INTRODUCTION

- Cortisol is analysed for the diagnosis of hyper and hypoadrenocorticism, with Hyperadrenocorticism as the most common adrenal disorder in dogs, (Eden & Graves, 2020).
- The use of in-house analysers represents a point of success for clinics or veterinary hospitals, (Fernandes et al, 2020).
- It is crucial that the equipments are in accordance with the established prerequisites in terms of precision, accuracy, detection limit and quantification.

OBJECTIVE

- Validate the performance of a new in-house immunoassay based on Surface Plasmon enhanced Fluorescence method for canine cortisol measurement in serum.

Materials and Methods

- Serum Samples from 59 Clinical cases
- Dogs of different age, breed and gender
- With enough volume

RESULTS AND DISCUSSION

Table 1: Cortisol concentration obtained in Dri-Chem Immuno AU10V

<table>
<thead>
<tr>
<th>Method</th>
<th>Range (µg/dL)</th>
<th>SD</th>
<th>CV (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>intra-assay</td>
<td>High</td>
<td>17.9</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>9.9</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>13.0</td>
<td>0</td>
</tr>
<tr>
<td>inter-assay</td>
<td>High</td>
<td>27.6</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>13.4</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>8.6</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Intra and inter-assay CV was below 2%

Lower than 15% → High Precision

Detection limit was 0

Figure 1: Regression equation of all samples measured with the two methods (n=59)

Figure 2: Representative graph of linearity under dilution of a canine serum sample

Figure 3: Median and inter-quartile range concentration of cortisol before (T1) and after (T2) stimulation with ACTH.

The interpretation changed in one of the cases where hyperadrenocorticism was confirmed with Immulite (post-ACTH cortisol: 25.2 µg/dL), while with AU10V’s result was considered doubtful (post-ACTH cortisol: 21.5 µg/dL) when considering laboratory cutoff of 22.0 µg/dL for hyperadrenocorticism.

CONCLUSION

Overall, the validated method meant to be quick (approximately 10 min), precise and accurate when measuring cortisol in canine serum samples. It is important to note that there are slight method discrepancies in measuring cortisol thus diagnosis for hyperadrenocorticism should not be based solely on the cortisol results but as well as with the symptoms and other tests such as imaging.

References:

- ECVIM-CA 28th ANNUAL CONGRESS 6-8 SEPTEMBER 2018 ROTTERDAM, THE NETHERLANDS