

Kounis Syndrome After Lidocaine Injection

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To the Editor:

We are grateful to Dikici and Özdemir[1] for their letter and are pleased to have this opportunity to answer all their questions and clarify doubts.

First point: We performed skin tests (skin prick test [SPT] and intradermal test [IDT]) with the culprit and alternative drugs at the dilutions presented in the clinical report and a single-blind, placebo-controlled drug provocation test (DPT) using subcutaneous administration, as stated in the letter.

You refer to the different doses used in the patient we discuss. The patient was challenged once with 5, 2.5, and 5 mg of each drug. That means that the patient received only 5 mg of tetracaine, 2.5 mg of bupivacaine, and 5 mg of lidocaine if needed; the clinical report shows that the lidocaine provocation test was not performed because the result of the skin test was positive.

To avoid false-negative results, we never use local anesthetics containing adrenaline, since adrenaline is a vasoconstrictor that can reduce erythema and hive diameter.

Second point: The results of the in vivo study (skin test and DPT) were negative to tetracaine and bupivacaine, and the skin test results were positive to lidocaine (this was not addressed in detail in the clinical report). With a positive skin test result, we did not perform a DPT to lidocaine (see above).

As for the basophil activation test, I agree that cut-off levels can change between drugs [2] and there is not enough information about this test. This is the reason we tested lidocaine-induced basophil activation in 5 healthy controls, observing no changes (in contrast to the patient).

I hope this explanation prevents misinterpretation of the results and clarifies any remaining doubts about this interesting clinical report.

Third point: We agree with your comment about the ECG reading: the correct interpretation is a minimum low rise (ie, minimal change) in II, III, and AvF. These mild alterations in the ECG reading with compatible symptoms and moderate-severe changes in laboratory values (blood test results returned to normal after a few days) point to a diagnosis of type I Kounis syndrome.

Fourth point: You refer to Kounis syndrome after a skin test with lidocaine and articaine. In that clinical

report [3], neither lidocaine nor articaine were confirmed as the trigger, meaning that articaine could be the trigger (or not). In our clinical report, the skin test results were positive (with a mild and extensivelocal reaction), as were those of the basophil activation test. These are the reasons why lidocaine was the trigger of the reaction. The clinical report identifies lidocaine as the reason for the symptoms reported by the patient.

Fifth point: After the positive cutaneous test result, the symptoms were well described in the clinical report, and the medical treatment was exactly as the patient needed. No explanation for adrenaline or corticosteroids was provided, since the patient did not need to receive them.

Sixth point: Based on the blood parameters (normal basal tryptase and eosinophils after the episode) and allergy history (first anaphylaxis episode), we ruled out systemic mastocytosis and, therefore, did not perform bone marrow aspiration to confirm the disease [4].

As regards blood parameters in particular, no coronary biopsy was performed. In theory, type I Kounis syndrome does not yield eosinophils and/or mast cells in coronary biopsy [5], and type III Kounis syndrome yields a positive result for eosinophils and/or mast cells. The patient we report had type I Kounis syndrome (no previous cardiac stents or coronary problems); abnormal blood parameters are not reported in this type of patient.

The authors mention a letter to the editor [6] referring to a clinical report published by our group [7], where we offer an elegant description of Takotsubo syndrome, including clinical and in vitro diagnosis. When we compare this information with that recorded in the present case, we see that alterations in laboratory parameters were more pronounced than those reported previously, or the ECG revealed several alterations in addition to changes in clinical symptoms and laboratory parameters. Similarly, the patient reported no stress or discomfort before receiving lidocaine.

In the differential diagnosis with anaphylaxis, Kounis syndrome can be explained as a kind of anaphylaxis involving severe cardiac problems that progress well with intensive medical treatment. We think that this is a very clear explanation.

Commenting on the literature is an important task, and we are grateful to the authors for their thoughts on our work.

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Conflicts of Interest

The authors declare that they have no conflicts of interest.

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