Assessment of Serum Uric Acid Levels in Patients with Acute Myocardial Infarction

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Abstract

Background: Aim of the study was to discover if there is the efficacy of serum uric acid in the prognostication of myocardial infarction subjects. Subjects and Methods: A total of 200 subjects were incorporated into the research. Of them, 74 patients had ST- elevated myocardial infarction, as in 26 subjects they were diagnosed with non-ST elevation myocardial infarction. Of the total of 100 subjects in the study group, there were 70 males and 30 females. A total of 100 healthy individuals as a control group were also incorporated in the study. Serum uric acid was measured on day 0, 3, 7 and on day 30 of MI.

Results: Serum uric acid was calculated on day 0, day 3, and day 7 and on day 30 of the myocardial infarction in the case study group. The mean uric acid levels on day 0 were found to be $6.32 \pm 1.45 \text{mg/dl}$, mean uric acid level on day 3 was found to be $5.98 \pm 0.98 \text{mg/dl}$, mean uric acid level on day 7 was found to be $5.14 \pm 2.18 \text{mg/dl}$ and mean uric acid level on day 30 was found to be $4.98 \pm 0.44 \text{mg/dl}$.

Conclusion: Serum uric acid stages are elevated in subjects of acute MI in contrast to standard well individuals. Subjects with higher Serum uric acid levels have an elevated probability of transience and it can be measured as a marker of appalling prediction.

Keywords: Cardiac Muscle, Myocardial Infarction, Uric acid Level

Introduction

Myocardial infarction (MI) is the disruption of blood supply to a fraction of the heart, origins heart cells to expire. The most ordinary cause underlying an incident of acute myocardial infarction is Coronary Artery Disease with attrition or break of a plaque causing fleeting or inequitable or whole arterial occlusion. Coronary artery disease is an important source of cardiovascular death globally, with $> 4.5$ million deceases going on in the globe. Standard signs of acute MI comprise unexpected chest pain characteristically burning to the left arm or left side of the neck, breathlessness, vomiting, palpitations, sweating, and anxiety. MI can happen devoid of any counsel indications, which are described as silent MI. Several may be connected with ‘atypical’ signs, for instance, heartburn, nausea, or abrupt dizziness and sweating. Hyperuricemia in coronary occlusive disease has been known and a transient elevation of serum uric acid has been reported in acute MI. However, some authors have demonstrated a fall in the serum uric acid levels during the first two days of hospitalization. They have also reported an association among the decrease in serum uric acid levels and serum lactate dehydrogenase.

Subjects and Methods

The subjects analyzed as ST section elevation acute myocardial infarction (STEMI) or non-ST segment elevation acute myocardial infarction (NSTEMI) on the origin of clinical account assessment, ECG changes, and biochemical markers.
The mean age was found to be 54.3 with individuals in the control group being from 35 – 80 years. The control group consisted of 100 healthy individuals as a control group were thrombosed whereas due to delayed presentation 8 hours of the onset of the symptoms. A total of 66 subjects with acute MI, accessible to the medical hospital within 24 hours of admission, the differences were found to be statistically significant. (p<0.05) When the mean values of serum uric acid levels were compared from day 0 to day 30, the level of serum uric acid was found to be decreasing. When the values of mean serum uric acid levels were measured between the control group and that of on day 30, the dissimilarity was not established to be statistically significant.

Discussion

Researchers revealed that uric acid may be a threat to cardiovascular diseases. Clinical types of research have High serum uric acid causes rising platelet reactivity arbitrating inflammation and stimulus of smooth muscle cell propagation, which perhaps worsens acute thrombosis. There is proof that high uric acid is a pessimistic predictive feature in subjects with acute myocardial infarction. However certain other studies have stated that any relationship among the levels of uric acid and transience from AMI is only owing to the union of uric acid with previous risk factors and uric acid by itself does not have any alliance with the mortality rate of MI. The current research was performed on 100 subjects of acute MI. Total of hundred age and gender coordinated vigorous controls were also assess for judgment. Mikus, finished comparable findings. while, Sokhanvar, et al, accounted that there are augmented SUA levels as the time proceeds. Significant superior level of SUA in subjects of AMI on the day of an entrance as a contrast to controls. SUA slowly diminished with the moment in subjects of MI & on day 30 levels were analogous to that in the control group. Therefore, subjects had superior SUA levels on day 0 perhaps since of AMI. Comparable outcomes examined in research by Kojima, et al, Nadkar, also found that SUA levels are superior in subjects with acute MI as a contrast to fit gender and age coordinated controls.

Conclusion

Serum uric acid levels are advanced in subjects of acute MI in contrast to standard well people. Subjects with superior Serum uric acid levels have an elevated probability of death, which can be measured as the pointer of poor prognosis.

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Table 1: Age Distribution of the Case and Control Groups

| Age (years) | No. of subjects in the case group | No. of individuals in control groups |
|-------------|----------------------------------|-------------------------------------|
| <50         | 10                               | 18                                  |
| 50 – 60     | 20                               | 38                                  |
| 60 – 70     | 42                               | 34                                  |
| 70 – 80     | 16                               | 10                                  |
| >80         | 12                               | -                                   |
| Total       | 100                              | 100                                 |
Table 2: Serum Uric Acid Level in Subjects and Control Group on Day 0, 3, 7 and 30

| Groups      | Day 0 (mg/dl) | Day 3 (mg/dl) | Day 7 (mg/dl) | Day 30 (mg/dl) |
|-------------|---------------|---------------|---------------|---------------|
| Case group  | 6.32 ± 1.45   | 5.98 ± 0.98   | 5.14 ± 2.18   | 4.98 ± 0.44   |
| Control group | 4.85 ± 0.86  | 4.85 ± 0.86   | 4.85 ± 0.86   | 4.85 ± 0.86   |
| P value     | <0.001        | <0.05         | <0.05         | 0.056         |

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