Author’s response to reviews

Title: Patients presenting with metoprolol-induced visual hallucinations: a case series

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Dear Reviewers,

I want to thank you for your feedback and constructive criticism related to the submission of my article for publication in the Journal of Medical Case Reports. Your help was appreciated for the improvements to the content and format of the article. Hopefully I have addressed your concerns and made the necessary changes. I have highlighted the changes in yellow so they would be easier to visualize and I outlined them below.

1. Formatting changes for the title, numbering of the case presentations to conform to the journal’s style
2. Inclusion of the patient’s ethnicity in the abstract and case presentation
3. Standardization of the case reports description with providing a full list of chronic medications in each case.
4. Time Line: In each case I tried to provide you with a time line for the beginning of symptoms as it related to metoprolol.
5. Delay in Diagnosis: In each case, there was a significant delay in making a diagnosis of metoprolol-induced visual hallucinations. Case 1 was due to my own ignorance and I was educated by an astute fellow internist; Case 2 was due to the patient’s fear of being ridiculed and labeled as “crazy”; Case 3 was due to the ignorance of family and a physician caring for the patient prior to me. Unfortunately these caused delays for these patients that had to put up with very frightening and realistic hallucinations for years.
6. Was Metoprolol the etiology of the Visual Hallucinations? The patient in case 1 had a full neurological workup which was negative. Stopping the metoprolol resolved the visual hallucinations. In case 2 and 3, the visual hallucinations described were very similar to case 1 and what is reported in the literature with metoprolol as the cause. Stopping the metoprolol in both of these cases resolved the visual disturbance. I thus did not continue the neurological workup in either of these patients as they no longer had symptoms. I corrected the manuscript to reflect this and included more detailed descriptions of pertinent aspects of the history, physical exam and testing that was performed.
7. Hypothesis on Nocturnal Hallucinations: I included some possible causes of
beta blocker induced CNS side effects that have been reported in the literature. There is not one definite cause, nor was there a reported hypothesis why the hallucinations occur at night or in the hypnagogic state.

8. Chronic Heart Failure Patient: This was an excellent observation and criticism. All three patients had either hypertension or coronary artery disease as their diagnosis and I did not think to include CHF patients nor the newer third generation beta blockers. I now included this in the discussion area.

My drive for publishing this case series is to bring to light a side effect of a very commonly prescribed beta blocker. Since I have seen three cases in the last 18 years, I believe that this occurs more frequently than we realize. Patient reluctance to report hallucinations and physician ignorance (including my own) to this side effect of metoprolol worsen the problem. Only with healthcare provider education can we hope to make a difference with recognition of visual hallucinations related to metoprolol. Thank you again for your assistance.

Sincerely,

Jonathan A. Goldner, DO, FCCP, FCCM