Reviewer’s report

Title: Exploration of knowledge and understanding in patients with primary adrenal insufficiency: A mixed methods study.

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Reviewer: Birgit Harbeck

Reviewer’s report:

The topic of this small study is of interest. Shepherd et al. investigated patients PAI knowledge and understanding of the condition, steroid replacement adjustment during acute illness or stress and the provided education. Ten adult patients with PAI were recruited. Information was evaluated using audio-recorded interviews and hospital case note review. The authors found patients with PAI not applying existing knowledge to adjust steroid dose during times of increased need (e.g. stress). They conclude that behavior change interventions are needed to promote medication adherence to reduce risk of an adrenal crisis.

However, there are some major points of criticism:

1. The authors correctly state that the sample size was very small, thus the statistical power is limited. Differences with regard to gender or age which would be very interesting but cannot be analyzed.

2. How were the patient educated? What kind of HCP? (e.g. endocrinologist, gp)

3. The authors state that „there is a lack of professional knowledge of the signs and symptoms" (ll. 374,399) of AI and that there is a need for health professionals to be educated and to promote timely diagnosis and appropriate emergency management (ll. 565-566). This topic was evaluated by Kampmeyer et al. (Kampmeyer et al.; Eur J Int Med 2016;33:e13-15; Kampmeyer et al; Eur J Int Med 2016;35:e27-28; Kampmeyer et al.; Endocrine J 2017; epub ahead of print). The missing literature should be added to the manuscript and references.

4. Ll. 441-442: „Our study confirmed that patients have a good knowledge base of PAI and replacement medication which contrasts a number of studies that have highlighted knowledge deficits of AI,..." However, detailed information about the existing knowledge is missing (e.g. knowledge about signs of underreplacement, definition of stress...).

5. Ll. 563-564: „Future studies should explore the reasons underpinning this lack of application in knowledge in order to develop appropriate interventions". It would be nice to have some more discussion about the reasons and possible interventions (problems in interaction with HCPs?) .
In conclusion, the topic of this paper is interesting but should undergo the mentioned changes. Some results may be novel; however, due to the very small sample size informative content is limited.

Score: major revision

**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.

Yes

**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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If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

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