بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

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MONA MAGHRABY

Correlation of Serum Uric Acid Levels with Coronary Flow in Patients with ST-segment Elevation Myocardial Infarction undergoing Primary Coronary Intervention

Thesis

Submitted for Partial Fulfillment of
Master's Degree in ***Cardiology***

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Abdelrahman Ahmed Abdelrahman Sharafeldin

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List of Abbreviations

Abb.	Full term
CAD	*Coronary artery disease*
CBC	*Complete blood picture*
DM	*Diabetes Mellitus*
ECG	*Electrocardiogram*
ESRD	*End stage renal disease*
FH	*Family history*
HTN	*Hypertension*
IC	*Intracoronary*
INR	*International normalized ratio*
IS	*Infarct size*
IV	*Intravenous*
MBG	*Myocardial blush grade*
MI	*Myocardial infarction*
MVO	*Micro vascular occlusion*
PCI	*Percutaneous coronary intervention*
PPCI	*Primary percutaneous coronary intervention*
PTD	*Pain to door*
SD	*Standard deviation*
SPSS	*Statistical Package for the Social Science*
STEMI	*ST-segment elevation myocardial infarction*
TIMI	*Thrombolysis in myocardial infarction risk score*

INTRODUCTION

Acute myocardial infarction is the most severe manifestation of coronary artery disease, which causes more than 2.4 million deaths in the USA, more than 4 million deaths in Europe and northern Asia, and more than a third of deaths in developed nations annually ***(Yeh et al., 2010).*** Primary PCI is the treatment of choice for acute coronary syndrome with STEMI ***(Nichols et al., 2014).*** The reopening of the culprit coronary artery, however, does not necessarily translate into improved tissue perfusion, despite imaging evidence that the target stenosis was adequately removed or bypassed. This phenomenon is known as **No-Reflow.**

Hyperuricemia is one of the important risk factors for CAD. It is associated with an increased risk of mortality and morbidity.

While many studies have proved the correlation between hyperuricemia and major cardiac events in patients presenting with STEMI and undergoing primary PCI the assessment of the relation between hyperuricemia and coronary flow in patients presenting with STEMI and undergoing primary PCI has not been fully evaluated ***(Ozgur et al., 2017).***

Hyperuricemia is known to be associated with cardiovascular disease (CVD), such as coronary artery disease (CAD), stroke and hypertension ***(Kim et al., 2010)*** but the role

of serum uric acid (SUA) as an independent risk factor for CVD remains unclear. Many epidemiologic studies have shown that hyperuricemia is frequently noted in patients either with CVD or at a high risk of CVD, such as hypertension, CAD, stroke, heart failure, metabolic syndrome, and peripheral vascular disease [. Most investigators reasoned that SUA may become passively elevated due to the effects of insulin resistance, renal vasoconstriction, and reduced estimated glomerular filtration rate (eGFR) to reduce uric acid excretion by the kidneys ***(Zhao et al., 2017).*** However, experimental studies have suggested that SUA may have an independent modulatory or causal role in these conditions ***(Mazzali et al., 2010).*** Consistent with these findings, an elevated SUA has been consistently found to predict the development of CAD ***(Kim et al., 2010).*** Unfortunately, because many of the subjects with hyperuricemia have comorbidities, it can be difficult to differentiate the role of SUA from the coexistence of the other comorbid conditions. Although multivariable analysis can be used to control for these other conditions, multivariable analysis can be misleading if the associated risk factors are causally linked ***(Kuwabara et al., 2017).*** The limitations associated with multivariable analysis as a means for determining causation are well known ***(Zhao et al., 2017).***

Aim of the Work

The aim of this work is to study the effect of Uric acid level as a preventive tool for No-reflow phenomenon in patients presented with acute STEMI undergoing primary PCI.