

Letter to the Editor

Evaluation of admission glucose profile and glycosylated hemoglobin: factors associated with glucose metabolism should be assessed

Dear Editors,

We have greatly enjoyed reading the article by Vujosevic, et al¹ entitled "Influence of admission glucose profile and hemoglobin A1c on complications of acute myocardial infarction in diabetic patients," which was published in the previous issue of European Review for Medical and Pharmacological Sciences.

The authors¹ aimed to evaluate the influence of admission glucose profile (AGP) and glycosylated hemoglobin (HbA1c) on complications of the acute myocardial infarction (AMI) in patients with type 2 diabetes. They mentioned that values of AGP above 12.25 mmol/l are predictive significantly for electrical complications (EC) (sensitivity 77.3%; specificity 64.5%; area under curve (AUC) 0.718), since values above 14.85 mmol/l are highly predictive for both electrical and mechanical complications (MC) (sensitivity 54.4%; specificity 94.7%; AUC 0.782). They also mentioned that values of HbA1c above 9% are highly predictive for both types of complications (sensitivity 57.9%; specificity 78.8%; AUC 0.691). They concluded that AGP is a good predictor for AMI complications, significantly better for the electrical ones. Although the study is well done and we commend the authors for the excellent data that they have provided, some comments may be of beneficial.

Drug-induced hyperglycemia is a clinical condition that can occur as a result of impaired insulin secretion or the destruction of pancreatic β -cells². Many common therapeutic agents can influence glucose metabolism. The prevalence of hyperglycaemia and a deterioration of the glucose metabolism was higher with the use of glucocorticosteroids (GC), thiazide diuretics, spironolactone, beta-blockers, calcineurin, protease inhibitors, atypical antipsychotic drugs and thyroid hormone replacement therapies^{3,4}. The usage of GC is a common cause of drug-induced hyperglycemia, secondary to a decrease in insulin secretion and insulin sensitivity⁴. Hypokalemia and hypomagnesemia contribute to a dose-related diabetogenic potential of thiazide diuretics due to impairment of β -cell insulin secretion⁵. Spironolactone, a mineralocorticoid receptor antagonist, increase the blood levels of aldosterone, known to be a risk factor for insulin resistance⁶. And also, glucose intolerance can be observed in diseases such as Cushing's syndrome, primary aldosteronism and adrenal tumors⁶.

Assessment of AGP and HbA1c have been advocated as a simple and inexpensive prognostic factor in cardiovascular diseases⁷⁻⁹. Even the authors concluded that AGP is a good predictor for AMI complications (EC and EC+MC); the low sensitivity, specificity and area under curve (AUC) values did not support the conclusion. In respect to authors' findings and statistical analysis, it could be concluded that AGP and HbA1c have not sufficient power to screen and predict short-term cardiac complications after AMI.

Also, if patients' medication details including anti-diabetic agents and insulin therapy as well as medical histories, which could effect glucose metabolism and the study's results, were given; the study could have been more valuable.

References

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