Implementation of Rapid Cortisol During Adrenal Vein Sampling

To the Editor:

We read with great interest the consensus statement on adrenal vein sampling (AVS) by Rossi et al., particularly their discussion of rapid cortisol. We recently implemented rapid cortisol during AVS and found it to be a valuable asset in the performance of this essential, but challenging, diagnostic procedure.

Before rapid cortisol, our center had a 50% AVS success rate during a 20-month period (n=12) with all the failures because of difficulties cannulating the anatomically challenging right adrenal vein. Spurred by the work of others., we introduced rapid cortisol 12 months ago. Logistically, this change reduced the sample size (10–4 mL) and required a laboratorian to transport and process samples immediately. These changes allowed us to achieve a 1-hour turnaround time.

With rapid cortisol, we have achieved an 89% success rate (n=9) in diagnostic sampling of the right and left adrenal veins. In 4 cases, initially low cortisol levels led the interventional radiologist to seek and find the correct vein (Table). Consistent with published findings, we found AVS essential to patient management, being discordant with imaging 50% of the time. Patient 6 illustrates the value of AVS and importance of rapid cortisol. This patient underwent a failed AVS at an outside institution 5 years prior. Without conclusive biochemical data, the patient was managed medically. Successful AVS at our institution proved the activity of an adrenal adenoma identified on computed tomographic scans. The patient underwent adrenalectomy, with subsequent normalization of blood pressure.

Rapid cortisol improves the success rate of AVS but requires certain logistical considerations. However, given the importance of AVS and the impact rapid cortisol can have on its success rate, we support the expert recommendation for its routine use. The logistical considerations are surmountable; cortisol assays are widely available, and most medical centers can rapidly deliver samples to their laboratories. The requirement for a dedicated laboratorian is really an opportunity for laboratory medicine departments to further contribute to patient care.

Disclosures

None.

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Table. Results of AVS With Rapid Cortisol

<table>
<thead>
<tr>
<th>Patient</th>
<th>Successful AVS</th>
<th>Need to Redraw</th>
<th>Agreement With Imaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
<td>Yes</td>
<td>Disagree</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
<td>Yes</td>
<td>...</td>
</tr>
<tr>
<td>3</td>
<td>Yes</td>
<td>No</td>
<td>Disagree</td>
</tr>
<tr>
<td>4</td>
<td>Yes</td>
<td>No</td>
<td>Disagree</td>
</tr>
<tr>
<td>5</td>
<td>Yes</td>
<td>Yes</td>
<td>Agree</td>
</tr>
<tr>
<td>6</td>
<td>Yes</td>
<td>Yes</td>
<td>Agree</td>
</tr>
<tr>
<td>7</td>
<td>Yes</td>
<td>No</td>
<td>Disagree</td>
</tr>
<tr>
<td>8</td>
<td>Yes</td>
<td>No</td>
<td>Agree</td>
</tr>
<tr>
<td>9</td>
<td>Yes</td>
<td>Yes</td>
<td>Agree</td>
</tr>
</tbody>
</table>

Successful AVS was defined as an adrenal/peripheral cortisol ratio >4. Disagreement with imaging means elevated cortisol-corrected aldosterone ratio from the adrenal gland without a nodule. AVS indicates adrenal vein sampling.

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Hypertension. 2014;63:e88; originally published online February 24, 2014;
doi: 10.1161/HYPERTENSIONAHA.113.03064

Hypertension is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 0194-911X. Online ISSN: 1524-4563

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http://hyper.ahajournals.org/content/63/4/e88

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