Reviewer’s report

Title: Clinical and Biochemical Factors to Predict Biochemical Adrenal Insufficiency in Hospitalized Patients with Indeterminate Cortisol Levels: a Retrospective Study

Version: 0 Date: 18 Jan 2020

Reviewer: Giuseppe Reimondo

Reviewer's report:

The study addresses the interesting issue of the undiagnosed adrenal insufficiency in hospitalized patients. The Authors interestingly try to define an index of suspicion to perform ACTH stimulation test.

Some concerns derive from reading the study.

1. The Author consider as inclusion criteria a wide range of 8 h cortisol levels, without any distinction between the different categories defined by the guidelines (&lt;3, 3-15, &gt;15). Thus, patients with cortisol levels &gt;15, that predict a normal adrenal function, are also included. My suggestion is to reconsider the results after having categorized the patients in the 3 groups.

2. How many days after admission was performed ACTH test? Are there any differences between patients evaluated in the morning or in the afternoon? Was the test repeated after discharge in some patients?

3. Which was the best predictive threshold of 8 h cortisol level for AI?

4. The suggestion to use random cortisol levels require more caution since it is not demonstrated in a prospective head to head study and derive from a slight difference obtained by an area under the curve.

5. How many patients were in lipid lowering treatment? How this result can influence the correlation between low cholesterol levels and the risk of biochemical AI?
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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