A review of short synacthen test results: What is the cut off?

Amy Frank1, Colin Perry2 and Karen Smith1
1Clinical Biochemistry, Glasgow Royal Infirmary, 2Clinical Endocrinology, Queen Elizabeth University Hospital

Background and aims

• The short synacthen test (SST) is a dynamic function test used to assess the hypothalamic pituitary adrenal axis.
• Interpretation requires consideration of sample timing and cortisol method.
• Currently the 30 minutes post-synacthen cortisol (CORT30) at NHS Greater Glasgow and Clyde (NHS GGC) is >450 nmol/L measured on the Abbott Architect.
• A large reference range study published a cut-off of >430 nmol/L for this method.1
• This audit aims to document clinical outcomes of patients with results in the range 430-450 nmol/L.

Method

• SST requests were identified from laboratory databases at NHS GGC for six months beginning 01/05/2017.
• Tests with CORT30 430-450 nmol/L accounted for 3.4% requests (53/1573).
• Requests with CORT30 430-450 nmol/L were selected for further analysis to include:
  • reason for request
  • steroid status prior to test
  • outcome/clinical management of the patient post test

Results

Reason for requests

• Clinical details with initial requests were reviewed.
• A variety of reasons were noted, most commonly steroids for another condition.

Outcome in patients not on steroids initially

• Outcomes for 35/53 patients who were not on steroids prior to testing are shown in figure 3.
  • 71% did not require any steroid therapy

Repeat requests

• Repeat SST was performed in 13 patients within 6 months of borderline test.
• A further 4 patients had a repeat SST planned but not performed.

Conclusion

• SSTs with results 430-450 nmol/L account for 3.4% of all requests.
• Repeat testing was performed or planned in 32% of these cases.
• Findings were reviewed by the endocrinology team and the 430 nmol/L cut-off has been implemented.

References


Figure 1. Frequency of request reason for short synacthen test requests

Figure 2. Classification of patient outcomes following borderline short synacthen test in patients who were prescribed steroids prior to test.

Figure 3. Classification of patient outcomes following borderline short synacthen test in patients who were not prescribed steroids prior to test.

Figure 4. Outcome of repeat short synacthen testing

<table>
<thead>
<tr>
<th>Patient Outcome</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>62%</td>
</tr>
<tr>
<td>Abnormal</td>
<td>15%</td>
</tr>
<tr>
<td>2 repeats (Normal/Abnormal)</td>
<td>15%</td>
</tr>
<tr>
<td>2 repeats abnormal</td>
<td>8%</td>
</tr>
</tbody>
</table>