International Journal of Advanced Biotechnology and Research (IJBR)
ISSN 0976-2612, Online ISSN 2278–599X,
Vol-8, Issue-4, 2017, pp59-64
http://www.bipublication.com

Research Article

Investigating the Effects of Hyperuricemiaon Cardiovascular Diseases in Cardiac Hospital Admissions Patients in Heshmat Hospital of Rasht in the First 6 Months Of 2010

Shaegheh Mohammadi*

*Medicine Doctor (MD), Ardebil University, Ardebil, Iran.
Corresponding Author Email: shaeghemohammadi@gmail.com

ABSTRACT

Introduction: Some epidemiologic studies have reported a link between uric acid levels and a wide range of cardiovascular diseases such as hypertension, coronary artery disease, vascular dementia, cerebrovascular disease, preeclampsia and kidney disease. However, the role of urinary tract in the development of cardiovascular diseases Remained. This research studies the relative frequency of pancreatic diseases in patients hospitalized in Heshmat Hospital of Rasht in the first month of 2010.

materials and methods: In this sectional-cross study, the sampling method was referenced to the archives of patients admitted to Heshmat Hospital of Rasht in the first six months of 2010 (April 1st to March 31st). The case file of 785 patients was randomly selected and information was obtained on gender, age, systolic blood pressure, diastolic blood pressure, coronary artery disease, chronic heart failure, and pyramora. This data was then extracted, analyzed for descriptive analysis and chi - square ANOVA by spss - 15 program.

Results: In this study, 785 patients with cardiovascular disease were studied. 478 were male (60.9%) and 307 were female (39.1%). The mean age of the population was 64.23 ± 11.93. The mean uric acid level was 6.396 ± 30.20. (The mean uric acid level in men was 6.514 with a standard deviation of 1.966 and in women was (6.212). Of 478 patients (100%), coronary artery disease was seen in 394 patients (82.4%). Of the 100% male patients with coronary artery disease, pyorourcemia was present in 162 patients (41.1%). ($p < 0.01$), which had a statistically significant difference.

conclusion: This study has shown a strong relationship between pancreatic and cardiovascular events that is stronger in men than in women. However, it remains open to responding to the question of whether the pancreas is an "innocent scanner" or that it can play a role in the pathogenesis of sclerosis.

Keyword: coronary artery disease, congestive heart failure, diastolic hypertension, cytolytic hypertension, pyramidal syndrome.

INTRODUCTION:

Serum serum is a major component of purine metabolism (1). Purines are nucleotide compositions that occur in three ways: food, biosynthesis, and tissue depletion of nuclides. The presence of pyrauria suggests that body humorosis has been altered with food or increased in-vitro production or by the removal of monosodium urate. Although, hyperuricemiais generally accepted as a primary risk factor for gout, many of them are without symptoms (2-5.).unlike the gout, the symptoms of hyperuricemia remain unclear in the general population (7, 6). As long as the symptoms occur, patients with hyperuricemiausually have no side effects such as hypertension, coronary heart disease, kidney disease, and diabetes. The outbreak of menopause is 24.3% and the male to female ratio is 2 to 1 (8). However, even with the long time knowing of this relationship, low attention has been paid to this issue; attention to Hypertension patients correctly illustrates that in every four patients with hypertension, one of them has hyperuricemia (9).

Several future studies have suggested a relationship between hyperuricemia and coronary artery disease, cardiovascular disease, and death (10-18)(but the role of uric acidis not proven as a risk factor for cardiovascular diseases) (19-22).

In the study of Brand FN, McGee DL and Baka, uric acid levels of people who participated in Coherent Framingham Check-ups were provided in the 4th and 13th sessions, which took place within two-year. The results of this study showed that the level of uric acid in the blood, which consumed antihypertensive drugs, was higher in both studies.The levels of uric acid in both sexes were consistent with systolic and diastolic blood pressure; this relationship was stronger in women than in men and in systolic pressure compared to bashystyostolic. This association was stronger in examining 4 than in the 13th study, when antihypertensive therapy was used. The ratio of uric acid to myocardial infarction in both sexes was equally strong (23).With regard to the importance of cardiovascular diseases and its consequences (death, inability, and treatment costs ...), the best treatment in these patients is prevention, surveillance and prevention is impossible without knowing the factors, some of the old factors are well known and different drug development and nutrition considered for them.

Despite all the available restrictions, with the view that the role of patients in cardiovascular events and diseases is directly and intimately related to other factors, this study has shown that a large number of patients with a focus on cardiovascular patients in Heshmat Hospital have been able to accumulate a large number of people for Increasing the accuracy of the study (0.03) was studied in order to evaluate the frequency of hyperuricemia as a preventive and therapeutic risk factor (24) in patients with cardiovascular diseases and determined its effects.

MATERIALS AND METHODS:

This study was a descriptive cross-sectional study. The data collection method was performed by reviewing the files in Heshmat Hospital's archive. From these cases, information was obtained on the sex, age, systolic blood pressure, diastolic blood pressure, coronary artery disease, chronic heart failure and hyperuricemia. This information was then coded into the computer and, at the end, the relative frequency of hyperuricemia was determined in these patients and its association with these diseases was evaluated. Therefore, in this study, the basis for defining the dimensions of the patients is considered to be somewhat considered in the surveys of the North American and European Countries in this study, as with all descriptive studies, there is a possibility of error. The name, address, and secret of the patients are emphasized without any comments.

The sample size is calculated using the formula n = (z) 2 * p * q / d2. The sampling method was referenced to the records of patients admitted to Heshmat Hospital in Rasht, in the first month of 2010 (from April 1st to April 31, 2010). Out of these cases, 785 cases were randomly extracted and the information contained in the file was provided in the attached file, which is attached. There were 21 deaths that were dropped from the statistical community and were replaced by random files that were randomly selected.

RESULT:

In our study, 785 patients with cardiovascular disease were studied. Of the total population, 478 were male (60.9%) and 307 were female (39.1%). The mean age of the population was 64.23 ± 11.93 years. The mean uric acid level was 6.396 ± 30.20. (The mean uric acid level in men was 6.514 ± 1.966 and in women was 6.212 ± 2.09 in women). The relative frequency of hyperuricemia in male patients was 43.5% (208 patients) and in female patients was 47.9% (147 patients).

The results showed that the relative frequency of hyperuricemia was increased in men ($p < 0.001$) and in women ($p = 0.143$). Of the 478 patients (100%), coronary artery disease was seen in 394 patients (82.4%). Of the 100% male patients with coronary artery disease, hyperuricemia was present in 162 patients (41.1%). ($P < 0.01$), which is statistically significant difference. Of the 307 patients, 240 (78.2%) patients had coronary artery

disease, with hyperuricemia in 116 (48.3%) patients. (P = 0.841), heart failure was seen in 40 patients (13%) with hyperuricemia in 30 (75%) patients (p = 0.003, plus diastolic blood pressure in 104 (33.9%) patients), with 38 patients (36.5%) having hyperuricemia (P = 0.027). Of 478 man patients, heart failure was seen in 73 patients (15.3%), that hyperuricemia exist (56.2%) in 41 patients (P <0.001). Systolic blood pressure was also seen in 261 patients (54.7%), with hyperuricemia in 123 (47.1%) patients. (P = 0.499). In addition, diastolic blood pressure was observed in 165 patients (34.6%), with 86 patients (52.1%) having hyperuricemia (P = 0.022).

DISCUSSION AND CONCLUSION:

There is a lot of evidence that there is an association between hyperuricemia with obesity (25), Hypertension (26), lowering HDL cholesterol (27) and hypertriglyceridemia (28). Apart from the interaction between uric acid and other active agents, there are several possible mechanisms by which uric acid may have a direct effect on atherogenesis or on the clinical course of cardiovascular disease, including the increase in uric acid levels of LDL cholesterol oxidation and lipid peroxidation (27). (High levels of uric acid are associated with increased platelet adhesion, and this can increase the formation of thrombosis in patients with acute coronary syndromes) (26). In Framingham study at 1985, the average level of uric acid for men in the 4th and 13th study was 5 mg / dl and 5.7 mg / dl, respectively, and for women, 3.9 mg / dl and 4.7 mg / dl, respectively. The level of uric acid consistent with antihypertensive medications was higher in both study. uric acid levels were consistent with systolic and diastolic blood pressure in both sex; this relationship was stronger in women than in men and in the systolic than in diastolic. This relationship was more severe in examining 4 than in the 13th study when antihypertensive therapy was used. The ratio of uric acid to myocardial infarction in the both sex was equally strong enough (23).

Larson et al. studies showed that uric acid in the development of coronary heart disease, death due to cardiomyopathy, and death due to all causes are not a cause. A clear linkage with these consequences may be due to the coexistence of uric acid levels with other risk factors (14).

In our review, hyperuricemiadisease was seen in 41.1% of men patients with coronary artery disease and 48.3% of women with coronary artery disease. It was also found that there was a statistically significant association between hyperuricemia and coronary artery disease in male patients (P <0.01), but no significant relation was observed in female patients (p = 0.84). Also, there was a significant difference between hyperuricemia and heart failure in both sex, (in men was (P <0.001) and in women was (P = 0.003)), and between hyperuricemia and hypertension, especially in diastolic blood pressure disease, in both sex.Celentano et al. examined 619 patients for 12 years. In 547 patients with normal blood pressure, serum uric acid concentration had a significant association with age, systolic blood pressure, diastolic blood pressure, BMI, total cholesterol and triglyceride. An independent positive association showed between the levels of multiple logistic regression analysis (RR = 1.23, 95% CI = 1.07-1.39; p = 0.011) and uric acid progression (28). One of the most important problems in this study was the difficulty of defining hyperuricemiadue to the abnormal distribution of serum uric acid in most populations. In our country, there was no fundamental research on serum concentrations of uric acid in healthy people, and therefore the deficiency of peroriemsis. Therefore, in this study, the basis for defining the scope of the program is considered to be somewhat taken into account in the surveys of the North American and European countries. In general, this study showed a strong coherence between hyperuricemia and cardiovascular events that are stronger in men than in women. However, they are still open in answering the question of whether the prophylaxis is an "innocent scanner" or that it can contribute to

the pathogenesis of coronary heart disease, remained.

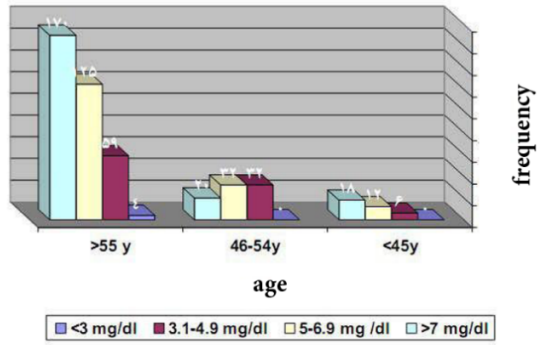

Table 1: The relative frequency of hyperuricemia in male according to age

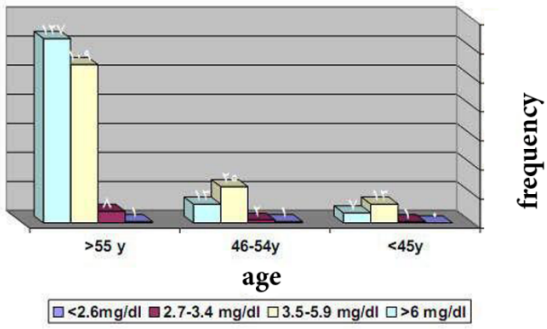

Table 2: The relative frequency of hyperuricemia in female according to age

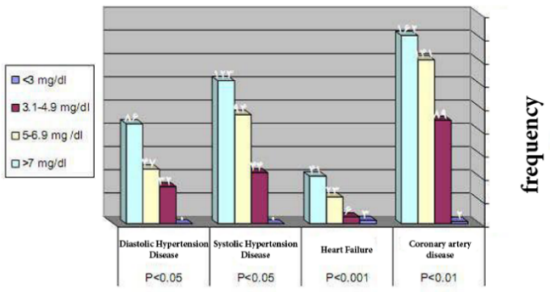

Table 3: The relative frequency of hyperuricemia in male patients according to of diseases

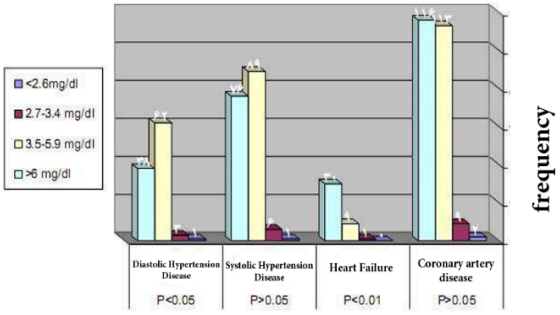

Table 4: The relative frequency of hyperuricemia in female patients according to of diseases

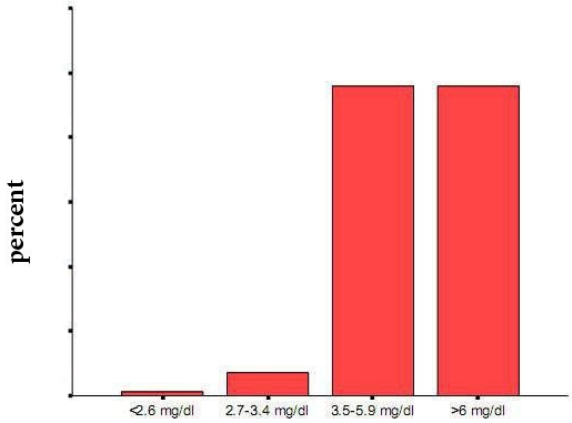

Table 5: The frequency of hyperuricemia in female patients

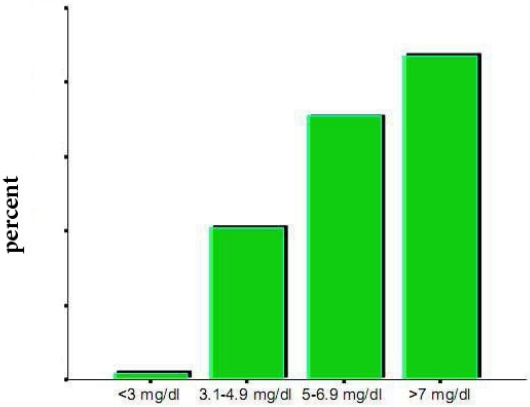

Table 6: The frequency of hyperuricemia in male patients

REFERENCE:

1. Wyngaarden JB, Kelley WN. Gout and Hyperuricemia. New York: Grune and Stratton; 1976: 134-6.
2. LinKC, Lin HY, Chou P. Community based epidemiological study of hyperuricemia and gout in Kin-Hu, Kinmen. J Rheumatol 2000; 27: 1045-50.
3. Lin KC, Lin HY, Chou P. The interaction between uric acid level and other risk factors on the development of gout among asymptomatic hyperuricemic men in a prospective study. J Rheumatol 2000; 27: 1501-5.
4. Hall AP, Barry PE, Dawber TR, McNamara PM. Epidemiology of gout and hyperuricemia. Am J Med 1967; 42: 27-37.

5. Zavaroni I, Mazza S, Fantuzzi M, et al. Changes in metabolism of insulin and lipids in males with asymptomatic hyperuricemia. J Intern Med 1993; 234: 25-30.
6. Duffy WB, Senekjean HO, Knight TF, Weinman EJ. Management of asymptomatic hyperuricemia. JAMA 1981; 246: 2215-6.
7. 7.Campion EW, Glynn RJ, DeLabry LO. Asymptomatic hyperuricemia: risks and consequences in the Normative Aging Study. Am J Med 1987; 82: 421-6.
8. Gertler MM, Garn SM, Levine SA. Serum of uric acid in relation to age and physique in health and in coronary heart disease. Ann Intern Med.1998; 34: 1421-31.
9. Tykarski A. Evaluation of renal manipulation of uric acid in essential hypertension: hyperuricemia related to reduced urate secretion. Nephron 2004, July 2; 364-368.
10. Brand FN, McGee DL, Cannel WB, Stokes J 3d, Castelli WP. Hyperuricemia as a risk factor for coronary heart disease: the Framingham study. Am J Epidemiol. 1985; 121: 11-8.
11. Freedman DS, Williamson DF, Gunter EW, Byers T. Relation of serum uric acid to mortality and ischemic heart disease. The NHANES I Epidemiologic Follow-Up Study. Am J Epidemiol. 1995; 141: 673-44.
12. Levine W, Dyer AR, Shekelle RB, Schoenberger JA, Stamler J. Serum uric acid and 11.5-year mortality of middle-aged women: findings of the Chicago Heart Association Detection Project in Industry. J ClinEpidemiol. 1989; 42: 257-
13. Bengtsson C, Lapidus L, Stendahl C, Waldenstrom J. Hyperuricaemia and the risk of cardiovascular disease and total death. A
14. year follow-up of participants in the population survey of women in Gothenburg, Sweden. Acta Med Scand. 1988; 224: 549-55.
15. Yano K, Reed DM, McGee DL. Ten-year incidence of coronary heart disease in the Honolulu Heart Program. Relationship to biologic and lifestyle characteristics. Am J Epidemiol. 1984; 119: 653-66.
16. Reunanen A, Takkunen H, Knekt P, Aromaa A. Hyperuricemia as a risk factor for cardiovascular mortality. Acta Med Scand Suppl. 1982; 668: 49-59.
17. Mortality findings for stepped-care and referral participants in the Hypertension Detection and Follow-up Program, stratified by other risk factors. The Hypertension and Follow-up Program Cooperative Research Group. Prev Med. 1985; 14: 312-35.
18. Lehto S, Niskanen L, Ronnemaa T, Laakso M. Serum uric acid is a strong predictor of stroke in patients with non-insulin dependent diabetes mellitus. Stroke 1998; 29: 635-9.
19. Wannamethee SG, Shaper AG, Whincup PH. Serum urate and the risk of major coronary heart disease events. Heart 1997; 78: 147-153.
20. Wannamethee SG. Is serum uric acid a risk factor for coronary heart disease? J Human Hypertens 1999; 13: 153-6
21. Leiva F, Anker S, Swan JW, et al. Serum uric acid as an index of impaired oxidative metabolism in chronic heart failure. Eur Heart J 1997; 18: 858-65.
22. Nieto FJ, Iribarren C, Gross MD, Comstock GW, Cutler RG. Uric acid and serum antioxidant capacity: a reaction to atherosclerosis?
23. Puig JG, Ruilope LM. Uric acid as a cardiovascular risk factor in arterial hypertension. J Hypertens 1999; 17: 869-72.
24. Brand FN; McGee DL; Kannel WB: Hyperuricemia as a risk factor for coronary heart disease: the Framingham Study. Am J Epidemol 1985; 121 (1); 11-8
25. Bruce F. Culleton, MD; Martin G. Larson, ScD; William B. Kannel, MD; and Daniel Levy, MD. Serum Uric Acid and Risk for Cardiovascular Disease and Death: The Framingham Heart Study. Annals of Internal Medicine; 6 July.
26. Lee J, Sparrow D, Vocon PS, Landsberg L, Weiss ST. Uric acid and coronary heart disease risk: evidence of a role of uric acid in the obesity - the insulin resistance syndrome: the

Normative Aging Study. Am J Epidemiol. 1995; 142: 288-294.
27. Selby JV, Friedman GD, Quesenberry CPJ. Precursors of essential hypertension: pulmonary function, heart rate, uric acid, serum cholesterol, and other serum chemistries. Am J Epidemiol. 1990; 131: 1017-1027.
28. Wilson PWF, Garrison RJ, Abbott RD, Castelli WB. Factors associated with lipoprotein cholesterol levels: the Framingham Study. Arteriosclerosis. 1983; 3: 273-281.
29. Zavaroni I, Mazza S, Fantuzzi M, Dall'Aglio E, Bonora E, Delsignore R, Passeri M, Reaven GM. Changes in metabolism of insulin and lipids in males with asymptomatic hyperuricemia. Int J Med. 1993; 234: 25-30.