TITLE:

“EVALUATION OF SERUM PROLACTIN LEVEL IN ACUTE MYOCARDIAL INFARCTION AND ROLE OF PHARMACOTHERAPY”

TYPE OF STUDY:

CROSS SECTIONAL STUDY

STUDY CENTRE:

Dept of CARDIOLOGY, CCU, GSH

PRINCIPAL INVESTIGATOR:

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GUIDE/CO-INVESTIGATOR:

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AIM AND OBJECTIVES

- Aim of the present study was evaluation of the serum prolactin level in the acute myocardial infarction (MI) regarding the current pharmacotherapy in management of MI.
• To compare the levels of serum prolactin in patients with acute myocardial infarction and normal population, to know the role of current pharmacotherapy.

• To compare Serum Prolactin with Serum Troponin I.

MATERIALS AND METHODS

Method of collection of clinical sample and data-Patients admitted in the CCU, dept.of cardiology, Govt Stanley Hospital with Acute myocardial infarction shall be studied.

STUDY DESIGN:

CROSS SECTIONAL STUDY.

STUDY PERIOD:

March 2017 to October 2017 [ 8 month ]

CASE DEFINITION:

Myocardial infarction (MI) is the irreversible necrosis and death of cardiac muscle due to diminished blood supply to the heart which leads to myocardial cell damage and ischemia supplied by that artery. The diagnosis of acute myocardial infarction based clinically, electro and Echocardiographically. During stress like MI patient secrete excess Sr.prolactin Via neuroendocrine stress pathway, which induces acute endothelial dysfunction, insulin resistance, and induction of vascular immune reactions. Long standing hyperprolactinemia
lead to arteriosclerosis, augmentation of arterial stiffness, and hypertension. High prolactin level plays a potential role in the development of ischemic cardiac disease. Excess prolactin leads to dyslipidemia, augmentation of platelets aggregation and amplification of vascular thrombosis that leading to the increasing in the risk score of acute coronary syndrome.

**JUSTIFICATION OF STUDY**  High prolactin level plays a potential role in the development of ischemic cardiac disease. Excess prolactin leads to dyslipidemia, augmentation of platelets aggregation and amplification of vascular thrombosis that leading to the increasing in the risk score of acute coronary syndrome. Early diagnosis and treatment reduce the risk of prolactin induced acute myocardial infarction

**INCLUSION CRITERIA:**

Patients with acute ST elevation changes in ECG and hypokinesia of regional wall motion abnormality in Echocardiographically.

**EXCLUSION CRITERIA:**

1. Hypothyroidism Patients.
2. Chronic dopamine agonist drug intaker
3. Smoker

**SAMPLE SIZE:**

- 50
METHODOLOGY:

- The Acute MI patients are subjected to a detailed history and clinical examination with the help of ECG and ECHO.
- The Acute MI patients are divided into 50 subjects in one group, with healthy controls as second group.
- The subjects of each group are appropriately matched for age and sex.
- Basic investigations with serum prolactin and serum troponin are taken within 24 hours onset of symptoms.
- The serum prolactin levels of the two groups are then compared.
- The serum prolactin levels are compared with serum troponin among the acute MI patients.
- T.Metformin, T.Aspirin, combined T.Aspirin and T.Clopidogrel and other drugs like T.Atorvasatin, T.Metoprolol, T.ISDN compared with patients and control group

**TABLE :**

<table>
<thead>
<tr>
<th>Patients Group and Control Group</th>
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<tr>
<td>Age</td>
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REFERENCE VALUE

- Serum Prolactin Normal Range - Male less than 15ng/dl.
  Female less than 20ng/dl.

- Serum Troponin I Normal Range - Both Sex Less than 50ng/L.


METHOD USED FOR ESTIMATION OF SERUM PROLACTIN:

ELISA kit method

METHOD USED FOR ESTIMATION OF SERUM TROPONIN I:

ELISA kit method

RESULTS AND DISCUSSION

STATISTICAL ANALYSIS
Descriptive statistics was done for all data and suitable statistical tests of comparison were done. Continuous variables were analyzed with the Unpaired t test and Single factor ANOVA and categorical variables were analyzed with Fisher Exact Test. Correlation analysis was done using Pearson's r. Statistical significance was taken as P < 0.05. The data was analyzed using SPSS Version 16. Microsoft Excel 2010 was used to generate charts.

CONCLUSION

- The association between the study groups and age distribution is considered to be not statistically significant.
- Serum Prolactin level higher among acute myocardial infarction patients.
- Prolactin is associated with a comprehensive panel of incident cardiovascular disease risk factors. Measurement of circulating prolactin levels on a routine basis among high-risk individuals is more likely to provide substantial insight into cardiometabolic risk.
- Elevation of Serum Prolactin level is associated with a chronic inflammatory state.
- T.Metformin treated group patients showed significantly reduced serum prolactin level in acute MI patient compared to control group.
- T.aspirin treated group patients showed significantly high Serum Prolactin level in Acute MI patient compared to control group, this is
mainly due to aspirin increases prostaglandin generation in hypothalamic region which stimulate high serum prolactin.

- Serum Prolactin was not affected by T.Clopidogrel.
- Other drugs like T.Metoprolol, T.Atorvastatin, T.ISDN shows reduced Serum Prolactin level.

**SUMMARY**

This study “EVALUATION OF SERUM PROLACTIN LEVELS IN ACUTE MYOCARDIAL INFARCTION: THE ROLE OF PHARMACOTHERAPY” was carried out in government Stanley medical college and hospital, Chennai from March 2017 to October 2017

- 50 Acute MI patients were selected and their serum prolactin levels and serum troponin levels were studied correlated with 50 normal healthy individuals. The role of pharmacotherapy in serum prolactin level was assessed.
- In acute MI patient showed significant elevation of serum prolactin level.
- According to various pharmacotherapy drugs like Metformin decreases the serum prolactin, Aspirin increases the serum prolactin and other drugs like Clopidogrel no effect.
- So serum prolactin level increased in acute MI reflects underlying cardiovascular complications.

**LIMITATIONS**
1. Low sample size. So little space for robust statistical analysis.

2. Study population restricted to patients referred for acute MI to our department, so a selection may have influenced the results.

3. Poor financial support

4. Inability to use research design like cohort study due to paucity of time and resources

AREAS FOR FUTURE RESEARCH:

1. Prospective studies are needed to further study the association between Serum Prolactin, Atherosclerosis and Acute Myocardial Infarction.

BIBLIOGRAPHY


3. Jin J, Hashizume T. Effects of hypothalamic dopamine on growth hormone-releasing hormone-induced growth hormone secretion and


