Insights from Short Synacthen Test Experiences

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Introduction:

The short synacthen test (SST) is most commonly used to assess cortisol reserves and diagnose adrenal insufficiency (AI). However, it is an expensive test, and the appropriateness of its prescription is often questioned.

Objective :

The aim of this study is to evaluate the contribution of the SST for suspected cases of AI.

Material and methods:

This is a retrospective descriptive study conducted over a period of 1 year between November 2022 and 2023. All requests for the SST were recorded. The standard protocol involved intravenous administration of 250 µg of Synacthen, followed by cortisol measurement at T30 and T60 minutes. The SST was considered positive with a normal response if cortisol levels at T30 were > 500 nmol/L. Low cortisol levels (LCL) were defined as < 133 nmol/L. Cortisol measurement was performed using the electrochemiluminescence method on the Cobas 6000 analyzer.

Results :

- In total, **208** SSTs were recorded.
- The mean age : **42 ± 13** years .
- Sex ratio (F:M) : **2.5 (figure 1)**.
- In more than two-thirds of cases, clinical indicators were hypoglycemia and hypotension.
- Biochemically, hyperkalemia and hyponatremia were reported in **12%** and **18%** of cases, respectively.
- Hypoglycemia was confirmed in only two patients.
- The SST was prescribed in cases of LCL in **29.4%** of instances.
- In **36.3%** of situations with LCL, the SST confirmed AI.
- For the established diagnostic threshold, **43.2%** of SSTs were negative, with **32.6%** having a baseline cortisol level of **290.56 ± 103.34** nmol/L **(figure 2).**
- The peak cortisol level was observed at **T60** in **27.8%** of cases.

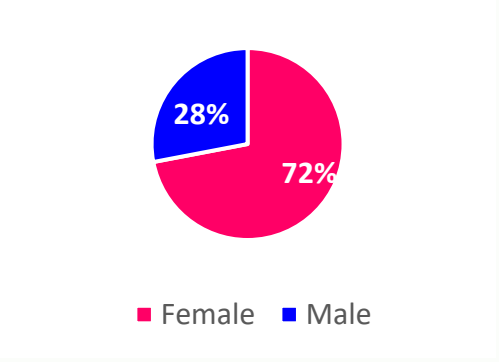

Figure 1: Distribution of patients by gender

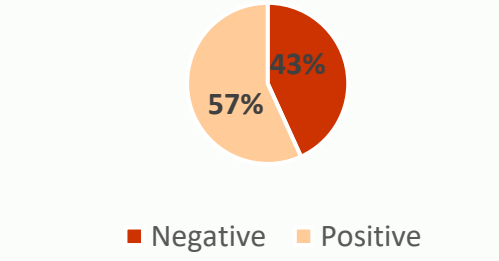

Figure 2: Results of the SST based on the Established Diagnostic Threshold

Discussion and conclusion :

Various parameters influencing the response to the SST are discussed in the literature. This is partly due to the lack of consensus on defining the diagnostic threshold or the baseline cortisol level below which the SST would be indicated.