



## Letter to the Editor

# Letter to the Editor: Relationship between glycemic control and serum uric acid level in acute myocardial infarction

Mustafa Sahin<sup>1</sup>, Unsal Savci<sup>2</sup>, Havva Hande Keser Sahin<sup>3</sup>

<sup>1</sup>Department of Medical Biochemistry, Hitit University, Erol Olcok Education and Research Hospital, Corum, Turkey

<sup>2</sup>Department of Medical Microbiology, Hitit University, Erol Olcok Education and Research Hospital, Corum, Turkey

<sup>3</sup>Department of Pathology, Hitit University, Erol Olcok Education and Research Hospital, Corum, Turkey

We read with great interest the recently published article by Cirakli et al. in which the authors aimed to show a relationship between glycemic control and the serum uric acid level in acute myocardial infarction (AMI). They concluded that glycemic control and serum uric acid levels in AMI patients may be related. However, we think that there are some important points about this study that should be emphasized [1].

First, in the original study, in order to compare glycemia, uric acid, and lipid profile parameters, the study design should include a group that is healthy and without a statistically significant difference in age and gender. The control group was compatible for these demographic criteria, but all of the participants were diagnosed with AMI. The study groups, and especially the control group, might be better designed to evaluate and compare the parameters. As they were all AMI patients, it created serious difficulties for a comparison of the parameters. Gender and age are important risk factors for cardiovascular events in patients with diabetes mellitus [2].

Second, the serum low-density lipoprotein cholesterol and total cholesterol levels were found to be lower in the poor glycemic control group than in the other groups. In diabetic patients, statin-like lipid-lowering drugs may cause this result. The authors did not mention this in the article. Dyslipidemia in diabetes is a well-recognized and modifiable risk factor for cardiovascular events [3]. There was no limitation mentioned about drug use in the study groups, especially Group 3.

Third, diabetic patient management now includes the sup-

port of a dietician and education for diabetic patients in hospitals. The patients may have been careful to control protein intake. This may have helped maintain uric acid levels. Factors affecting uric acid metabolism in diabetic patients should be discussed extensively in such a study. Hyperuricemia is associated with cardiovascular events, hypertension, and renal diseases [4]. In addition, uric acid is a predictor of diabetic nephropathy as a microvascular complication [5].

Fourth, today, the incidence of diabetes in Turkey is around 14%, and this rate has been growing. This important fact should be considered when evaluating myocardial infarction pathology in terms of silent AMI [6].

In conclusion, a relationship between glycemic control and serum uric acid level in AMI studies should be evaluated multifactorially. The selection of patients included may change the statistical results. We suggest that healthy control patients and diabetic myocardial infarction patients might be compared in terms of uric acid and glycemic control. Factors affecting the serum uric acid level and glycemia must not be forgotten when evaluating diabetes and cardiovascular events.

## References

1. Levent Cirakli Z, Tekin Neijmann S, Kural A, Isiksacan N, Gedikbasi A, Erdin S. Relationship between glycemic control and serum uric acid level in acute myocardial infarction Int J Med Biochem 2018;1:11–4.

**Address for correspondence:** Mustafa Sahin, MD. Department of Medical Biochemistry, Hitit University, Erol Olçok Education and Research Hospital, Çorum, Turkey

**Phone:** +90 364 219 30 00 **E-mail:** mustafaistanbulx@hotmail.com **ORCID:** 0000-0001-6073-563X

**Submitted Date:** April 04, 2018 **Accepted Date:** April 18, 2018 **Available Online Date:** June 01, 2018

©Copyright 2018 by International Journal of Medical Biochemistry - Available online at [www.internationalbiochemistry.com](http://www.internationalbiochemistry.com)



2. Hayashi T, Kawashima S, Nomura H, Itoh H, Watanabe H, Ohru T, et al; Japan Cholesterol and Diabetes Mellitus Investigation Group. Age, gender, insulin and blood glucose control status alter the risk of ischemic heart disease and stroke among elderly diabetic patients. *Cardiovasc Diabetol* 2011;10:86. [CrossRef]
3. Daniel MJ. Lipid management in patients with type 2 diabetes. *Am Health Drug Benefits* 2011;4:312.
4. Johnson RJ, Kang DH, Feig D, Kivlighn S, Kanellis J, Watanabe S, et al. Is there a pathogenetic role for uric acid in hypertension and cardiovascular and renal disease? *Hypertension* 2003;41:1183–90. [CrossRef]
5. Hovind P, Rossing P, Johnson RJ, Parving HH. Serum uric acid as a new player in the development of diabetic nephropathy. *J Ren Nutr* 2011;21:124–7. [CrossRef]
6. Stamboul K, Zeller M, Fauchier L, Gudjoncik A, Buffet P, Garnier F, et al. Incidence and prognostic significance of silent atrial fibrillation in acute myocardial infarction. *Int J Cardiol* 2014;174:611–7. [CrossRef]

## Author's Reply

To the Editor,

We appreciate the valuable comments and suggestions in your letter in response to our article "Relationship between glycemic control and serum uric acid level in acute myocardial infarction."

1. In our retrospective study, we aimed to investigate the relationship between glycemic control and the serum uric acid (SUA) level among patients with acute myocardial infarction (AMI). Therefore, our control group was non-diabetic patients with AMI. Similarly, some other studies investigating the relationship between AMI and SUA did not have a healthy control group [1, 2].

2-3. Since it was a retrospective study, it was not possible to

get information about patient use of lipid-lowering drugs or protein intake. This was mentioned in the text.

4. We agree that the incidence of diabetes in Turkey has been growing and recent studies support that [3, 4].

As mentioned, the relationship between glycemic control and the SUA level in AMI should be evaluated multifactorially [5]. We concluded that further research should be performed in order to make a definite decision about the relationship between glycemic control and the SUA level in AMI.

Best regards,

## References

1. Tatli E, Aktoz M, Buyuklu M, Altun A. The relationship between coronary artery disease and uric acid levels in young patients with acute myocardial infarction. *Cardiol Journal* 2008; 15: 21-5.
2. Biswas K, Halder S, Sarkar R, Roy K. A study on prognostic significance of serum uric acid in acute myocardial infarction in a tertiary care institute. *Int J Res Med Sci* 2016;4:4557-62.
3. Tamayo T, Rosenbauer J, Wild SH, Spijkerman AM, Baan C, Forouhi NG, Herder C, Rathmann W. Diabetes in Europe: an update. *Diabetes Res Clin Pract.* 2014;103:206-17.
4. International Diabetes Federation. *Diabetes Atlas, 8th Edition, Turkey Country Report* 2017.
5. Kushiyama A, Tanaka K, Hara S, Kawazu S. Linking uric acid metabolism to diabetic complications. *World J Diabetes* 2014;5:787-95.

**Address for correspondence:** Zeynep Levent Cirakli, MD. Bakirkoy Dr. Sadi Konuk Education and Research Hospital Zuhuratbaba Mahallesi Tevfik Saglam Caddesi No: 11 Bakirkoy 34147 Istanbul, Turkey  
E-mail: zturci@mynet.com