Reviewer’s report

Title: Improvement in cognitive impairment following the successful treatment of endogenous Cushing’s syndrome—a case report and literature review.

Version: 0 Date: 28 Mar 2019

Reviewer: Mattia Barbot

Reviewer's report:

This interesting paper this article deals with the topic of the effects of cortisol excess on brain function and the possibility of recovery after Cushing's syndrome remission. First authors described a clinical case of a female patient who had significant worsening of her health with severe cognitive deficit who was diagnosed of CD only after 10 years from the development of signs and symptoms of the hypercortisolism. This paper focused on the possibility to obtain significant improvement of cognitive function after CS remission. As authors stated, complete reversal of neurocognitive impairment can unfortunately be only partial in these patients, thus early diagnosis of endogenous hypercortisolism is crucial.

I would like only some clarifications on the case report:

* When post-surgical cortisol measurement was assessed?

* What was the glucocorticoid initial dose given to the patient after surgery and why was she treated with prednisolone instead of hydrocortisone?

* Did the authors evaluate any changes in amygdala and hippocampus volume in their patient?

* I was wondering why this patient was treated with cabergoline after surgery, as she had only a slight elevation of prolactin levels in a single measurement; furthermore, she was taking haloperidol which is known to induce prolactin elevation. Can authors comment on that?

I think authors should discuss the impact of glucocorticoid receptor polymorphisms on cognitive function

Minor point:

* Once an abbreviation has been introduced, they should be used throughout the rest of the paper (i.e. CS for Cushing’s syndrome and CD for Cushing’s disease)
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Unable to assess

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

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Not relevant to this manuscript

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Acceptable

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