Reviewer’s report

Title: A descriptive study of adrenal crises in adults with adrenal insufficiency: increased risk with age, in women and in those with bacterial infections

Version: 1 Date: 14 July 2014

Reviewer: Mark Sherlock

Reviewer’s report:

Dear Editor

Many thanks for asking me to review the manuscript by Rushworth et al. The paper is well written and covers an interesting area, namely the rates of adrenal crisis in a large population based on an admitted patient data collection registry. The authors look for any particular factors that make adrenal crisis more likely such as age and gender and also assess the co-morbidities (or precipitating factors) associated with adrenal crisis.

Comments and revisions:

Background:

1. Lines 70-72 – the point regarding lower doses possibly being associated with increased risk of adrenal crisis is interesting. As this has been the practice in more recent years have there been any temporal changes in rates of adrenal crisis eg 2000-2005 vs 2005-2010. This may be offset by increased awareness among patients and clinicians regarding the appropriate management of patients with adrenal insufficiency mainly due to patient support group activities.

Methods:

1. Who codes the data and on what information is it based? Is it based on hospital discharge summaries? If this is the case there may be a significant under reporting of adrenal crisis, given the known limitations of this data and this should be discussed in detail.

Results:

1. There is significant duplication and repetition between the results section and table 1 and 2, which summarizes the data nicely.

2. It would be ideal if a note of how many patients had multiple admissions would be possible as it is often the case that a single patient may add several data points due to compliance issues etc. - this may note be possible given the database limitations.

3. The gender difference in adrenal crisis of 62.5% female to 37.5% male makes it look like females with adrenal insufficiency are more prone to adrenal crisis but this may not be the case as there is a gender bias towards females in the rates of autoimmune adrenal insufficiency. (often quoted as 2.5:1) and as such males may be more prone relative to the smaller number of patients. This should be
4. As patients get older no matter what the underlying diagnosis the rates of need for hospital admission is higher

5. Malignancy and cardiac disease frequency is always associated with increasing age and as such has little to do with adrenal insufficiency per se and as such this data could be omitted.

6. Is it possible in the dataset to assess mortality in tertiary referral centres compared to smaller centres.

Discussion:
1. Line 222 – in all medical conditions older patients have higher rates of admission

2. Line 233 – ‘we believe from clinical experience…..’ does this relate to patients with secondary adrenal insufficiency? This is not clear in the text.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that i have no competing interests