 75 mg dosage, a 150 mg daily maintenance dose of clopidogrel produces a somewhat larger and more persistent inhibitory effect (European Cardiology Review, 2017).

1.5 Coronary revascularization

NSTE-ACS revascularization alleviates symptoms, reduces hospital stay, and improves prognosis. The patient's health, the existence of risk characteristics, co-morbidities, and the amount and severity of the lesions revealed by coronary angiography all influence the reasons and timing for myocardial revascularization, as well as the recommended method (PCI or CABG) (Hamm et al., 2011).

1.6 Problem statement and significant

Excessive dosage raises mortality and morbidity while also lengthening hospital stays. It may also increase the risk of per procedural bleeding in patients treated by PCI or coronary artery bypass grafting (CABG), thus increasing the length of stay and hospital costs. Pretreatment may expose patients to an unnecessary risk of bleeding if the diagnosis of ACS is eventually disproved following a coronary angiogram, which may be the case in up to 35% of patients (Guedeney & Collet. 2020).

Following an accumulation of evidence demonstrating a lack of benefit in terms of ischemic prevention, as well as a consistent increase in the risk of bleeding complications associated with pretreatment, the 2020 ESC NSTEMI guidelines have recommended against the routine administration of P2Y12 inhibitors in patients whose coronary artery anatomy is unknown and early invasive management is possible (Guedeney & Collet. 2020).

Although sufficient platelet inhibition is stressed in invasively managed patients with CAD, there is limited evidence to recommend pretreatment, particularly with P2Y12 inhibitors. Indeed, in the contemporary era of ACS care, which is defined by shorter timeframes from clinical presentation to the cath lab, changes in practice patterns have intensified the debate on the benefits of pretreatment (Capodanno, 2015).

On the one hand, proponents of pretreatment debate the necessity of protecting the patient from ischemia events during the vulnerable time before and after PCI. Challengers of pretreatment, on the other hand, express concerns about an unneeded excess of platelet

inhibition and the associated bleeding risk when patients do not have PCI (i.e. when medical care or CABG is used) (Capodanno, 2015)

The main risks associated with all antiplatelet therapies are bleeding, prolonged wait for coronary artery bypass graft if indicted after coronary angiography. Other risk factors will be discussed in our study.

There are no published researches in Palestine, so health team workers need to be carefully aware and weigh the possible adverse effects against the benefits of these Antiplatelet therapies drugs in patients with low-risk ACS.

1.7 Research Aim

This study aimed to identify the prevalence of clopidogrel loading dose short-term outcomes in low-risk ACS patients, the clinical manifestations of low-risk ACS, and the relationship between group A and group B regarding patients' characteristics (ages, gender, etc.), finally, to identify the prevalence of coronary angiography finding.

1.8 RESEARCH OBJECTIVES

1. To assess the prevalence of short-term outcomes (Bleeding, LOS &TIA) of an administration loading dose of antiplatelet clopidogrel for low-risk ACS patients in North West Bank.
2. To identify the common clinical manifestations of low-risk ACS patients in North West Bank.
3. To assess the relationship between group A and group B regarding patients' characteristics (ages, gender, etc...).

4. To identify the prevalence of coronary angiography finding (Medical intervention, PCI, CABG) among low-risk ACS patients in North West Bank.

1.9 Research Question

1. What is the prevalence of short-term outcomes (Bleeding, LOS &TIA) of administering loading dose of antiplatelet clopidogrel for low-risk ACS patients in North West Bank?
2. What are the common clinical manifestations of low-risk ACS patients in North West Bank?
3. What is the prevalence of coronary angiography finding (Medical intervention, PCI, CABG) among low-risk ACS patients in North West Bank?

1.10 Hypothesis

1. H0: There is no relationship between group A versus group B regarding patients' short-term outcomes (Bleeding, LOS &TIA) of administering loading dose of antiplatelet clopidogrel for low-risk ACS patients in North West Bank.
2. H1: There is a relationship between group A versus group B regarding patients' short-term outcomes (Bleeding, LOS &TIA) of administering loading dose of antiplatelet clopidogrel for low-risk ACS patients in North West Bank.

1.11 Dependant and Independent variable

Dependant variable	Independent variable
LOS	Administration of antiplatelet drugs pre coronary angiography or post coronary angiography in case of PCI
Hematoma	
TIA	

1.12 Conceptual definition

Cardiovascular disease (CVD) is a group of diseases that include both the heart and blood vessels (1), thereby including coronary heart disease (CHD) and coronary artery disease (CAD), and acute coronary syndrome (ACS) among several other conditions (Gomar et al., 2016).

Coronary artery disease (CAD) is characterized by atherosclerosis in coronary arteries and can be asymptomatic (Gomar et al., 2016).

Coronary artery disease (CAD) refers to the syndrome of recurrent, transient episodes of chest pain reflecting demand-supply mismatch, that is, angina pectoris (Ford TJ, 2018).

Acute coronary syndromes (ACS) represent a broad spectrum of ischemic heart disease including unstable angina (UA), non-ST-segment elevation MI (NSTEMI), and ST-segment elevation MI (STEMI) (Comeau et al., 2006)

Typical and Atypical chest pain: Typical presentation was defined as (1) chest pain located substernal in the left or right chest; and (2) chest pain characterized as

squeezing, tightness, aching, crushing, arm discomfort, dullness, fullness, heaviness, or pressure aggravated by exercise or relieved with rest or nitroglycerin. The Atypical presentation was defined as the absence of typical presentation" (Canto et al. 2002).

Typical angina is ''retrosternal chest discomfort (may radiate to neck, jaw, epigastria, or arms) with a characteristic quality (squeezing, pressure-like, heavy) and duration (usually 2 –20 minutes), worsened by physical exertion or emotional stress, and relieved by rest or nitroglycerin'' (Sanchis-Gomar et al., 2016).

Stroke (of any cause) was defined as a new focal neurological deficit occurring within 24 h after coronary angiography and persisting more than 24 h (Widimsky p. 2008).

Transient ischemic attack occurs when blood flow to a part of the brain stops for a brief time. A person will have stroke-like symptoms for up to 24 hours. In most cases, the symptoms last for 1 to 2 hours (Medical Encyclopedia, 2020).

Antiplatelet therapy is the main stay of pharmacological management in patients with coronary artery disease (CAD) manifestations, particularly those with an acute coronary syndrome (ACS) or undergoing percutaneous coronary intervention (PCI**)** (Capodanno et al., 2015).

Pretreatment refers to the administration of aspirin and P2Y12 receptor inhibitors before to the coronary angiogram (Guedeney & colletet. 2020)

Pretreatment encompasses a variety of different scenarios, in which a drug is given in the ambulance, at the referral hospital, in the medical emergency department, in

the cardiac intensive care unit, or even in the cath-laboratory after coronary angiography and before PCI (Capodanno et al., 2015).

Clopidogrel pretreatment was defined as any dose of clopidogrel (300/600/ or 75 mg in clopidogrel chronically treated patients) administered at the time of the first medical contact before to coronary angiography or PCI (Delia et al., 2015).

Dual antiplatelet therapy (DAPT) combining aspirin with an inhibitor of platelet P2Y12 receptor is the cornerstone of antithrombotic treatment of ACS (Delia et al., 2015).

Coronary angiography is an invasive diagnostic procedure that allows visualization of the coronary circulation. It is the preferred method for diagnosis of intracoronary lesions, given its low risk of major complications and the possibility of performing an intervention during the same procedure if warranted (Mendirichaga et al., 2018).

Bleeding complications: (i) major bleeding, intracranial bleeding, or clinically overt bleeding associated with a decrease in hemoglobin .50 g/L; (ii) minor bleeding, clinically visible with a decrease in hemoglobin 50 g/L according to the modified criteria of thrombolysis in myocardial infarction (TIMI), Small access site hematomas not requiring treatment was also registered (Widimsky. 2008).

Hematoma: Entry-site complications (hematoma 5 cm pseudoaneurysm or arteriovenous fistula (Di Sciascio et al 2010).

Length of stay (LOS): A term defined by the NHS as the length of an inpatient episode of care, calculated from the day of admission to the day of discharge, and based on

the number of nights spent in the hospital. Patients admitted and discharged on the same day have a length of stay of less than one day (Medical Dictionary. 2012).

1.13 Operational definition

Pretreatment: encompasses a variety of different scenarios, in which a drug is given in the ambulance, at the referral hospital, in the medical emergency department, in the cardiac intensive care unit, or even in the cath-laboratory after coronary angiography and before PCI.

Transient ischemic attack: Sudden numbness, tingling, weakness, or loss of movement in your face, arm, or leg, especially on only one side of your body, symptoms of a TIA don't last very long. Most of the time, they go away in 10 to 20 minutes.

Hematoma: as medical doctor assessment post coronary angiography, at the vascular site where is ecchymosed or bruising over 5cm around the puncture.

Length of stay: start at a day of post coronary angiography until the day of surgical operation.

Chapter two

Literature review

2.1 Introduction

This chapter provides a synthesis of recent research found concerning low-risk ACS clinical manifestations. Concepts that are critical to the study of this phenomenon include demographic data, clinical presentation, coronary angiography strategies, and finally endpoint. Each concept is individually discussed.

The collection of literature was conducted utilizing a computerized search of databases. Databases included Pub Med were used for relevant articles and journals. Studies reviewed were published from 2006 to 2021. Keywords used during the search included chest pain, emergency nursing, patient outcomes, ACS, pathophysiology, coronary angiography, bleeding complication, antithrombotic therapy, and Clopidogrel pretreatment. Studies are categorized by clinical presentation, coronary therapy strategies, and endpoint.

2.2 Clinical presentation and patient characteristics

A study conducted by Guedeney & Collet (2020), the goal of this study was to outline the most important new features and innovations and the reasoning behind these suggestions. That talks about a large amount of research that has gone into the therapy of acute coronary syndrome (ACS), resulting in significant improvements in outcomes over the last 50 years. The most recent break through and updates from large randomized controlled trials (RCT) on the diagnosis and management of this disease have been

incorporated into the 2020 European Society of Cardiology (ESC) Guidelines for the management of patients presenting without persistent ST-segment elevation myocardial infarction. As a result, we discuss the growing body of evidence against P2Y12 receptor inhibitors pretreatment before to coronary angiography, the preference for prasugrel as the leading P2Y12 inhibitor in the setting of ACS, and the numerous antithrombotic regimens based on various durations of dual or triple antithrombotic therapy, depending on the patient's ischemic and bleeding risk profiles. So the researcher concluded that following the recent results from major RCTs, the diagnosis and therapy of ACS are rapidly developing topics. Antithrombotic therapy in ACS has changed significantly, with prasugrel becoming the recommended P2Y12 inhibitor, and pretreatment with any P2Y12 inhibitors now being contraindicated in patients scheduled for fast coronary angiography. Following the acute event, antithrombotic therapy can be tailored to each patient's ischemic and bleeding risk profiles, with a variety of regimens based on longer or shorter triple or dual antithrombotic therapy.

A study conducted by Holmberg et al (2018) decrease the morbidity burden of cardiovascular disease and to avoid the development of potentially preventable complications, early assessment and treatment of acute coronary syndrome (ACS) are important. This study aimed to investigate if there was a link between the patients' assessed degree of chest pain when they were initially observed by the ambulance crew in suspected ACS and the outcome before and after they arrived in the hospital. The data were gathered prospectively as well as retrospectively. The researchers looked for chest pain that raised suspicion of ACS and pain severity of ≥4 on the visual analog scale. The result of the study in all, 1603 patients were included in the research. Increased chest pain intensity

was linked to 1) more heart-related complications prior to admission to the hospital; 2) a higher proportion of heart failure, anxiety, and chest pain after admission to the hospital; 3) a higher proportion of acute myocardial infarction; and 4) a longer stay in the hospital. However, neither 30 days nor three years later, there was no significant relationship with death. Adjusting for potential confounders such as age, smoking history, and heart failure yielded comparable results. So the likelihood of problems prior to hospital admission, heart failure, anxiety, and chest pain after hospital admission, the ultimate diagnosis, and the number of days in the hospital were all linked to the estimated degree of chest pain reported by patients on admission by the ambulance crew.

A study conducted by King-Shier (2019), that examined potential ethnic variations in ACS symptoms and clinical care outcomes in white, South Asian, and Chinese patients because of Successful treatment of acute coronary syndrome (ACS) relies on its rapid recognition. It is unclear whether the accepted presentation of chest pain applies to different ethnic groups. The authors use a Cross-sectional survey to conduct the study. Participants were hospitalized at 1 of 12 Canadian centers across four provinces.1334 patients with ACS (630 white; 488 South Asian; 216 Chinese). ACS presentation symptoms (classic/typical midsternal pain/discomfort with or without radiation to the left neck, shoulder or, arm) were assessed by self-report. Clinical care outcomes (time to emergency room [ER] presentation, cardiac catheterization; receipt of cardiac catheterization, percutaneous coronary intervention [PCI] or coronary artery bypass grafting [CABG]) were obtained by health record audit. The result of the study is the mean age of the sample was 62 years and 30% had ST-elevation myocardial infarction (STEMI). The most common presenting symptom was midsternal pain/ discomfort of any intensity

regardless of ethnic status. Yet, a substantial proportion of patients reported atypical symptoms (33% white, 19% South Asian, 20% Chinese; p<0.006). After adjustment for age, sex, education, current smoking, the extent of coronary artery disease, presence of diabetes or chronic kidney disease, and STEMI vs. NSTEMI/unstable angina, South Asians were more likely to present with at least moderate intensity midsternal pain/ discomfort (adjusted OR [AOR] 1.44; 95% CI 1.05 to 1.98), whereas Chinese were less likely to present with radiating symptoms (AOR 0.53; 95% CI 0.38 to 0.74) compared with whites. South Asians with atypical pain (relative to those with midsternal pain/discomfort) took significantly longer to present to the ER (p=0.037) and were less likely to receive PCI (p=0.008) or CABG (p=0.041). So Atypical presentations were associated with greater delays in arrival to the emergency department and reduced invasive cardiovascular care in South Asians.

A study conducted by Comeau et al (2006), the goal of this study was to look at the symptoms of people who went to the emergency room and were then examined in a Chest Pain Program. All patients who arrive in the ED with symptoms indicative of ACS are evaluated by an emergency department physician, who assigns the patient to one of three risk levels: 1) individuals with a high risk of developing ST-elevation or dynamic ST-depression, early positive cardiac markers, hemodynamic instability, and/or a compelling clinical diagnosis; patients are treated immediately and admitted to the hospital; 2) intermediate-risk, in which there are no high-risk characteristics but no other explanation for symptoms. Patients are sent home from the ED if another reason for the presentation is identified, such as musculoskeletal discomfort. The authors use prospective cohort design was used to examine the differences between patients with typical and atypical

presentations of UA/NSTEMI. A convenience sample was obtained from patients presenting to the ED from September to November 2002. Although patients with typical symptoms were more likely to develop UA/NSTEMI, individuals with unusual symptoms did not rule out the diagnosis. The majority (n = 23, or 74.2%) of the 31 patients with UA/NSTEMI exhibited unusual symptoms. Male gender, symptom location, and history of ischemic heart disease were significantly associated with UA/NSTEMI, of those with a final diagnosis of UA/NSTEMI. There was no difference in symptom presentation based on age or gender.

2.3 Coronary angiography and vascular access

A study conducted by Capodanno et al (2015) in Italy, uses a review of the literature to conduct the study. The objective of this study is to summarize the current data on pretreatment with oral and intravenous antiplatelet medications on top of aspirin therapy in patients with a variety of CAD symptoms who are having invasive treatment. Pretreatment in NSTE-ACS is intended to address the vulnerable window where the coronary anatomy is unclear and revascularization has not yet been attempted. Pretreatment attempts to provide faster antiplatelet effects in STEMI patients, preventing thrombotic problems during and shortly after the main PCI. Pretreatment is designed as part of the new definition of pharmacoinvasive approach in STEMI patients receiving thrombolysis (ie, PCI represents an invasive back-up implying transportation to a PCI hospital for either immediate rescue PCI in case of failed fibrinolysis or non-urgent coronary angiography to determine the need for additional revascularization of the culprit lesion), whereas the phrase facilitated PCI has been dropped (i.e., the choice to do PCI is made before the extra pharmacological reperfusion therapy is offered). So the study concludes of the study is that

overall, the available evidence does not support antiplatelet therapy in patients with CAD who are invasively treated in today's world. Indeed, the time to coronary angiography is quick nowadays, and the probability of an ischemia problem prior to angiography is minimal. In patients who require CABG but do not have documented CAD, pretreatment has the potential to expose them to strong antiplatelet drugs unnecessarily, as well as induce unnecessary bleeding problems. Furthermore, with newer antiplatelet medications, pretreatment may no longer be essential as part of a normal approach to achieve rapid antiplatelet action. Nonetheless, clinical trial findings do not necessarily reflect real-world clinical settings, with local practice norms influencing whether or the antiplatelet medication is considered clinically beneficial. Indeed, the wide range of antiplatelet treatments currently available and in development will allow physicians to make informed decisions about which methods to use to reduce ischemia and bleeding problems.

A study was conducted by Neumann et al (2020), in Germany, which use the Federal Bureau of Statistics in Germany provided data on the international statistical categorization of illnesses and procedure codes. This comprised all ACS cases reported in Germany between 2005 and 2015. The diagnoses of overall ACS, ST-elevation myocardial infarction (MI), non-ST-elevation MI, and unstable angina pectoris were all studied separately. The endpoint in-hospital mortality was examined after procedures such as coronary angiography and percutaneous coronary intervention. This study aims to look into changes in the incidence, prognosis, and treatment of individuals the acute coronary syndrome (ACS) in Germany during the last decade. A total of 3797,546 cases of ACS were reported between 2005 and 2015. The average age was 69, and 36% of the participants were female. In-hospital mortality was 6.3%, with 62% of patients having

coronary angiography and 42% having percutaneous coronary intervention. Patients with ST-elevation MI (12.0 %) had the greatest in-hospital mortality, whereas patients with unstable angina pectoris had the lowest (0.6 %). The rates of ACS, ST-elevation MI, and unstable angina pectoris reduced between 2005 and 2015, but the rate of non-ST-elevation MI rose. The number of coronary angiographies and percutaneous coronary procedures done rise from (52% to 70%), and (34% to 50%) respectively. In-hospital mortality dropped from 64.9 instances per 1000 person-years to 54.8 cases after the incidence rate was corrected. So In a large dataset including more than 3.7 million cases, we report an increase in coronary procedures and a reduction of ACS incidence and related mortality in the past decade in Germany.

A study conducted by Bajraktari et al (2021), a Meta-Analysis of Randomized Controlled Trials. The advantages of radial access compared to femoral access in patients undergoing diagnostic coronary angiography (CA) and percutaneous coronary interventions (PCI) are still controversial. This study aims to compare the short-term evidence-based clinical outcome of the two approaches. Databases were searched for randomized controlled trials (RCTs) comparing radial versus femoral access for CA and PCI. We found 34 RCTs with 29,352 patients who had CA and/or PCI and compared 14,819 individuals randomized for radial access to 14,533 patients who had femoral access procedures. All trials included a 30-day follow-up period for clinical outcomes. Meta-analysis was used to pool data using a fixed-effect or random-effect model, as needed. For effectiveness and safety outcomes, risk ratios (RRs) were employed. The result of this study when compared to femoral access, radial access was associated with a lower risk of all-cause mortality (RR: 0.74; 95 % Ci: 0.61 to 0.88; p = 0.001), major bleeding (RR: 0.53;

% CI:0.43 to 0.65; p = 0.00001), major adverse cardiovascular events (MACE) (RR: 0.82; % CI: 0.74 to 0.91; p = 0.0002), and major vascular complications (RR: 0.37; 95% CI: 0.29 to 0.48; p < 0.00001). These findings were similar regardless of whether the patient had ACS or STEMI. When compared to femoral access, radial access in patients having CA with or without PCI is associated with reduced mortality, MACE, severe bleeding, and vascular complications, regardless of clinical presentation, ACS or STEMI.

2.4 Endpoint (LOS & complication, TIA)

A study conducted by Widimsky et al (2008), the goal of this study was to examine the effects of two different clopidogrel regimens on patients who had elective coronary angiography (CAG) plus ad hoc percutaneous coronary intervention (PCI). That use Open-trial randomized 1028 patients with stable angina were randomly assigned to one of two groups: group A (‘non-selective'—clopidogrel 600 mg.6 hours before CAG; n 513) or group B (‘selective'— clopidogrel 600 mg in the cath lab following CAG, only if PCI is needed; n 515). Death, periprocedural myocardial infarction (MI), stroke, and re-intervention within 7 days were the combined primary endpoints. Troponin elevation and bleeding complications were the secondary endpoints. The primary endpoint was achieved in 0.8 % of patients in group A vs. 1% in group B (P 0.749; 90 % CI for the percentage difference 21.2–0.8). 2.6% of group A had periprocedural troponin elevation (.3 ULN) vs. 3.3% of group B (P 0.475; 90% CI 22.5–1.0). 3.5% of group A patients had bleeding complications, compared to 1.4% of group B patients (P 0.025). After controlling for covariates and other factors that could impact bleeding risk, patients in group A were shown to have a higher risk of bleeding complications than those in group B (OR 3.03; 95% CI 1.14–8.10; P . 0.027). So before elective CAG, a high (600 mg) loading dosage of

clopidogrel increased the incidence of mild bleeding problems, with no significant effect on periprocedural infarction. In chronic stable angina patients, clopidogrel can be given safely in the catheterization laboratory between CAG and PCI.

A study conducted by Tarantini et al (2020), P2Y12 inhibitors are crucial in the treatment of patients with NSTE-ACS, although the best time to provide them is unknown. We conducted a randomized clinical study to assess the effects of oral P2Y12 inhibitors administered downstream and upstream. After 1449 participants were enrolled, the experiment was declared futile due to a predetermined rule. The primary outcome, a composite of mortality from vascular causes, non-fatal myocardial infarction or non-fatal stroke, and bleedings showed no significant differences between groups. Our findings rule out the possibility of one method being more effective than the other. Object to compare downstream and upstream oral P2Y12 inhibitors administration strategies in ACS patients undergoing invasive management, the authors conducted a multi-center, randomized, adaptive, open-label clinical study. Patients were randomly assigned to either ticagrelor pre-treatment or no pre-treatment before angiography (upstream group) (downstream group). Patients having percutaneous coronary intervention (PCI) in the downstream group were then randomly assigned to receive ticagrelor or prasugrel. The primary hypothesis was that the downstream method outperformed the upstream strategy in terms of effectiveness and safety incidents (net clinical benefit). We randomly assigned 1449 individuals to receive either a downstream or an upstream oral P2Y12 inhibitor. The study was halted due to a predetermined termination rule for futility at intermediate analysis. The rate of death due to vascular causes, non-fatal myocardial infarction, or non-fatal stroke, and Bleeding Academic Research Consortium (BARC) type 3, 4, and 5 bleedings through

day 30 did not differ significantly between the downstream and upstream groups (Absolute Risk Reduction (ARR percent) -0.46 [-2.90; 1.90]). These findings were verified in patients receiving PCI (72% of the population), independent of when the coronary angiography was performed (within or after 24 hours from enrolment). So the use of downstream and upstream oral P2Y12 inhibitors was linked to a low rate of ischemia and bleeding events, with little numerical difference across treatment groups. These findings resulted in the study being halted prematurely, suggesting that one method is unlikely to be more effective than the other.

A study conducted by Al-Hijji et al (2019), aimed to study following diagnostic left heart catheterization, the incidence of severe complications such as in-hospital mortality, myocardial infarction, stroke, pericardial effusion or tamponade, percutaneous coronary intervention due to iatrogenic coronary dissection, or unexpected bypass surgery within 72 hours after diagnostic left heart catheterization (LHC; primary endpoint). Furthermore, all causes of in-hospital death after LHC were adjudicated and reported (secondary endpoint). The researchers using Diagnostic LHC procedures (aortic angiography; coronary, including graft, angiography; and left ventricular angiography) were found using the Mayo Clinic's clinical scheduling system from January 1, 2002, to December 31, 2013, and complications were detected using electronic data. Registration was queried to identify all-cause mortality. All events were reviewed and adjudicated. There were 43786 diagnostic LHC operations performed, with coronary angiograms accounting for 97.3 %. The patients' average age was 64.5 years (13.6), and the majority of them were men (61.5 %). The primary endpoint was seen in 36 operations (0.082%), or 8.2 out of 10,000 LHCs. The risk of severe problems was not increased by combining right-sided operations with LHC. The

most prevalent reasons for in-hospital death following LHC were cardiogenic and septic shock, cardiac arrhythmia, and postsurgical complications. The conclusion of this study is Major complications associated with diagnostic cardiac catheterization procedures are exceedingly uncommon. The majority of fatalities that occurred after diagnostic LHC operations were caused by acute sickness rather than the diagnostic process itself.

A study conducted by Delia et al (2015), that use a retrospective observational study for a patient enrolled as a case of ACS and going to invasive management, in the period between January 2002 and December 2012, 9621 patient were enrolled in the study, In acute coronary syndromes (ACS), pretreatment with antiP2Y12 medicines prior to angiography is linked to a lower risk of thrombotic events. Recent data, however, has cast doubt on the advantages of upstream antiP2Y12, citing an increased risk of bleeding. In a large cohort of invasively managed patients with the acute coronary syndrome, we looked at the prognostic influence of clopidogrel pretreatment. Clopidogrel pretreatment was retrospectively evaluated for safety and effectiveness in hospitals. Patients from the ARIAM Registry were studied. Treatment selection bias was controlled using a propensity score and an inverse probability of treatment weighting analysis. Acute coronary syndrome type was used to stratify the results. Sensitivity analyses were conducted to investigate the overall treatment effect's stability. Clopidogrel was given to 69% of the 9621 patients who were treated invasively before coronary angiography. Pretreatment was linked to a lower-risk of reinfarction (odds ratio 0.53 [95% confidence interval, 0.2 to 0.96]; p=0.027), stent thrombosis (odds ratio 0.15 [95% confidence interval, 0.06-0.38]; p0.000), and mortality (odds ratio 0.67 [95% confidence interval, 0.48 to 0.94]; p=0.020) in patients with ST-elevation myocardial infarction. These advantages were not seen in patients who did not

have a ST elevation (NSTE-ACS). The results were validated by weighting and propensity analysis. There was a relationship between pretreatment duration and hemorrhage. In conclusion, clopidogrel pretreatment decreased the risk of mortality and thrombotic events at the expense of mild bleeding. STEMI patients were the only ones who benefited from these advantages. STEMI patients were the only ones who benefited from these advantages. At this time, the potential benefit of regular upstream pretreatment in patients with NSTE-ACS has to be reconsidered.

Chapter Three

Research Methodology

3.1 Introduction

This chapter presents an overview of the research methodology that used in this study. It includes research design, study sample, setting of the study, duration of the study, source of data, Inclusion and Exclusion criteria, sample size, sample and sampling process, validity, instrument, Ethical consideration, and analysis plan.

3.2 Research Design

The research design is defined as a process plan for how you intend to conduct the research. A prospective, descriptive, comparative, quantitative study design was conducted to describe the low-risk ACS patient endpoint, clinical manifestations of low-risk ACS patients, and characteristics of patients diagnosed as low-risk ACS. Quantitative research is defined as an official, objective, and organized procedure for describing variables, examining their relationships, and testing cause and effect relationships among variables (Burns & Grove 2011).

The descriptive study can provide information about the natural world based on status, behavior, attitude, and relationships (Brink, Van der Walt & Van Rensburg, 2012).

3.3 Setting of the study

The study was conducted in Emergency Department in North West Bank hospital (Specialized Arab Hospital, Nablus Specialized Hospital, and Al-Razi Hospital) which contains an advanced cardiac center.

3.4 Population

A research population is defined as a group of subjects or departments who share specific characteristics and meet the inclusion criteria, and from whom data can be collected (Burns & Grove 2005; Polit& Beck 2014; Rebar &Macnee 2011; Schneider & Fisher 2013).

In this study, the target population was low-risk ACS patients who underwent elective coronary angiography in North West bank hospitals. How met the inclusion criteria.

The accessible populations are those individuals who will present to this hospital during the period between March to July 2021 and are classified as low-risk ACS symptoms.

Two groups of the patient with low-risk ACS underwent elective coronary angiography was selected convenience. **Group A** includes the patients who received the loading dose antiplatelet (300mg aspirin, 300mg clopidogrel) after coronary angiography in case of Percutaneous Coronary Intervention (PCI) in the cath lab, while **group B** includes the patients who received loading dose pretreatment antiplatelet (300mg aspirin, 300mg clopidogrel) in the Emergency Department before the coronary angiography.

3.5 Sample and Sampling

Convenience sampling was used in this study, which is a type of non-probability sampling strategy that is also used in quantitative approaches. The choice of this type of sampling within the study was based on its ease of access to participants; however, the disadvantage of this sampling is that it limits the ability to generalize. Using this method, the researcher selects the necessary sample while keeping in mind the need to include certain criteria and elements within the study.

A convince sample composed of 352 patients in two groups based on inclusion and exclusion criteria.

3.6 Inclusion criteria

- Age ≥ 18 and < 85 years-old.
- Diagnose as low-risk ACS according to ICD-10 guidelines.
- Planned invasive management strategy (defined as a scheduled coronary angiography within 72 hours from hospital admission).

3.7 Exclusion criteria

- Use of chronic oral anticoagulation.
- Any contraindication to ticagrelor or prasugrel and treatment with a loading dose of any P2Y12 inhibitor within the prior 7 days.

3.8 Sample size

Based on alpha 0.05, and power of 0.80, and medium effect size, and the estimated sample size using G power is 250. The total sample size was 352 patients, enrolled in two groups, group A 100 patients, and group B 252 patients.

3.9 Instrumentation

Data abstraction sheet constructed based on literature review, contain four parts. Part one was used to collecting socio-demographic data included age, gender, and BMI. Part two contains health information related to symptoms of low-risk ACS included chief complaint, presenting symptoms, risk factors, medical, surgical, and social history, and other to complete collection of the characteristic of the patient involved in the study. Part three contain the data about coronary angiography finding and information related to it as vascular access. Part four contains the endpoints (LOS, Hematoma and TIA).

3.10 Validity

The data collection instrument was validated for content by two cardiologists who work in each mentioned hospital and 3 experts.

3.11 Ethical considering

Ethical approval was obtained from the Arab American University Ethical committee institutional review board (IRB) before to data collection, and then permission for conducting the study in private hospitals was taken from their administrative department. Upon approval, a prospective patient's follow-up occurs after signature in the

constant form to participate in research. During the prospective follow-up, risks to patients were minimal and patient identification remained anonymous.

To maximize patient anonymity, personal identifiers were not used. All information collected was documented on a researcher-developed tool without the inclusion of names, social security numbers, or other protected health information. All information was kept in a locked cabinet and all information was used just for research purposes.

3.12 Analysis plan

In this study, statistical analysis of the collected data was conducted using the statistical package for the social science (SPSS) version 23. SPSS is a software package that will be used for conducting statistical analysis, manipulating data, and generating tables and graphs by using descriptive and inferential statistics such as frequency tables, relative frequencies, graphically illustrated by using bar charts. Means and standard deviations used to summarize data. Chi square to assess the relationship between two groups regarding patient characteristics, to compare the two group regarding patient history, and to assess the coronary angiography finding and endpoint. T test to comparison of pain level and LOS.

So the Surveys result was entered directly into the database and then data cleaning was conducted. This enabled the identification existence of potentially statistically significant correlations between the relevant variables.

Chapter Four

Result

4.1 Introduction

This thesis aimed to identify the prevalence of clopidogrel loading dose short-term outcomes in low-risk ACS patients, the clinical manifestations of low-risk ACS, and the relationship between group A and group B regarding patients' characteristics (ages, gender, etc.), finally, to identify the prevalence of coronary angiography finding.

4.2 Participants' characteristics of the two groups:

Gender: The results showed, as is clear by looking at the first table and the first figure that the proportion of males is higher than the proportion of females and this difference is present in the two groups and there is no statistically significant difference ($\boldsymbol{X^2}$=2.36 &$\boldsymbol{p}$= 0.12) between two groups due to gender.

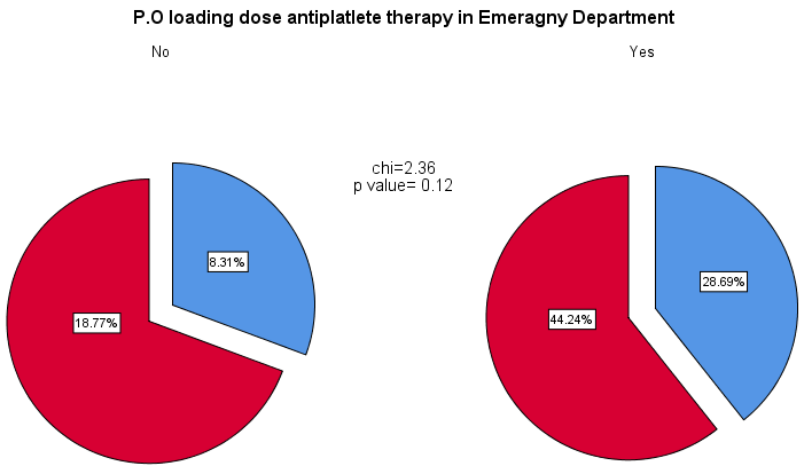

Figure 1: **Gander proportion among the two groups**

Body mass index (BMI): Looking at figure number two, we notice that the BMI of both groups is distributed in a nearly normal manner. Nevertheless, we note that the BMI reflects that the average BMI of group A was 27.4 as well as the average BMI of the group B was 27.5, as well as about 70% of the participants in group A, were set their BMI between 25-30 and the group B was between 24-31. There is no statistically significant difference (t = 0.34 &p=0.73) between the two groups due to BMI.

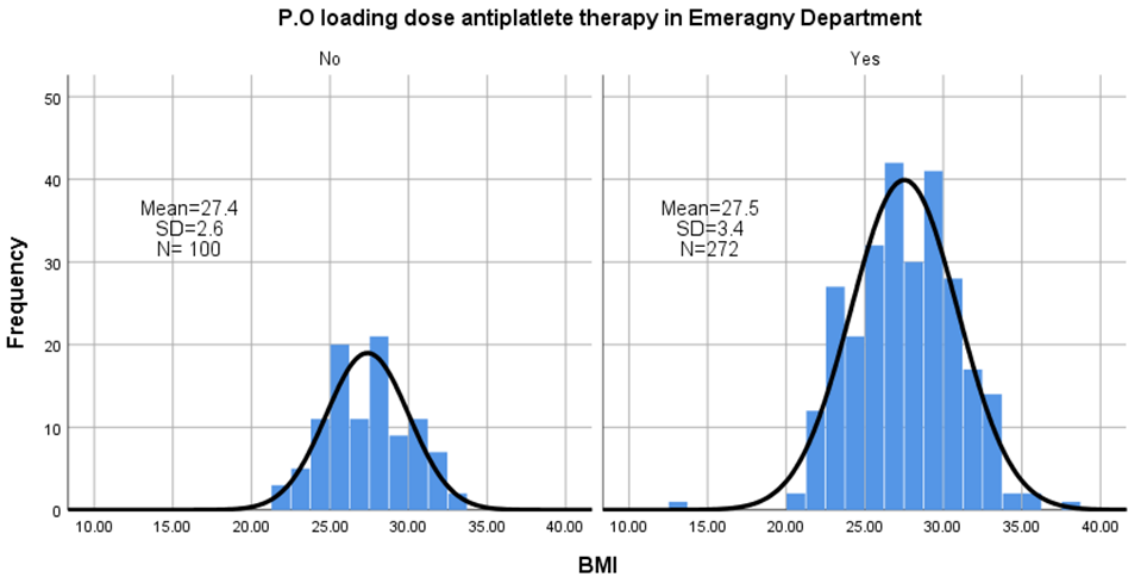

***Figure 2**:* Body mass index of the two groups

Age: The third figure and table 1 show that the age distribution of the participants in both groups is almost normal. The average age of group A was 52.4 years old, and nearly 70% of them were aged between 47-58 years. On the other hand, the group B, the average age was 58.1 years old, and nearly 70% of them were between 48-68 years. There is a statistically significant difference ($t = 5.46$ &$p<0.001$) between the two groups due to age.

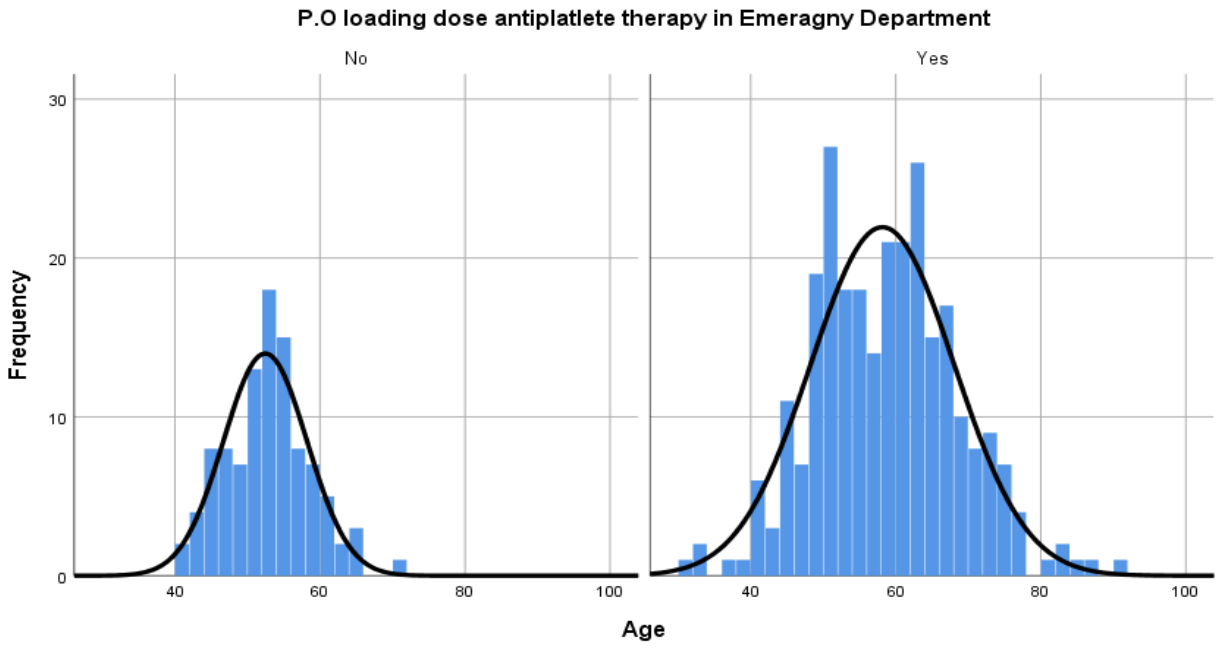

***Figure 3*:** Age distribution among the two groups

Table 1: Cross-tabulation comparison of participants' characteristics of the two groups

		P.O loading dose antiplatelet therapy in ER				
		Group A	**Group B**	**Total**	X^2	**Sig.**
Gender	Female	30 (30.7%)	107 (39.3%)	137 (37.0%)	2.36	0.12
	Male	70 (69.3%)	145 (60.7%)	215 (63.0%)		
		N	**Mean**	**SD**	**t**	**Sig.**
BMI	Group A	100	27.38	2.62	-.341	.733
	Group B	252	27.51	3.39		
Age	Group A	100	52.45	5.75	-5.46	<.001
	Group B	252	58.15	9.88		

ER: Emergency Department

4.3 Pain level, and complaint onset among the two groups:

Pain level: It is clear from the results present in table 2& figure 4that there is a statistically significant difference (**t** = 11.97 &***p***<0.001) between the pain levels between the two groups, as the average pain level was higher among the participants in the group B compared with the pain level among the participants in group A (3.28 vs. 1.76 respectively).

The results also show that about 70% of the group A participants had a pain level between 1-2.5 out of 10, while nearly 70% of the participants in the group B suffered from a pain level between 2-4.5 out of 10.

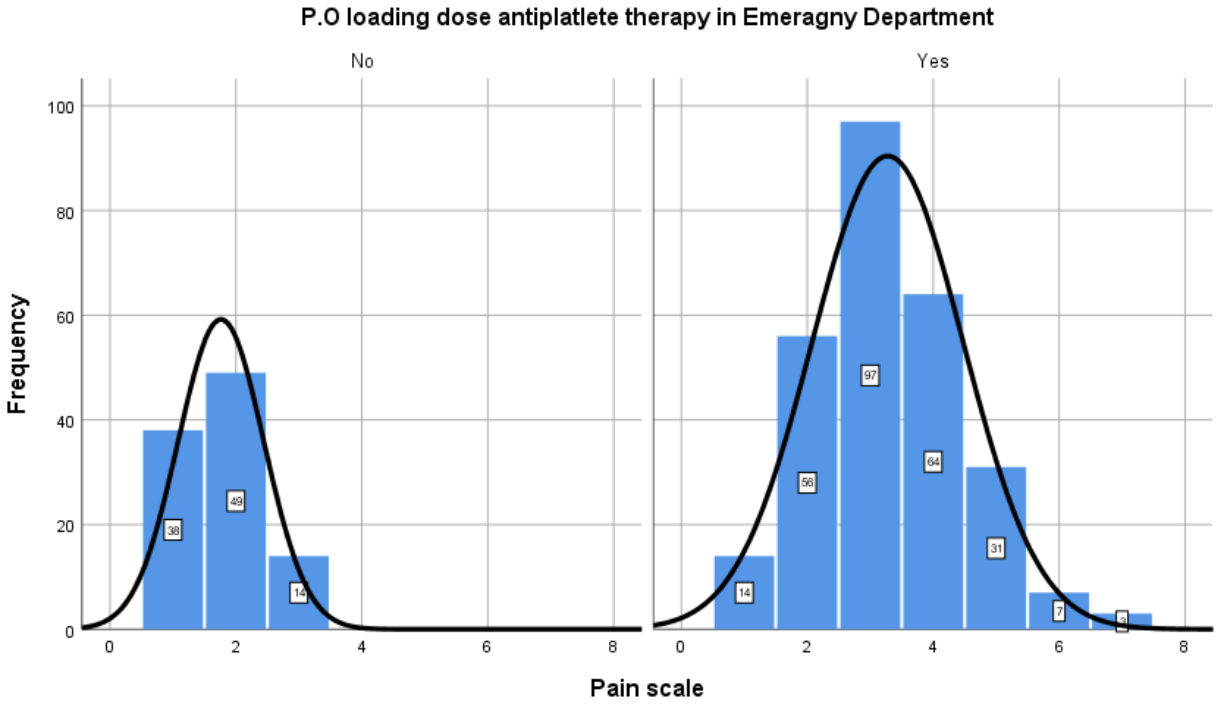

Figure 4: pain level among the two groups

Complaint onset: It is clear from the results present in table 2 & figure 5 that there is no statistically significant difference (**t** = 0.81 &***p***= 0.41) between the complaint onset between the two groups. Furthermore, the average complaint onset was lower among the participants in the group B compared with the complaint onset among the participants in group A (7.5 vs. 8.1 respectively). The results also show that about 70% of group A participants had a complaint onset between 5-11, while nearly 70% of the participants in group B complaint onset between 1-14.

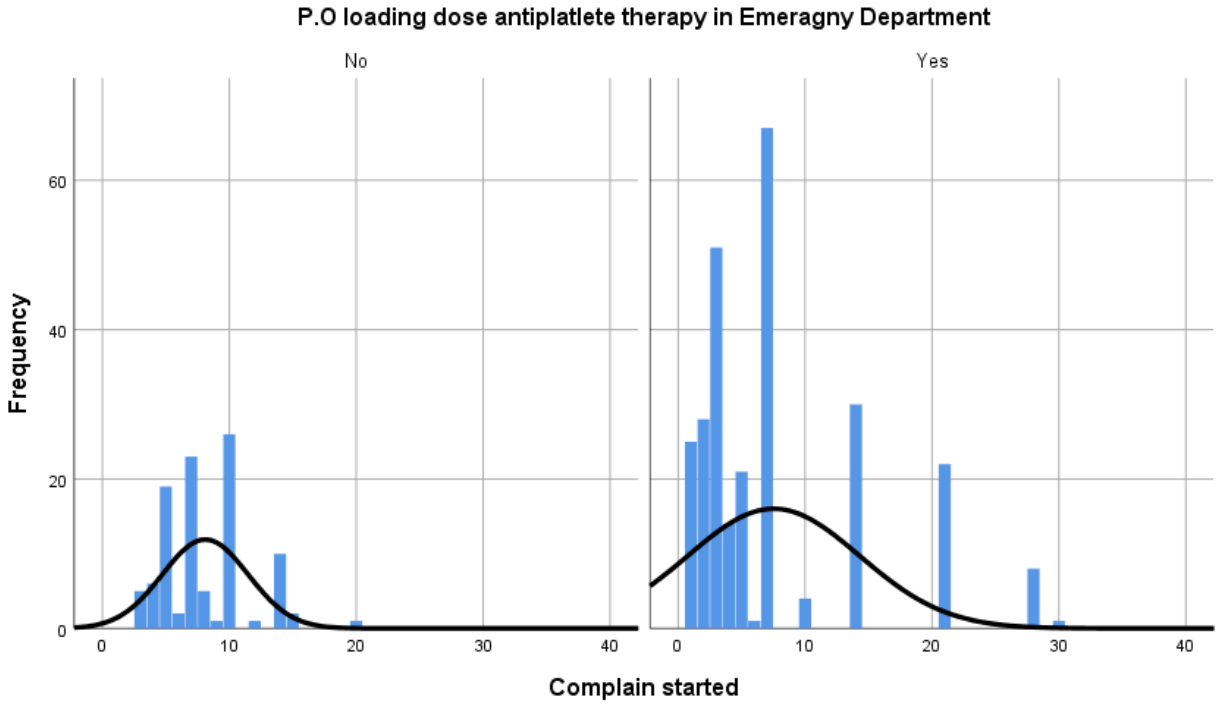

Figure 5: Pain onset among the two groups

Table 2: Comparison of pain level and complaint onset among the two groups

	P.O loading dose antiplatelet therapy in ED					
	Group	N	Mean	SD	t	Sig.
Pain scale	Group A	100	1.76	.68	-11.972	<.001
	Group B	252	3.28	1.20		
Complain started	Group A	100	8.10	3.38	.819	.414
	Group B	252	7.52	6.77		

ED: Emergency Department

4.4 Social and family history

When comparing the two groups in terms of social and family history, it was found that there was no statistically significant ($\boldsymbol{X^2}$=5.5&Sig. = 0.13) difference between the two groups for the social history, but there is a statistically significant difference ($\boldsymbol{X^2}$=6.08 &Sig. = 0.014) between the two groups due to family history. Also, the results showed that group A had a higher percentage of participants with a family history of heart disease compared with group B (50.5% vs. 36.4%).

Table 3: cross-tabulation to compare the two groups regarding social and family history

		P.O loading dose antiplatelet therapy in ED				
		No (Group A)	Yes (Group B)	Total	$\boldsymbol{X^2}$	**Sig.**
Social	Illicit Drugs	0(0.0%)	1(0.4%)	1(0.3%)	5.5	0.13

History	Not addressed	40(40.6%)	130(51.5%)	171(48.5%)		
	Smoker	60(59.4%)	121 (47.1%)	181(51.2%)		
Family History	CAD	50(50%)	89(36.4%)	139(40.2%)	6.08	0.014
	Not addressed	50(50%)	163(63.6%)	213(59.8%)		

4.5 Medical and surgical history

When comparing the two groups in terms of medical and surgical history, it was found that there was a statistically significant ($\boldsymbol{X^2}$=12.6 &Sig. = 0.049) difference between the two groups related to medical history, but there is no statistically significant difference ($\boldsymbol{X^2}$=10.17 &Sig. = 0.17) between the two groups due to surgical history. Also, the results showed that most of the participants in both groups (A& B groups) had DM, HTN, or both (70 % & 65% respectively).

Table 4: cross-tabulation to compare the two groups regarding past medical history

		P.O loading dose antiplatelet therapy in ED				
		Group A	Group B	Total	$\boldsymbol{X^2}$	**Sig.**
PMH/co-morbidities	DM	20(19.8%)	29(10.7%)	49(13.1%)	12.6	0.049
	Heart Disease	12(11.9%)	34(12.5%)	46(12.3%)		
	HLP	2(2.0%)	5(1.8%)	7(1.9%)		
	HLP; stroke	0(0.0%)	2 (0.7%)	2(0.5%)		
	HTN	26(25.7%)	67(24.6%)	93(24.9%)		

	not addressed	20(20.8%)	30(14.7%)	50(16.4%)		
	DM & HTN	20(19.8%)	85(34.9%)	105(30.8%)		
Surgeries/Procedures	Angioplasty	7(6.9%)	35(12.9%)	42(11.3%)	10.17	0.17
	Cardiac bypass	0(0.0%)	8(2.9%)	8(2.1%)		
	Cardiac Cath	13(12.9%)	37(13.6%)	50(13.4%)		
	Cardiac Cath; Angioplasty	0(0.0%)	3(1.1%)	3(0.8%)		
	Cardiac Cath;not addressed	0(0.0%)	1(0.4%)	1(0.3%)		
	Cardiac Cath;Pacemaker	0(0.0%)	2(0.7%)	2(0.5%)		
	Not addressed	77(77.2%)	163(67.3%)	240(70.0%)		
	Pacemaker	3(3.0%)	3(1.1%)	6(1.6%)		

4.6 Chief complains characteristics:

When comparing the two groups in terms of chief complaint characteristics, it was found that there was no statistically significant (X2=0.28&Sig. = 0.36) difference between the two groups for the chief complaint. The result showed that the chest pain is higher than SOB in both groups A and group B (92% vs. 8%). When comparing the two groups in terms of time course there is a statistically significant difference (X2= 52.9& Sig = 0.001) between group A and group B.

The result showed most patients better course rather than intermittent episodes and resolved on arrival to ER (56.9%, 23.6%, and 19.5%). There is a statistically significant (X2= 17.3 & Sig= 0.001) difference between the two groups in terms of Quality of pain. Most patients have pressure pain 62.7%, tightness 34.6%, and sharp 2.7%.

Most patients express that the pain not radiated 90.3%, other radiated to LT shoulder 9.2% and epigastric pain 0.5%, there are no statistically significant (X2= 1.24 &Sig= 0.53) differences between two groups in terms of pain radiation.

When comparing the two groups in terms of associated symptoms there is a statistically significant (X2= 2.3 & Sig= 0.001) difference between the two groups, where the prevalence of SOB is higher than nausea (77.7 vs. 3.8) the prevalence of patients without associated symptoms is 18.5%. The most patient complains of worsen pain by exertion 74.5%, deep breath 20.9, position change 3.8%, not addressed 0.8%, there are no statistically significant (X2= 5.38 &Sig= 0.14) differences between group A and group B in term of worsened by.

The most of patient says that the pain relieved by rest 81.2% and there is a statistically significant (X2= 28.5 & Sig= 0.001) differences between group A and group B.

For onset pain during there is no statistically significant (X2= 6.32& Sig= 0.097) differences between the two group. Also, the result shows the most patient pain onset during light activity 54.2%, where mod-heavy exertion is 37.8% and rest, sleep 4% for each of them. Table 5 shows in detail the chief complaint characteristic for group A and group B.

Table 5: Chief complaint characteristics among the two groups

		P.O loading dose antiplatelet therapy in ER				
		Group A	**Group B**	**Total**	X^2	**Sig.**
Chief complain	Chest pain	95(94.1%)	228(91.2%)	323(92.0%)	0.82	0.36
	SOB	1(5.9%)	24(8.8%)	30(8.0%)		
Time course	Better	86(86.1%)	104(45.6%)	190(56.6%)	52.9	<0.001
	Intermittent episodes	13(12.9%)	75(27.6%)	88(23.6%)		
	Resolved on arrival to ED	1(1.0%)	73(26.8%)	74(19.5%)		
Quality	Not addressed	0(0.0%)	1(0.4%)	1(0.3%)	17.3	0.001
	Pressure	80(79.2%)	134(56.6%)	214(62.7%)		
	Sharp	0(0.0%)	9(3.3%)	9(2.7%)		
	Tightness	20(20.8%)	108(39.7%)	128(34.6%)		
Radiated to	Epigastric	0(0.0%)	2(0.7%)	2(0.5%)	1.24	0.53
	Lt shoulder	10(10%)	23(8.5%)	34(9.2%)		
	None	90(90%)	227(90.8%)	317(90.3%)		
Associated Sx	Nausea	11(10.9%)	3(1.1%)	14(3.8%)	27.3	<0.001
	SOB	82(81.2%)	208(76.5%)	290(77.7%)		
Worsened by	Deep breath/turning	18(17.8%)	60(22.1%)	78(20.9%)	5.38	0.14

	Exertion	81(81.2%)	176(72.1%)	257(74.5%)		
	Position change	1(1.0%)	13(4.8%)	14(3.8%)		
	Not addressed	0(0.0%)	3(1.1%)	3(0.8%)		
Relieved by	Antacids	0(0.0%)	1(0.4%)	1(0.3%)	28.5	<0.001
	not addressed	0(0.0%)	2(0.7%)	2(0.5%)		
	Nothing	0(0.0%)	5(1.8%)	5(1.3%)		
	NTG; rest	0(0.0%)	2(0.7%)	2(0.5%)		
	Rest	85(84.2%)	198(80.1%)	283(81.2%)		
	Sitting up	15(15.8%)	12(4.4%)	27(7.5%)		
	Sitting up; rest	0(0.0%)	32(11.8%)	32(8.6%)		
Onset during	Light activity	65(64.4%)	117(50.4%)	182(54.2%)	6.32	0.097
	Mod-heavy exertion	30(30.7%)	110(40.4%)	140(37.8%)		
	Rest	3(3.0%)	12(4.4%)	15(4.0%)		
	Sleep	2(2.0%)	13(4.8%)	15 (4.0%)		

4.7 Site of catheter insertion among the two groups

There was no statistically significant difference ($\boldsymbol{X^2}$= 1.5& Sig. = 0.22)between the two groups due to the site of insertion of the catheter, as the majority of the study participants of group A and group B catheterized through radial compared with the formal method (85.1% & 14.9% vs. 89.7% & 10.3%).

Table 6: Site of catheter insertion among the two groups

		P.O loading dose antiplatelet therapy in ED				
		Group A	Group B	Total	X^2	**Sig**.
Site of catheter insertion	Femoral	15(14.9%)	28(10.3%)	43(11.5%)	1.5	0.22
	Radial	85(85.1%)	224(89.7%)	329(88.5%)		

4.8 The prevalence of Coronary angiography findings

There were statistically significant differences (X^2= 6.9&Sig. = 0.032) between the two groups (Group A vs. Group B) in terms of the final results (prevalence of Coronary angiography findings).

The majority of the study participants ended with medical interventions (65.3% vs. 56.8% respectively). While the percentage of participants who did open-heart surgery (CABG) or Coronary interventions from the participants of group A was higher than their percentage in group B (10.9% & 23.8% vs. 8.1% & 38.2% respectively).

Table 7: Coronary angiography findings among the two groups

		P.O loading dose antiplatelet therapy in ED				
	Interventional	**Group A**	**Group B**	**Total**	X^2	**Sig.**
Coronary angiography findings	CABG	11(10.9%)	22(8.1%)	33(8.8%)	6.9	0.032
	Coronary	24(23.8%)	104(38.2%)	128(34.4%)		
	Medical	65(65.3%)	126(53.7%)	191(56.8%)		

4.9 Complications findings among the two groups

The occurrence of hematoma was higher among participants in group B compared with the occurrence of hematoma among participants in group A (8.1% vs. 4.0% respectively).

On the other hand, the percentage of participants who had no complications among group A was higher than among the participants in group B (73.3% vs. 55.9% respectively).

There was a statistically significant difference (X^2= 9.83 & Sig. = 0.020) due to the rate of complications between the two groups

Table 8: Complications findings among the two groups

		P.O loading dose antiplatelet therapy in ED				
		Group A	**Group B**	**Total**	X^2	**Sig.**
Complication	Hematoma	4(4.0%)	22(8.1%)	26(7.0%)	9.83	0.020
	No complication	74(73.3%)	132(55.9%)	206(60.6%)		
	TIA	0(0.0%)	2(0.7%)	2(0.5%)		
	NA	22(22.7%)	96(35.3%)	118(31.9%)		

4.10 Length of stay among those who underwent CABG

As for the participants who ended up undergoing an open-heart surgery (CABG), there was a statistically significant difference ($t= 9.39$, $p<0.001$) between the two groups in terms of the period of stay in the hospital after the coronary angiography.

The average length of stay hospitalization among the participants in the group B was higher than the average length of stay hospitalization among group A participants (6.59 vs. 4.18 respectively).

Table 9: Length of stay among those who underwent CABG two groups

			Length of stay			
	Groups	**N**	**Mean**	**SD**	**t**	**Sig.**
(CABG)	Group A	11	4.18	.603	-9.39	<.001
	Group B	22	6.59	.734		

Chapter five

Discussion

5.1 Introduction

Within this chapter, the study findings are discussed in terms of the study aim and objectives along with the study variables, study limitations, future recommendations, and the conclusion of the research study.

5.2 Demographic data for patient

According to the current study, the proportion of males is higher than the proportion of females (62.9%, 37.1%) in both groups, it's similar to a study conducted by Neumann et al. (2020), that showed a majority of males more than females (63.38%, 36.42%) respectively, and it's consistent with Delia et al. (2015) study that showed the proportion of male in group A is 73% and female is 27% and the proportions of males in group B is 72% and females is 28%.

These low proportions of females can be explained by endogenous estrogens, such as estradiol, that may protect younger women by inhibiting age-related vascular remodelings, such as vascular smooth muscle cell proliferation and endothelial dysfunction. Estradiol has also been shown to decrease cholesterol levels and enhance the vascular tone in other investigations (Duan et al., 2015).

The average BMI for the patient in this study, in group A is 27.4 and in group B is 27.5, which is consistent with the study conducted by Al-Hijji et al. (2019) that showed the

average BMI for a patient is 29.7, which both consider overweight. Also, another study published by Delia (2015) showed the percentage of obesity in group A is 8% and in group B is 20%, this result is in agreement with the current study.

High BMI is considered an independent risk factor according to Dooley et al. (2014), three these risk factors namely, hypertension, hypercholesterolemia, and diabetes mellitus are all conditions that are strongly associated with obesity, which lead to being a risk of ACS, as shown in the result chapter of this study, the prevalence of this factors is more than other factors in the current study.

According to a study by Neumann et al. (2020) showed the average age is 67.6 years old, the other study conducted by Delia et al. (2015) showed the average age in group A is 64 years old, in group B is 62 years old, and This data are consisting with the current study, where the average age of the participants in group A is 52.45 years old and in group B is 58.15 years old.

This elderly average age patients can be explained by the increasing population in older age will lead to greater numbers of them presenting with acute coronary syndromes (ACS). Another factor that can explain the average older age, a change in metabolic function, renal clearance is reduced, and chronic renal failure is worsened, physiological, physical, and mental deterioration, co-morbidity, and medication use will raise the burden of ACS in the elderly are growing (Simms et al., 2012).

5.3 Low-risk ACS clinical manifestation and presentations

According to the current study, most patients complained of chest pain (92%), while other patients complained of SOB (8%), which is consistent with a study conducted

by Coven et al. (2020) that showed the proportion of chest pain is higher than other complaints. Furthermore, Dezman et al. (2017) showed that chest pain as chief complaints is higher than SOB (84.6% vs.15.4%). Another study conducted by Mirza et al. (2018) showed the SOB complains higher than chest pain (85.6% vs. 14.4%), which is not consistent with the current study.

Chest pain is not experienced by all patients. Some patient may have only neck, jaw, ear, arm, or epigastric pain may be present, while other patients, particularly those who are old or have diabetes, have little pain and only have intermittent shortness of breath, extreme weakness, light-headedness, diaphoresis, nausea, and vomiting (Coven et al., 2020).

About the time course of pain, a study conducted by Mirza et al. (2018) showed that the percentage of acceptable pain is 66%, and it's nearly proximal with the present study 56.6%. The intermittent episode of chest pain, according to Mirza et al. (2018) is 23%, while in the current study is 23.6%, which is consistent with this study. The patient who felt the pain resolved on arrival to ER were 11% according to Mirza et al. (2018) and their agreement with this study (19.8%).

The quality of pain as showed in Devon et al. (2020) study, most of the patients (64%) expressed that the pain characterizes as pressure, while 18% of patients said the quality of pain characterize as tightness and sharpness, which is consistent with the current study.

According to the current study, most of the patients (90.3%) didn't have radiated pain, while others 9.1% have radiated to LT shoulder and epigastric 0.5%, and this result is

similar to Dezman et al. (2017), which showed the percentage of didn't radiate pain is 84.5%, but the percentage of radiated pain to LT shoulder and epigastria is nearly equal (7.4%, 8.1%) prospectively. Another study conducted by King-Shier, et al. (2019), showed the proportion of radiation pain to LT shoulder is more than epigastria or non-radiation (49%, 19.3%, and 31.7%) respectively, which not consistent with the current study.

The current study, showed most patients (77.7%) have SOB as associated symptoms of low-risk ACS, others complain of nausea (3.8%), and 18.5% had no associated symptoms, and this result is consistent with Pour et al. (2015), that showed the proportion of SOB is higher than nauseated symptoms (54%, 16.1%) prospectively and other 29.9% patients without symptoms, while other published conducted by Dezman et al. (2017), showed that the associated symptoms (such as diaphoresis, vomiting, syncope) were more than SOB and nausea.

Most of the patient (61%) complains of pain with exertion as King-Shier, et al. (2019), another patient (14%) complain of pain with a deep breath, change position (9%), and non complain (16%), which consistent with the current study as shown in the result chapter.

The Devon et al. (2020) study showed the proportion of patients that his pain relieved by rest (73%) is higher than other issues such as Nitro (4%), change position (10%), nothing relieves pain (13%), all of them with P-value of 0.047, and this agreement with the current study.

In term of pain level and score, the study conducted by Holmberg et al. (2018), showed the pain score for low-risk ACS is range from 4 -5.99, which within the same range of a current study around 5.

Regarding the onset of pain, in the current study, the time from symptoms onset to time that the patient arrival to ER was around 7.81 days, it's less than (10 days) the study conducted by King-Shier et al.(2018), and more than (2 days) study conducted by Deli et al. (2015).

5.4 Low-risk ACS patient history (medical, surgical, social, family)

5.4.1 Medical history

In terms of medical history, as showed in the result chapter, there is a statistically significant difference between the two groups, which is consistent with the study conducted by Neumann et al. (2020) that showed the percentage of HTN is 60.2%, HLP is 46.45%, DM is 24.88%, heart disease is 13.79%, and stroke is 0.29%, all of these findings with a P-value of 0.001. in another study conducted by Delia et al. (2015) that take two groups to study clopidogrel pretreatment, the result showed regarding the DM, HTN, and stroke in two groups is not consistent with our study, while HLP and heart disease are consistent with our study.

This result can be explained according to Knott et al. (2020) which showed the modifiable risk factors for ACS is diabetes mellitus (and impaired glucose tolerance), hypertension, dyslipidemia.

5.4.2 Surgical history

Regarding surgical history for patients participants in both groups (group A & group B), the result showed there is no statistically significant difference, but another observational study conducted by Delia et al. (2015) has reported similar results regarding surgical history, the percentage of the previous PCI in group A is 15% and in group B is 17%. The percentage of old CABG in group A is 3.2% and in group B is 4%. In contrast with Jaskiewicz & Zielinska. (2019) study, which showed there are no statistically significant differences in surgical history and this result is consistent with the present study.

5.4.3 Social history

A study conducted by Di Sciascio et al. (2010) showed the percentage of smokers in Group A is higher than in Group B, and this is consistent with the current study and similar to another study by Delia et al. (2015).

5.4.4 Family history

The current study showed the percentage of family history of CAD is 40.2% and free family history of CAD is 59.8%, which is consistent with the study conducted by Mirza et al.(2018) that showed the prevalence of positive family history is 24% as a risk factor for ACS. another study by Neumann et al. (2020) showed the percentage of positive family history is 41% while 59% is free of family history, and it's similar to a study conducted by Holmberg et al. (2018) showed the prevalence of family history related to CAD is 15.9%. There a similar percentage of family history in all studies mentioned above.

5.5 Coronary angiography findings and vascular access

5.5.1 Coronary angiography

The majority of coronary angiography findings ended with medical intervention, which is consistent with the study conducted by Neumann et al. (2020) that showed the prevalence of medical intervention ended was 60.8%, and similar to King-Shier, et al (2019), and in contrast with Sciascio et al. (2010).

The prevalence of PCI ended was 30.7%, according to Neumann et al. (2020), which is constant with the current study, and similar to the study conducted by King-Shier, et al (2019), and in contrast with Sciascio et al. (2010) that showed the prevalence of PCI is 76%.

The prevalence of CABG ended at 8.8% in the current study, which is similar to Neumann et al. (2020) and King-Shier, et al (2019), and consistent with Sciascio et al. (2010) that showed the prevalence of CABG is 11%.

5.5.2 Vascular access

The findings of the current study were different from the study conducted by Di Sciascio et al. (2010) showed the use of femoral access (90%) for catheterization is more than radial access (10%). Conversely, this research study found the proportion of radial access (88.5%) is higher than femoral access (11.5%) but the other study conducted by Dworeck t al. (2020), that showed the percentage of radial access (81%) in both groups is higher than the percentage of femoral access (19%).

Although radial access is increasingly used for coronary angiography and PCI, it improves results, patient satisfaction, and procedural efficiency (Sandoval et al., 2017).

5.6 End point (LOS, Hematoma, TIA)

5.6.1 LOS

The study conducted by Widimsky et al. (2008), showed the average LOS in group A 7 days, and average LOS in group B 10 days. That is consistent with the current study that showed the LOS in group A more than the LOS in group B. In other study conducted by Herman et al. (2009) that show the LOS preoperative cardiac surgery is 3.8 for group A and 8 for group B, this result is consistent with the current study.

The average LOS in group A (4.18 day) in the current study is less than the study conducted by Widimsky et al. (2008), that showed the average LOS in group A is 7days. On the other hand, the average LOS in group A in the present study was higher than the study conducted by Herman et al. (2009).

Regarding average LOS in group B (6.59 days) in the current study, which lowers than the study conducted by Widimsky et al. (2008) and Herman et al. (2009).

5.6.2 Hematoma

The current study showed the proportion of hematoma inpatient participants in group B higher than in group A (8.1% vs. 4%) prospectively, that consistent with the study conducted by Delia ET AL.(2015) that showed the percentage of hematoma in group B is 2% and in group A is 1.7%. Another study conducted by Widimsky et al. (2008) showed the percentage of hematoma in group B vs. group A is (1% vs. 0.2%) prospectively. as the

study conducted by Capodanno et al. (2015) showed the hematoma complication in group A is 1.4% vs. 3.5 in group B.

5.6.3 TIA

Regarding TIA findings, the study conducted by Delia et al. (2015) showed the percentage of TIA in group B is 0.4% and in group A 0.13%, similar to study conducted by Tarantini et al. (2020) showed the percentage of TIA in group B is 0.1% and group A is 0.0%, which consistent with the current study. Another published study by Widimsky´ et al. (2008), showed the percentage of TIA in group B is 0.6% higher than in group A 0.2%.

5.7 Limitation

The limitation of this study was the limited information, Limited resources like literature, and guidelines/protocols, and Transportation. Finally, the Corona pandemic that restricts the referral to the urgent patient is just that not included in our study. Another limitation as not examining the CBC after the coronary angiography, to compare between the pre-catheterization and post- catheterization procedures, to determine the rate and type of bleeding, there is not enough time to follow up the patient after his discharge from the hospital to study the long term outcome of antiplatelet therapy. One hospital refused to participate in the research for administrative reasons.

5.8 Conclusion

Pretreatment antiplatelet loading dose before elective coronary angiography increases the risk of minor bleeding complications and LOS in case of surgical intervention. Pretreatment antiplatelet loading dose can be administered safely in the

catheterization lab between coronary angiography and PCI in patient with low-risk ACS. We suppose that Pretreatment antiplatelet loading dose should be used before planned elective PCI, but not before planned elective coronary angiography, this is due to the increased prevalence of hematoma and LOS, as well as TIA, in patients who received pretreatment loading dose before coronary angiography, compared to patients who received loading dose after coronary angiography in case of PCI, as shown by the results of this study.

5.9 Recommendation

- The participation of the Palestinian Ministry of Health with the results of the research and its dissemination to the hospitals of the Ministry of Health.
- Generalizing the results to the cardiologist, to approve to not giving the pretreatment loading dose to patients with low-risk ACS, according to this study, as well as according to the results of scientific research in this regard.
- Studying the necessity of measuring the risk of bleeding before the coronary angiography.

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Annex 1: Questioner

Short term outcomes of administering antiplatelet clopidogrel loading dose in Emergency Department for low risk acute coronary syndrome patient in North West Bank hospital

ID#:_____

Age:___ **Gender**: M/F **Whigt**:_____ kg **Hight**:_____ cm **BMI**:_____

Chief Complaint: _____

Pain scale (0-10): _____ **Started**: _____

Time course: ( )still present ( ) better ( ) gone; lasted _____
( ) resolved on arrival to ED ( ) constant ( ) waxing and waning
( ) intermittent episodes lasting _____
( ) worse, persistent since _____ ( ) Other _____ ( ) Not addressed

Quality: ( ) Pressure ( )tightness ( )indigestion ( )burning ( )Dull ( )aching ( )sharp ( )stabbing ( )pain ( )numbness ( )like previous MI Radiation: ( )none
( ) Other_____ ( ) radiates to:_____
( ) Not addressed

Associated Sx: ( )nausea ( )emesis ( )SOB ( )diaphoresis ( ) Other_____ ( ) Not addressed

Worsened by: ( )position change ( )deep breath/turning ( )exertion ( )nothing
( ) Other_____ ( ) Not addressed

Relieved by: ( )NTG ( )sitting up ( )rest ( )antacids ( )nothing
( ) Other_____ ( ) Not addressed

Onset during: ( )rest ( )sleep ( )light activity ( )mod-heavy exertion ( )emotional upset ( )cannot recall ( ) Other_____ ( ) Not addres

PMH/co-morbidities: ( )HTN ( )DM ( )HLP ( )Previou MI ( ) Heart Diseasen ( ) strock Other_____ ( ) Not addressed

Surgeries/Procedures: ( ) Cardiac bypass ( )Cardiac Cath

( ) Angioplasty ( ) Pacemaker ( ) Defibrillator
( ) Other_____ ( ) Not addressed

Social History: ( )Smoker ( )Illicit Drugs ( )ETOH
( ) Other_____ ( ) Not addressed

Family History: ( ) CAD: _____ ( )Other _____ ( ) Not addressed

Diagnostic Testing Results: HB pre cath: _____ HB post cath:_____

Pt take P.O loading dose antiplatlete therapy in Emeragny Department Y/ N
If **Yes** how many PLAVIX_____ gm ASPIRIN_____ Gm

Site of insertion: ( ) Radial ( ) Distal radial ( ) Femoral
Time of attempt as recorded on file: ( ) Once ( ) Second ( ) Multi

Coronary angighrapy findings: ( )Medical Intervention ( ) coronary interventional ( )CABG

If finding **CABG**, length of stay untill operation_____/day

If finding **medical intervention or CABG**
Post angioghrapy assessment by treating physician note: ( ) No complication

( ) Hematoma ( ) TIA ( ) Others _____

Annex 2: consent form

نموذج طلب موافقة على المشاركة في بحث علمي

عنوان الدراسة

النتائج قصيرة المدى لإعطاء جرعة تحميل مضاد للصفيحات كلوبيدوجريل في قسم الطوارئ لمريض متلازمة الشريان التاجي الحادة منخفضة المخاطر في مستشفيات شمال الضفة الغربية."

اسم الباحث الرئيسي : أكرم "محمد شريف" عبد اللطيف شحرور

المشرف على البحث : د. جمال القدومي

ملخص البحث

نقوم بهذه الدراسة استيفاءا لمتطلبات التخرج من برنامج ماجستير تمريض الطوارئ في الجامعة العربية الامريكية وهي دراسة سريرية لتقييم نتائج اعطاء دواء مميع الدم الكلوبيدوجريل بقسم الطوارئ لمرضى الذبحة الصدرية ونتائج ما بعد اجراء القسطرة القلبية لهم وكذلك دراسة خصائص المرضى الذين يعانون من الذبحة الصدرية. وسيتم اخذ المعلومات من خلال استبيان خاص سيتم تعبئته لكل مريض ذبحة صدرية عند دخوله للمستشفى لوقت خروجه منه.

معلومات عن العينة المنتقاة والفترة الزمنية المقدرة لاستكمال المقابلة أو الاستبيان

تم اختيار فئة مرضى القلب المصابين بالذبحة الصدرية لإجراء هذا البحث العلمي عليهم لما فيه من نتائج ايجابية متوقعة للمرضى. ستبدأ الدراسة من لحظة دخول المريض لقسم الطوارئ للمستشفى وصالا الى اجراء القسطرة القلبية وحتى خروجه من المستشفى.

المخاطر المتوقعة والخصوصية:

ليست هنالك اي مخاطر للدراسة سواء نفسية ام جسدية . سيتم حفظ خصوصيتك كمشارك بالدراسة وسوف يتم التكتم على هويتك وسيبقى اسمك طي الكتمان والمكان الوحيد الذي سيتم ذكر اسمك فيه هو نموذج الموافقة على المشاركة في الدراسة. سوف يتم التعامل مع العينة والمعلومات الخاصة بك بطريقة الترميز حماية لخصوصيتك ويحق لك الانسحاب من البحث متى شئت من دون أن يأثر ذلك عليك او على الرعاية الطبية التي سوف تتلقاها.

المنافع المتوقعة

تتطلع هذه الدراسة للوصول الى تحليل نتائج اعطاء دواء مميع الدم الكلوبيدوجريل في قسم الطوارئ لمرضى الذبحة الصدرية ومتابعة نتائج القسطرة القلبيى لهم وكذلك دراسة خصائص المرضى المصابين بالذبحة الصدرية.

طريقة التواصل مع الباحث

إذا كانت لديك اي سؤال او استفسار عن الدراسة يمكنك التواصل مع الباحث (أكرم شحرور) بكل رحابة وفي اي وقت عن طريق هاتف رقم 0599132481 أو البريد الإلكتروني (akram.m.shahroor@hotmail.com) .

توقيع المشاركة في البحث

لقد حصلت على شرح مفصل عن الدراسة وأهدافها وإجراءاتها و منافعها والمخاطر المحتملة. ولقد فهمت كافة المعلومات التي قدمت لي وتمت الإجابة على كل أسئلتي. لذا فأنني أوافق وبمحض ارادتي على ألمشاركة في هذه الدراسة.

الاسم .....:

التوقيع.....:

التاريخ.....:

Annex 3: Facilitate the task

Arab American University
Faculty of Graduate Studies

الجامعة العربية الأمريكية
كلية الدراسات العليا

التاريخ 2021-1-30

حضرة د. عبد الله القواسمي المحترم

رئيس وحدة التعليم الصحي والبحث العلمي في وزارة الصحة الفلسطينية

تحية طيبة وبعد،

الموضوع: "تسهيل مهمة بحث لطلاب الدراسات العليا – تخصص ماجستير تمريض الطوارئ"

تهديكم الجامعة العربية الأمريكية أطيب تحياتها ,,,,,

إشارة إلى الموضوع أعلاه, وتماشيا مع سياسة دائرة التمريض في **كلية العلوم الطبية المساندة/الجامعة العربية الأمريكية** المتعلقة بتعزيز التعاون بين المؤسسات **ووزارة الصحة الفلسطينية الموقرة** بإتاحة فرص الإثراء العلمي للطلبة والخريجين في المؤسسات الوطنية وإسهامها في تنمية قدراتهم وخبراتهم ونرجو من حضرتكم التكرم بالإيعاز للجهات المعنية لتسهيل مهمة الطالب " **أكرم شحرور**" في الدراسات العليا حسب المجموعة المبينة أدناه لاستكمال بحثه العلمي بعنوان:" **النتائج قصيرة المدى لإعطاء جرعة تحميل مضاد للصفيحات كلوبيدوجريل في قسم الطوارئ لمريض متلازمة الشريان التاجي الحادة منخفضة المخاطر في مستشفيات شمال الضفة الغربية.**" في مستشفيات وزارة الصحة. وذلك لأغراض البحث العلمي حيث سيكون الهدف من الدراسة: **" تقييم نتائج اعطاء دواء مميع الدم الكلوبيدوجريل بقسم الطوارئ لمرضى الذبحة الصدرية ونتائج ما بعد اجراء القسطرة القلبية لهم وكذلك دراسة خصائص المرضى الذين يعانون من الذبحة الصدرية ".** عن طريق استمارة يتم تعبئتها وقت دخول المريض للمستشفى للعلاج من الذبحة الصدرية ومتابعته الى ما بعد اجراء القسطرة القلبية في المستشفيات الواقعة في شمال الضفة الغربية والتي تحتوي على مراكز قلب متقدمة لعلاج مرضى القلب على أن تبدأ مهمتهم البحثية يوم الاثنين بتاريخ 2021/2/1 وتنتهي يوم الجمعة 2021/4/30 تحت إشراف (د. جمال القدومي).

كما نود التنويه بأن الطالب أكرم شحرور سوف يقوم بجمع الاستمارات من المرضى ومتابعتهم وذلك بعد الحصول على موافقة رسمية من حضرتكم وأيضا **نتعهد بعدم ذكر أسماء المستشفيات أو أنها تابعة لوزارة الصحة في حال تم نشر البحث.**

مع فائق الشكر والتقدير،،،

د. أشرف الميمي

عميد كلية الدراسات العليا

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النتائج قصيرة المدى لإعطاء جرعة تحميل مضاد للصفيحات كلوبيدوجريل في قسم الطوارئ لمريض متلازمة الشريان التاجي الحادة منخفضة المخاطر في مستشفيات شمال الضفة الغربية

ملخص

المقدمة: جرعة دواء كلوبيدوجريل المضادة للصفيحات تحسن النتائج بشكل ملحوظ في المرضى الذين يخضعون لزراعة الشبكيات؛ ومع ذلك ، فإن فاعلية استراتيجية اعطاء الدواء قبل عملية زراعة الشبكية بعد تصوير الأوعية التاجية مقابل اعطاء الدواء بشكل روتيني لمن يخضعون لعملية تصوير الاوعية التاجية متلازمة الشرايين التاجية منخفضة الخطورة ما زالت غير واضحة بشكل كامل.

الهدف: تحديد مدى انتشار نتائج اعطاء جرعة عقار كلوبيدوجريل على المدى القصير في مرضى متلازمة الشرايين التاجية منخفضة الخطورة ، والمظاهر السريرية متلازمة الشرايين التاجية منخفضة الخطورة ، والعلاقة بين خصائص المرضى (الأعمار ، الجنس ، إلخ) وتحميل النتائج قصيرة المدى للجرعة في متلازمة الشرايين التاجية منخفضة الخطورة ونتائج عملية القسطرة القلبية.

المنهجية: تصميم دراسة كمية مستقبلية وصفية ومقارنة. ما مجموعه 352 مريضًا يعانون متلازمة الشرايين التاجية منخفضة الخطورة مناسبين لتلقي جرعة 300 ملغ كلوبيدوجريل و 300 ملغ من الأسبرين ، قبل تصوير الأوعية التاجية (المجموعة ب عدد: 252) ، أو تصوير الأوعية التاجية بعد التداخل في الشرايين التاجية (المجموعة أ عدد: 100). كانت نقطة النهاية هي مدة المكوث بالمستشفى في حالة التدخل الجراحي والورم الدموي و النشبة الدماغية العابرة في حالة التدخل التاجي والتدخل الجراحي.

النتيجة: كان هناك فرق ذو دلالة إحصائية (X2 = 9.83 & Sig. = 0.020) بسبب معدل نقطة النهاية ، (ورم دموي ، النشبة الدماغية العابرة بين المجموعتين ، ومدة المكوث بالمستشفى لـ لمرضى تطعيم الشرايين التاجية (t = 9.39، .(p <0.001 كانت الورم الدموي تحدث في 4٪ في المجموعة أ ، 8.1٪ في المجموعة ب ، تحدث مضاعفات النشبة الدماغية العابرة في 0.7٪ في المجموعة ب ، بدون أي حالة في المجموعة أ 0.0 ٪ ، متوسط مدة المكوث بالمستشفى في المجموعة أ هو 4.18 يوم ، في المجموعة ب 6.59 يوم .

الخلاصة: جرعة اعطاء مضادات الصفيحات قبل المعالجة قبل تصوير الأوعية التاجية الاختيارية تزيد من خطر حدوث مضاعفات النزيف ، النشبة الدماغية العابرة و مدة المكوث بالمستشفى في حالة التدخل الجراحي. يمكن أن تدار بأمان في قسم القسطرة بين تصوير الأوعية التاجية ووزراعة الشبكية في

المرضى الذين يعانون من متلازمة الشرايين التاجية منخفضة الخطورة. نفترض أنه يجب استخدام جرعة تحميل مضادات الصفيحات قبل المعالجة قبل التدخل التاجي الاختياري المخطط له ، ولكن ليس قبل تصوير الأوعية التاجية الاختياري المخطط له.

الكلمات الأساسية: متلازمة الشرايين التاجية منخفضة الخطورة ، المعالجة المسبقة ، جرعة تحميل مضاد الصفيحات ، مضاعفات نقطة النهاية