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Research Article

**REVEALING THE INTENSITY OF URIC ACID SERUM IN
HIGH BP CASES HAVING CRITICAL MI**¹Dr Mohsin Yousaf, ²Dr Sana Iqbal, ³Dr Ayesha Habib¹MO at Tehsil Heaquarter Hospital, Taxila, ²Quaid e Azam Medical College, Bahawalpur,³Allama Iqbal Medical College, Lahore**Article Received:** January 2019**Accepted:** February 2019**Published:** March 2019**Abstract:**

Aim of the Study: We held this study to evaluate serum level of uric acid in patients of hypertension having acute myocardial infarction and in the patients of hypertension with out myocardial infarction.

Study design: It is a transverse type of analysis

Place and Period of Analysis: This study was carried out in the Department of Medicine at Services Hospital, Lahore. This analysis was continued for 06 months duration with starting date from January, 2018 up to ending date Jun, 2018.

Methodology: This analysis consisted a total number of 80 cases through which 40 Critical MI cases and 40 non-MI cases were sorted into MI group and non-MI groups respectively.

Results: Average age of MI and non-MI was observed respectively as 50.0 ± 12.4 and 51.8 ± 10.1 years. With P value to be less than 0.001 as 01 mmol/L is equal to 16.78 mg/dl and 1mg is equal to 0.059 mmol/L, we got the outcome of uric acid serum intensity of MI group was 61.9 ± 1.0 mg/lg (0.407 ± 0.059 mmol/L) and in non-MI was 5.8 ± 1.5 mg/dl (0.342 ± 0.088 mmol/).

Conclusion: Increase in intensity of uric acid serum would affect in state of high blood pressure and more increase would be stated to MI was observed through current analysis.

Key words: Hypertension, Serum uric acid, Myocardial infarction.

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INTRODUCTION:

Symptoms of cardiovascular effect could be simply achieved and the absorptions of serum uric acid were reduced as presented in the current analysis [1,2]. Cases of coronary artery ailment have raised intensity of uric acid serum and this intensity is raised due to overweightness, more alcoholic use, stress, high BP, high sugar level and according to age. These given facts can have affected symptoms of coronary artery ailment, heart attack and MI [3,4]. Cases are presented to have raised intensity of uric acid serum which have primary hypertension or talked as vital indefinites of arterial hypertension known as Image result for primary hypertension [5]. Essential hypertension is high blood pressure that doesn't have a known secondary cause. It's also referred to as primary hypertension. Cardiovascular ailment as an outcome of high bp and renal ailment difficulties which are observed to be significant effect of uric acid in the evolution of atherosclerosis were purposed through the current proof. Unless the outcomes of Rotterdam analysis which presented the relativeness of effects of heart attack and MI with intensity of uric acid serum, the affect of uric acid serum was indistinct [6]. Cases of coronary artery ailment with high BP were observed to have expressively raised uric acid serum where the value of P less than 0.001 through a different analysis. The cases of normal BP having coronary artery ailment were also observed to have raised average effects but the variation of facts was non-expressive [7]. Serum uric acid had expressive affect to subgroup with high bp and metabolic syndrome was presented by study of subgroup at Chin-Shan Community Cardiovascular Cohort Analysis. Serum uric acid was expected to have a very least coronary artery ailment but have raised affect of heart attack as an outcome in Taiwan [8]. The intensity of uric acid serum was observed to be same or above than 5.2mg/dl and individually exposed the 3.5-fold raised effect of cardiovascular death [9]. The intensity of uric acid serum was raised in high bp cases of MI as a compared to non-MI high bp cases was observed through this analysis as a comparison between high bp cases of MI and non-MI cases and by keeping the intensity of serum uric acid low we can stop the MI in high bp cases.

METHODOLOGY:

The analysis was conducted with the duration of 6 months started from 1st January 2007 to 30th June in the Department of Medicine at Mayo Hospital in Lahore. A total number of 80 high BP cases were analyzed in this transverse analysis through judgmental and non-convenience sampling. 40 cases of MI and 40 non-MI cases were included in MI group and non- MI group respectively. Written

agreement of permission granted in full knowledge of the possible consequences was obtained from all cases. Currently diagnosed patients with MI due to increased cardiac enzymes, ECG variations and history were added in this analysis. All male and female cases were of above 25 years of age. The cases with infections of gout, high blood sugar and chronic renal disease were not added.

Cases of MI which were referred from emergency department which have desire eligibility of inclusion and exclusion were enrolled and did the ECG test. Information was collected and analyzed facts and indications of MI. Collected blood samples and sent to pathology laboratory of King Edward Medical University for testing, serum uric acid, high blood sugar and cardiac enzymes and fasting lipid profile test was done. All the cases of MI which were referred from OPD were added in non-MI group.

Collected all information and tests were conducted. All cases were tested through ECG. Fasting lipid profile and blood samples of all enrolled cases were collected for testing high blood sugar, CKMB, and uric acid serum and forwarded to pathology lab and un-enrolled cases were suggested to have this type of examination and then come back to OPD for evaluation. Co-ordination of different confusing factors like high blood sugar, BP, Gender and Age was done. No factor was found through risk-benefit analysis. Verification of the information of every case was written for analysis on the given proforma. This information was examined and written through SPSS 12. Simple descriptive method was used to examine the effects of factors like gender, intensity of serum uric acid, high blood sugar, fasting lipid profile and age and shown as Mean \pm Standard divergence. Categorical factors like chest pain features and gender were analyzed through evaluated percentage and frequency. Intensity of serum uric acid was evaluated in both groups. The evaluation was done through self-depending sample t-test where the class of factor is quantitative. The p-value which is = or < than 0.05 was thought to be expressive.

RESULTS:

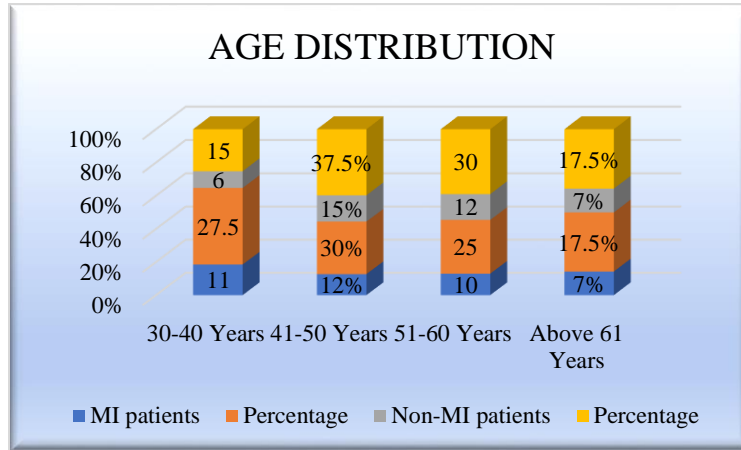
This analysis was continued for 6 months duration with starting date from 01-01-2007 up to ending date 30-06-2007. This analysis consisted a total number of 80 cases through which 40 Critical MI cases and 40 non-MI cases were sorted into MI group and non-MI groups respectively in the medicine department of Mayo Hospital in Lahore. No case left overall during the analysis. Age of all the cases was more than 30 years. 12 cases were between 41-50 years, 11 were 30-40 years, 10 were between 51-60 and 7 were more

than 61 years of age with the percentage of 30.0%, 27.5%, 25.0% and 17.5% respectively in the MI group. Cases were observed as an average age of 50.0 ± 12.4 years. 15 cases were between 41-50 years, 12 were between 51-60 years, 6 were between 30-40 years and 7 cases were more than 61 years of age with the percentage of 37.5%, 30%, 15% and 17.5% respectively in the non-MI group and average age of cases was observed as 51.8 ± 10.1 years. There were 28 male and 12 female cases in Mi group with the percentage of 70% and 30% respectively. While there were 26 male and 14 female cases in non-MI group with the percentage of 65% and 35% respectively with the p value of 0.633. ST-elevation was presented in various indications of the medication through ECG that was conducted in MI group. 13 cases had acute inferior wall MI, 7 cases had anteroseptal wall, 10 had anterior wall MI, 6 had anterolateral wall MI, 1 had inferior wall MI of right ventricular infarct and 3 had non-ST elevation with the percentage of 32.5%, 17.5%, 25.0%, 15.0%, 2.5% and 7.5% respectively in the MI group. The cases of non-MI group after ECG were Normal in 25 cases, presented bradycardia in 3 cases and strain pattern in lateral leads in 12 cases with the percentage of 62.5, 7.5% and 30.0 % respectively. The beat of cases in MI group and non-Mi group was 80.7 ± 11.0 beats per minute and 73.8 ± 11.3 per minute respectively by this analyzation where value of P was 0.002. The calculation of systolic BP of cases in MI group and non-MI group was written as 137.2 ± 11.3 mmHg and 138.0 ± 13.4

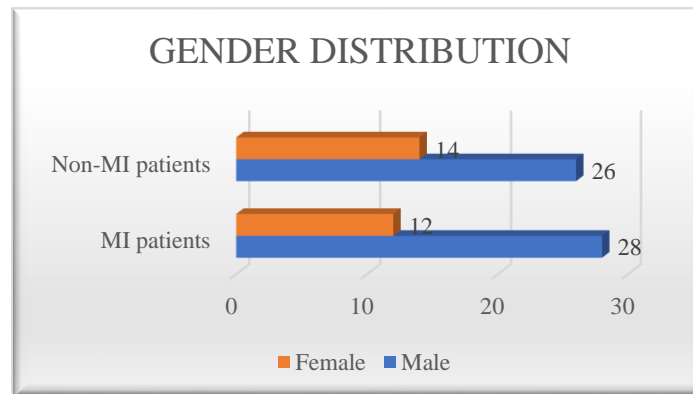
mmHg respectively where the value of P was 0.788. Diastolic Bp of cases in MI group and non-MI was noted as 83.2 ± 18.3 mmHg and 83.3 ± 10.0 mmHg where p value was 0.970 as shown in the table no 01. The admitted cases were analyzed which have high blood sugar, fasting lipid profile, uric acid serum intensity and cardiac enzymes also written as CKMB. Rate of CKMB in MI group and non-MI group was 68.03 ± 59.4 U/L and 9.9 ± 7.0 U/L respectively where the p value was less than 0.001. Outcomes of high blood sugar in MI group and non-Mi group were 114.7 ± 24.9 mg/dl and 125.7 ± 24.3 mg/dl where the p-value was 0.050. Serum cholesterol intensity in MI group and non-Mi group was 192.9 ± 21.4 mg/dl and 184.3 ± 19.0 mg/dl respectively where the p-value was 0.061. Rate of Serum triglycerides in MI group and non-Mi group was 180.1 ± 70.1 mg/dl and 171.3 ± 43.7 mg/dl respectively where the p-value was 0.502. Serum HDL in MI group and non-MI group was 38.5 ± 4.6 mg/dl and 36.8 ± 5.6 mg/dl respectively where p-value was 0.014. Outcomes of serum LDL in MI group and non-MI group was 122.7 ± 19.8 mg/dl and 113.1 ± 13.9 mg/dl where p-value is 0.014. Intensity of uric acid serum in mi group and non-MI group was 6.9 ± 1.0 mg/dl with the range of 0.407 ± 0.059 mmol/L and 5.8 ± 1.5 mg/dl with the range of 0.342 ± 0.088 mmol/L respectively where value of p was less than 0.001 and value of 1 mmol/L was 16.78 mg/dl and 1 mg/dl were 0.059 mmol/L. The above given results are shown in the following tabular forms.

Table no 01: Age Distribution

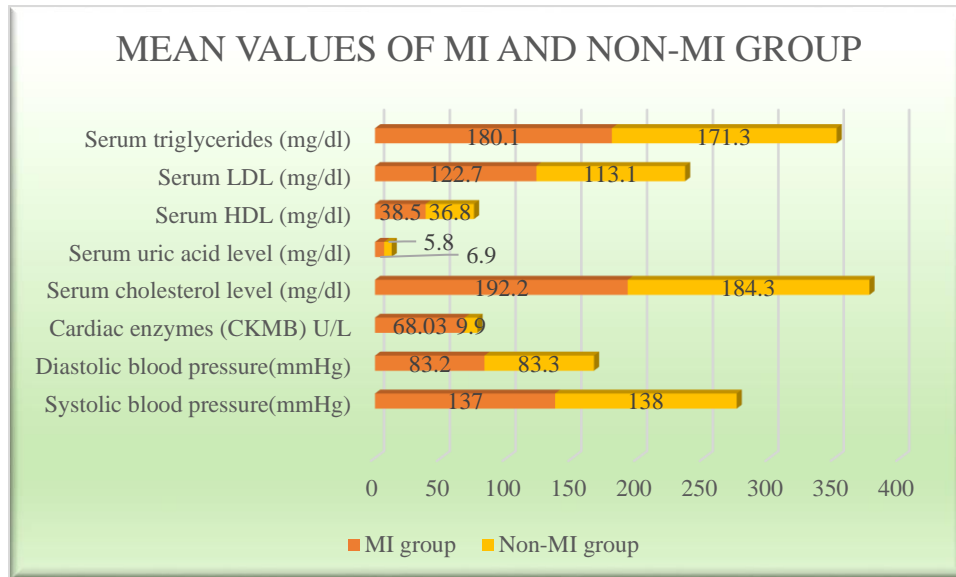
Age Group	MI patients	Percentage	Non-MI patients	Percentage
30-40 Years	11	27.50%	06	15%
41-50Years	12	30%	15	37.5%
51-60Years	10	25%	12	30.5%
Above 61 Years	07	17.5%	07	17.5%
Mean Age	Mean Age of MI Group		Mean Age of Non-Mi Group	
	50±12.4Years		51.8±10.1 Years	

**Table no 02: Gender Distribution**

gender	MI patients	Percentage	Non-MI patients	Percentage
Male	28	70%	26	65%
Female	12	12%	14	35%

**Table no 03: Comparison of MI and non-MI group**

Variables	MI group Mean \pm SD	Non-MI group Mean \pm SD	P-value
Systolic blood pressure(mmHg)	137.20 \pm 11.30	138.0 \pm 13.40	0.788 (NS)
Diastolic blood pressure(mmHg)	83.20 \pm 18.30	83.30 \pm 10.0	0.970 (NS)
Cardiac enzymes (CKMB) U/L	68.03 \pm 59.40	9.90 \pm 7.0	< 0.001
Serum cholesterol level (mg/dl)	192.90 \pm 21.40	184.30 \pm 19.0	0.061
Serum uric acid level (mg/dl)	6.90 \pm 1.0	5.80 \pm 1.50	< 0.001
Serum HDL (mg/dl)	38.50 \pm 4.60	36.80 \pm 5.60	0.144
Serum LDL (mg/dl)	122.70 \pm 19.80	113.10 \pm 13.90	0.014
Serum triglycerides (mg/dl)	180.10 \pm 70.10	171.30 \pm 43.70	0.502



DISCUSSION:

Cardio Vascular ailment influences like high BP were mostly related to examined serum uric acid [10]. In various cohort analysis the intensity of serum uric acid to be the vital consequent influence of Heart ailment [11]. Intensity of uric acid in MI group and non-MI group through the current analysis was 6.9 ± 1.0 mg/dl with 0.407 ± 0.059 mmol/L and 5.8 ± 1.5 mg/dl with 0.0342 ± 0.088 mmol/L where p-value was less than 0.001. The intensity of uric acid was presented to be more in MI cases of high blood pressure than non-MI cases where intensity of uric acid was a consequent influence of critical MI.

Information about cases presented an important relation of death consequences in genders and intensity uric acid through an analysis of Ioachimescu et al [12]. Uric acid was observed to be 5.2 mg/dl with 0.306 mmol or more than this and individually transferred a fold value of 3.5 raised consequence of coronary artery alimented mortality for a duration of 5 years through an analysis of Short et al as similarly relative to outcomes of current analysis. In countryside male high BP cases of MI have average uric acid serum intensity of 5.85 ± 1.34 mg/dl with 0.349 ± 0.080 mmol/L and Female cases of MI have SUA intensity of 4.46 ± 1.20 mg/dl with 0.266 ± 0.072 mmol/L through an analysis by Fan et al. The total frequency of hyperuricemia with the percentage of 14.0% was explained as intensity of SUA in male and female cases was 6.98 mg/dl with 0.416 mmol/L and 6.04 mg/dl with 0.360 mmol/L or more than it respectively. Cases of high BP having SUA intensity maximum quartile which was 5.77 mg/dl with 0.344 mmol/L had maximum factors of ischemic heart

ailment. Hyperuricemia was still present having raise consequent influences of CHD with OR of 1.428 and CI was 1.113-1.832 with the percentage of 95.0% after the regulation of gender, age, sugar level, BP, diagnosis history through anti-hypertensive medications and body mass index [13].

Intensity of SUA was observed relatively to be an influence of mortality and CHD before diagnosis got through a maximum cohort PIUMA with same outcomes. The upper quartile of SUA in male and female were more than 6.2 mg/dl with 0.369 mmol/L and more than 4.6 mg/dl with 0.274 mmol/L respectively relative to clinically observed and significant risk factors were creatinine, age, gender, BMI, HDL, left ventricular hypertrophy, BP during treatment of cases, total cholesterol and high blood sugar. SUA is a common factor for the variations of consequent influences and their effects but it would not be responsible for a relevant influence of CHD was observed through final outcomes. SUA was the most perfect to evaluate the consequences of CHD and death factors as compared to other affects [14]. Factors like fasting lipid profile, gender, age high blood sugar, BP and age were diagnosed as critical conditions. The outcomes of current analysis were same as the outcomes of analysis done by Alderman et al at multicultural people having vital high BP and observed relativity of cardiovascular factors with intensity of SUA. In white people was less and in non-white people was most apparent. The cardiovascular ailment was more predictable in cases of diagnosed SUA than non-diagnosed SUA and continued this alliance for the treatment through serum creatinine, race and diuretic therapy more than

other consequent influences. So far, the average Intensity of SUA in male and female which was 6.69 mg/dl or 0.399 mmol/L and 5.38mg or 0.321 mmol/L respectively were observed variant and cases were dispersed through definite quartile cut points. Cardiovascular consequences were observed after the regulation in sex and age as surely associated with intensity of SUA with association of consequent influences which were 1.118-1.86 CI with the percentage of 95.0% of maximum as compared to less quartile. Low raise in cardiovascular factors with raised SUA cases were presented by cases of hyperlipemia, smokers and high blood sugar than the cases which did not have such factors. Average diagnosis of SUA raised with the raise of diuretic revelation [15].

As all cases did not have hyperlipidemia and did not have high blood sugar were found as similar outcomes of the current analysis. Average age of cases in MI group and non-MI group was observed as 50.0 years with the common difference of 12.4 years and 51.8 years with difference of 10.1 years respectively through the current analysis. There is a variation of age in different parts of world in accordance to the analysis by Nishtar et al. Western population have maximum average age as compared to south Asian population [16]. All the cases have more than 55 years of age as per the analysis of Rotterdam directed at west. Current analysis presented that all cases were going through the MI and high BP ailment at a very young age as different from the stated analysis. Cases have age of 20-85 were analyzed by Alderman et al and this analysis was same as the current analysis. Number of Male and female cases were 28 and 12 with the percentage of 70.0% and 30.0% respectively in the MI group while in non-MI group the number of male and female cases were 26 and 14 with the percentage of 65.0% and 35.0% respectively got through the current analysis. The number of male and female cases were 4883 and 3095 with the percentage of 61.0% and 39.0% respectively out of a total number of 7978 cases found in the analysis by Alderman et al while gender was confusing influence through the analysis by PIUMA and Rotterdam.

Current analysis was the same as analysis by Alderman et al in which the male and female cases had similar proportion. BP was examined as a confusing influence in the current analysis and both MI and non-Mi groups had recorded systolic and diastolic BP analysis as similar variety and p-value was consistently insignificant. All the cases of high blood sugar, fasting lipid profile and case which did not have high blood sugar were found to normal in

extent through the current analysis. therefore, fasting lipid profile and blood sugar were diagnosed like confusing influences as the same got through analysis of Alderman et al. while the decreased intensity of SUA affecting the existence was still under examination. The diagnosis of gout cases was being done by medicines which decrease uric acid intensity for several years. Few analyses presented the decrease in intensity of SUA had a significant result to symptoms of cardiovascular and atherosclerosis ailment. After the duration of 3 months diagnosis of cases having hyperuricemia with maximum critical influences of cardiovascular disease were presented to have improvement in flow-mediated dilatation through Allopurinol which is inhibitor of xanthine oxidase [17]. We did not differentiate or evaluate the consequences of medications on intensity of SUA through the current analysis.

CONCLUSION:

The progressive countries having diseases and deaths mostly because of critical MI. Various people have disease and death due to interjection of various consequent influences like high blood sugar, high BP, coronary artery ailment and smoking. This variation affects due to environmental and gender variations. The perfection of consequent influences and symptoms are to recognized before. The revision of fitness livings and avoidable consequent influences related to the concretion must be acknowledged fully. The present study proved that raised serum uric acid level can be a risk factor for hypertension and further rise can lead to MI. From this inference can be drawn that while monitoring for hypertension and ischemic heart disease we should get serum uric acid level done, if found to be raised it should be controlled to prevent or delay hypertension which can further prevent MI. Further-more analysis were required to at National level to observe the decrease in intensity of SUA can really decrease the consequences of coronary heart ailment. The Information of the current analysis was of controlled number of cases due to some restrictions and multi-center analysis was required to be generated for the treatment of maximum number of cases to enhance the national advices for controlling consequent influences of MI. For the decrease of death and diseases at country-wide level due to IHD in a progressing country like Pakistan which had a very few resources could be assisted through these advices. The analysis of medicines like Allopurinol, atorvastatin and losartan which decrease the consequences of uric acid in cases of cardiovascular ailment was also required as if these medicines can help to decrease the disease and death rate in these cases.

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