

*Research Article***Serum prolactin level in patient with NSTEMI - ACS****Amr S. Amin***, **Lamiaa H. Abd Elhuq****, **Sayed Sh. Mahmoud***, and **Taha A. Abd Elhameed***

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Abstract

Introduction: Acute coronary syndrome was defined as the cluster of symptoms arising due to the rapid drop of blood flow to the heart because of coronary artery obstruction. **Aim of the work:** The aim of this study is to determine. Would the level of prolactin detect early, diagnosis of NSTEMI – ACS??, Would the level of prolactin predict prognosis of NSTEMI - ACS??, Would the level of prolactin correlate with grace risk score??. **Patients and Methods:** Our study included 80 patients (Pts.) diagnosed as NSTEMI-ACS (NSTEMI and Unstable angina). The Pts were presented within 3hs from the onset of chest pain to our Coronary Care Unit of EL- Minia University hospital in the period from July 2016 to April 2017. **Results:** This study included 80 patients (Pts) who presented with NSTEMI-ACS within 3 hs from the onset of chest pain, whether un-stable angina or NSTEMI. The Pts were presented to our Coronary Care Unit of Minia University hospital in the period from July 2016 to April 2017. **Discussion:** Hyper-prolactinemia may reflect neuroendocrine stress reaction to ACS, which induces acute endothelial dysfunction, insulin resistance, and Induction of vascular immune reactions thus, prolonged hyper-prolactinemia lead to arteriosclerosis, augmentation of arterial stiffness, and hypertension. (Medic-Stojanoska et al., 2015). **Summary:** Our study included 80 consecutive Pts, [51 males (63.8%), 29 females (36.2%), with a mean age \pm SD of 57.42 ± 10.3 years, diagnosed as NSTEMI-ACS at CCU of EL-Minia University Hospital in the period from July 2016 to April 2017.

Key Words: **VEGF-B** : Vascular Endothelial Growth Factor -B, **VIP**: Vasoactive Intestinal Polypeptide, **VSMC**: Vascular Smooth Muscle Cells

Introduction

Acute coronary syndrome was defined as the cluster of symptoms arising due to the rapid drop of blood flow to the heart because of coronary artery obstruction. ACS included Spectrum of ST-elevation Myocardial Infarction, non-ST elevation Myocardial Infarction and unstable angina. (Aslam Lashari et al., 2017).

It has been reported that cardiac disease puts around 17 million people to death each year, of which half of the deaths are caused due to ACS. (Hamilton et al., 2013)

Ischemic heart disease (IHD) secondary to coronary atherosclerosis, was the leading

cause of death and disability worldwide. (Naghavi et al., 2015)

The landscape of IHD was changed dramatically since the first percutaneous coronary intervention (PCI) initiated in 1977 and further performed for patients with myocardial infarction (MI) in 1980s. (King and Schlumpf 1993)

In developed countries the risk of death from IHD for a given age decreased between 1980 and 2010 because of the diagnostic and therapeutic advances, but more than 20% of patients with ACS were still suffering from recurrent adverse cardiovascular events within 3 years of the index event. (Stone et al., 2011)

Aim of the work**The aim of this study is to determine**

- Would the level of prolactin detect early diagnosis of NSTEMI – ACS??
- Would the level of prolactin predict prognosis of NSTEMI - ACS??
- Would the level of prolactin correlate with grace risk score??

Patients and Methods

Our study included 80 patients (Pts.) diagnosed as NSTEMI-ACS (NSTEMI and Unstable angina). The Pts were presented within 3hs from the onset of chest pain to our Coronary Care Unit of El-Minia University hospital in the period from July 2016 to April 2017.

Inclusion criteria

Our study included Pts with NSTEMI-ACS whether NSTEMI or un-stable angina defined by ESC as:

Unstable angina:

Unstable angina is defined as myocardial ischemia at rest in the absence of cardiomyocyte necrosis with Prolonged (20 min) anginal pain at rest (Roffi et al., 2016)

Results

This study included 80 patients (Pts) who presented with NSTEMI-ACS within 3 hs from the onset of chest pain, whether unstable angina or NSTEMI. The Pts were presented to our Coronary Care Unit of Minya University hospital in the period from July 2016 to April 2017.

The study included 80 Pts and the age range was 32-84 years old (51 male and 29 female Pts.). Three Pts had positive family history of coronary artery diseases, while nineteen Pts were smoker and fourteen Pts were ex-smoker. Diabetic Pts in the study population were thirty Pts, while hypertensive Pts were forty seven. (Table 1)

Table 1: The Demographic data of all studied patients

Demographic Data	Patients	
Age(years)	Range	32-84
	Mean±SD	57.4250±10.31623
Gender	Male	51(63.8%)
	female	29(36.2%)
FH	Yes	3(3.8%)
	No	77(96.3%)
Smoking:	Yes	19(23.8%)
	No	47(58.85)
	X-smoker	14(17.5%)
DM	Yes	30(37.5%)
	No	50(62.5%)
HTN	Yes	47(58.8%)
	No	33(41.3%)

(FH = family history, DM = diabetes mellitus, HTN = hypertension, NSTEMI = non ST elevation MI)

Discussion

Hyper-prolactinemia may reflect neuroendocrine stress reaction to ACS, which induces acute endothelial dysfunction, insulin resistance, and Induction of vascular immune reactions thus, prolonged hyper-prolactinemia lead to arteriosclerosis,

augmentation of arterial stiffness, and hypertension. (Medic-Stojanoska et al., 2015)

During acute MI serum prolactin levels increased as a stress response, cardiac necrosis Leads to depletion of antioxidant

STAT3 level which Leads to the provoking of cardiomyocyte oxidative response that in consequence activates cathepsin D enzyme which plays an essential role in conversion of 23kDa prolactin into anti-angiogenic and pro-inflammatory 16kDa subfraction which leads to chemokine and cytokine over expressions with NFκB (Natural killer Cells) activation , all these changes lead to coronary vasoconstriction, apoptosis, and inflammatory cardiomyocyte injury (Hilfiker-Kleiner et al., 2007)

Conclusion

Serum prolactin level elevated early in Pts with NSTEMI-ACS and level of prolactin was higher in Pts with NSTEMI than Pts with unstable angina.

Pts with high prolactin level had a higher incidence of MACE than other Pts.

There was no correlation between GRACE score and NSTEMI-ACS Pts.

References

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