

A cross-sectional study of sensitivity and specificity of late-night salivary cortisol in a single-centre heterogenous population.

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Introduction

- Current guidelines recommend using at least two biochemical tests to confirm Cushing's syndrome.¹
- Late-night salivary cortisol (LNSC) is considered accurate², simple and highly cost-effective³.
- However its validity is controversial⁴ and it remains the least commonly used test.⁵
- We report the specificity and sensitivity of LNSC against and in combination with other diagnostic tests, within a typically heterogenous cohort who were referred with symptoms of hypercortisolaemia to a single tertiary centre.

Methods

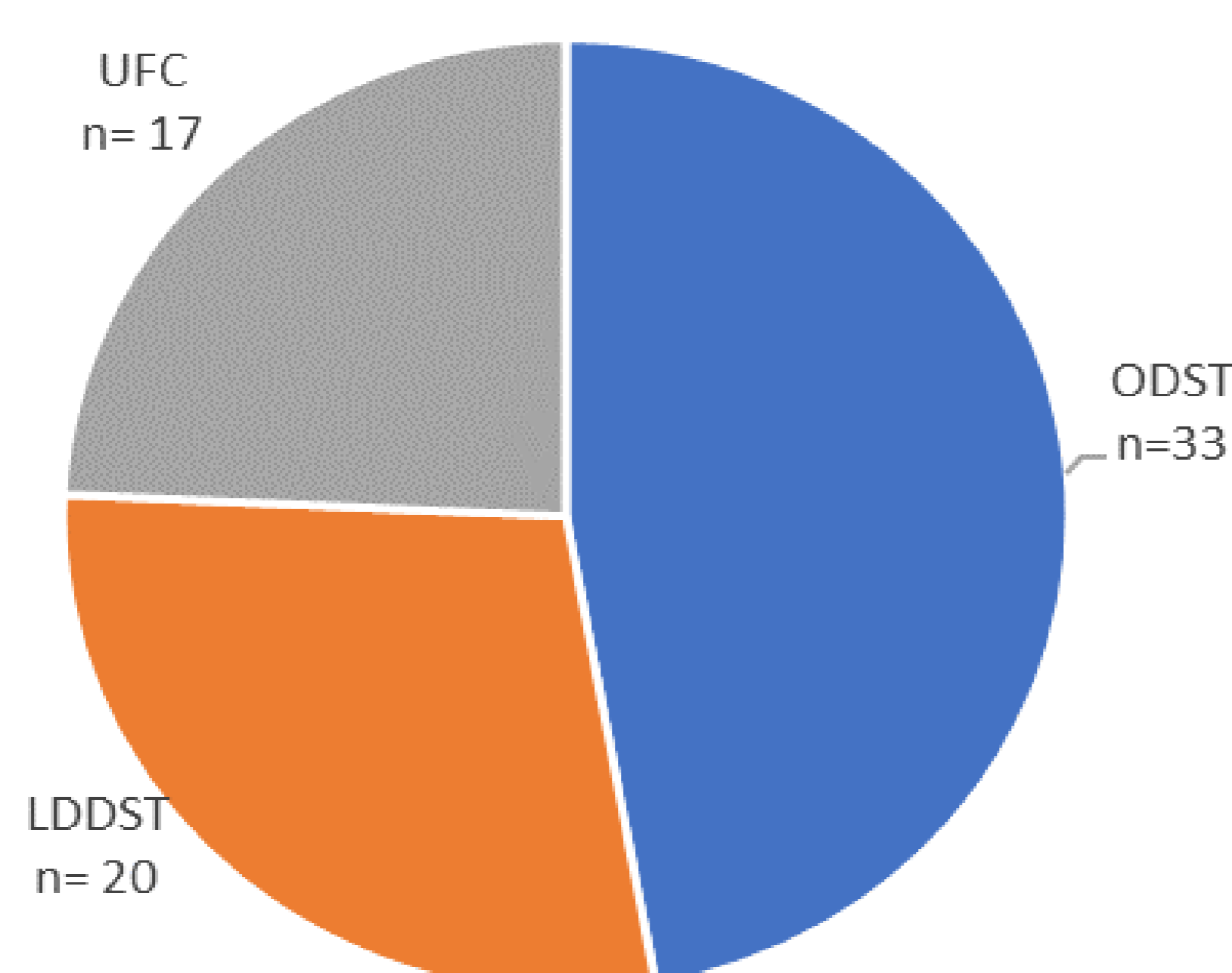
- Over a one-year period, a LNSC was requested for patients referred with suspected hypercortisolaemia.
- This was surplus to diagnostic tests believed suitable by the clinician, such as overnight- and 48- hour dexamethasone suppression tests (ODST and LDDST), and urinary-free cortisol measurement (UFC).
- 66 LNSC patient samples were received.
- Exclusion criteria included patients who were taking steroid-base medications at the time of study, patients diagnosed with sub-clinical Cushing's syndrome and those still awaiting diagnosis at time of study.
- Eligible samples were categorised into true hypercortisolaemia (n=22) or not (n=25), determined by response to treatment and/or diagnostic histology.
- Sensitivity and specificity of each test was calculated, separately and in combination.

Results

- Excluding LNSC, the most commonly used test was ODST.

Figure 1: Distribution of tests used for diagnosis.

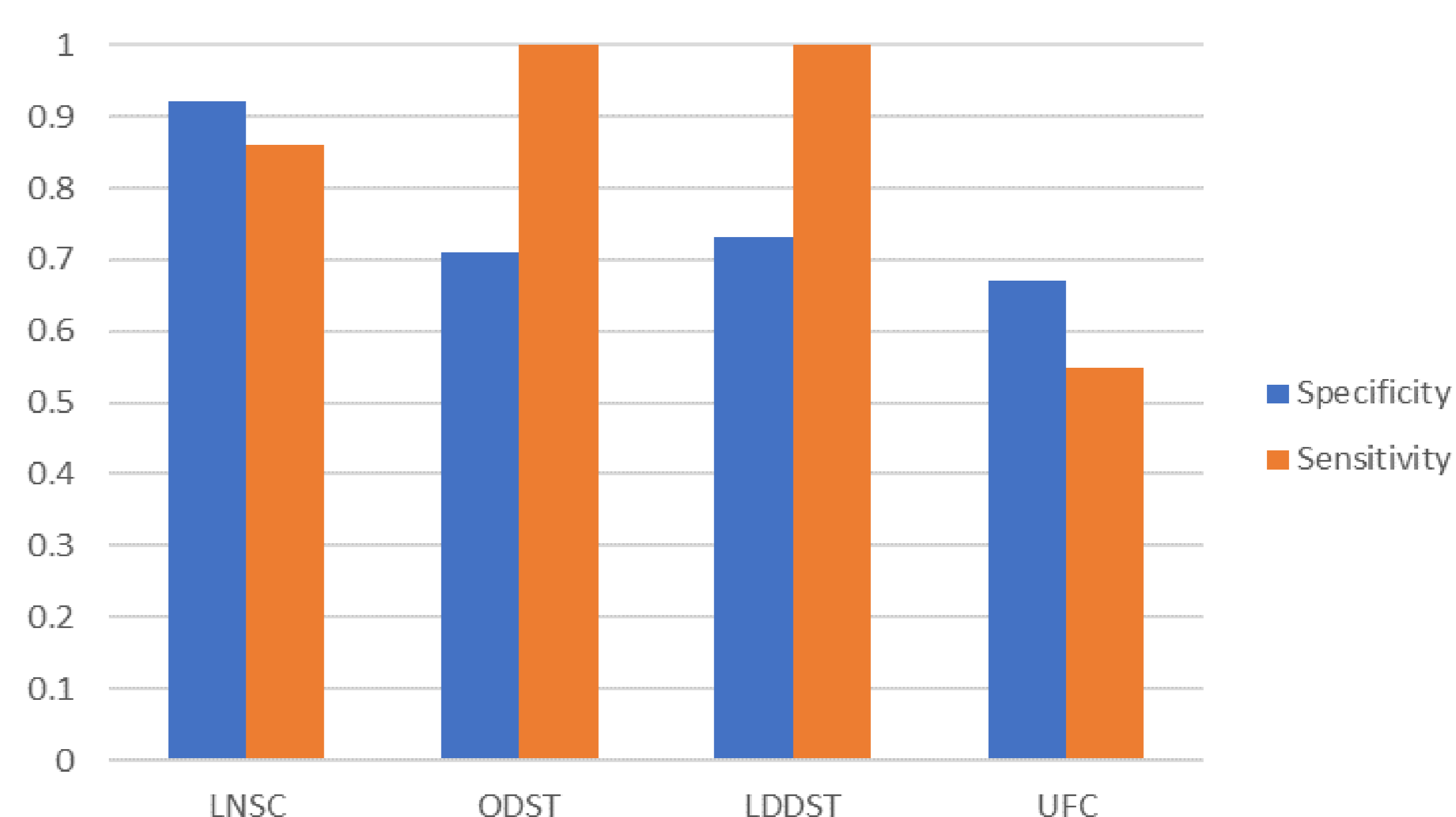
UFC= Urinary Free Cortisol. ODST = Overnight Dexamethasone Suppression Test. LDDST= Low Dose Dexamethasone Suppression Test.



- LNSC showed the highest specificity (92%) and LDDST/ODST showed the highest sensitivity (100% for both).

FIGURE 2: Specificities and sensitivities of each test.

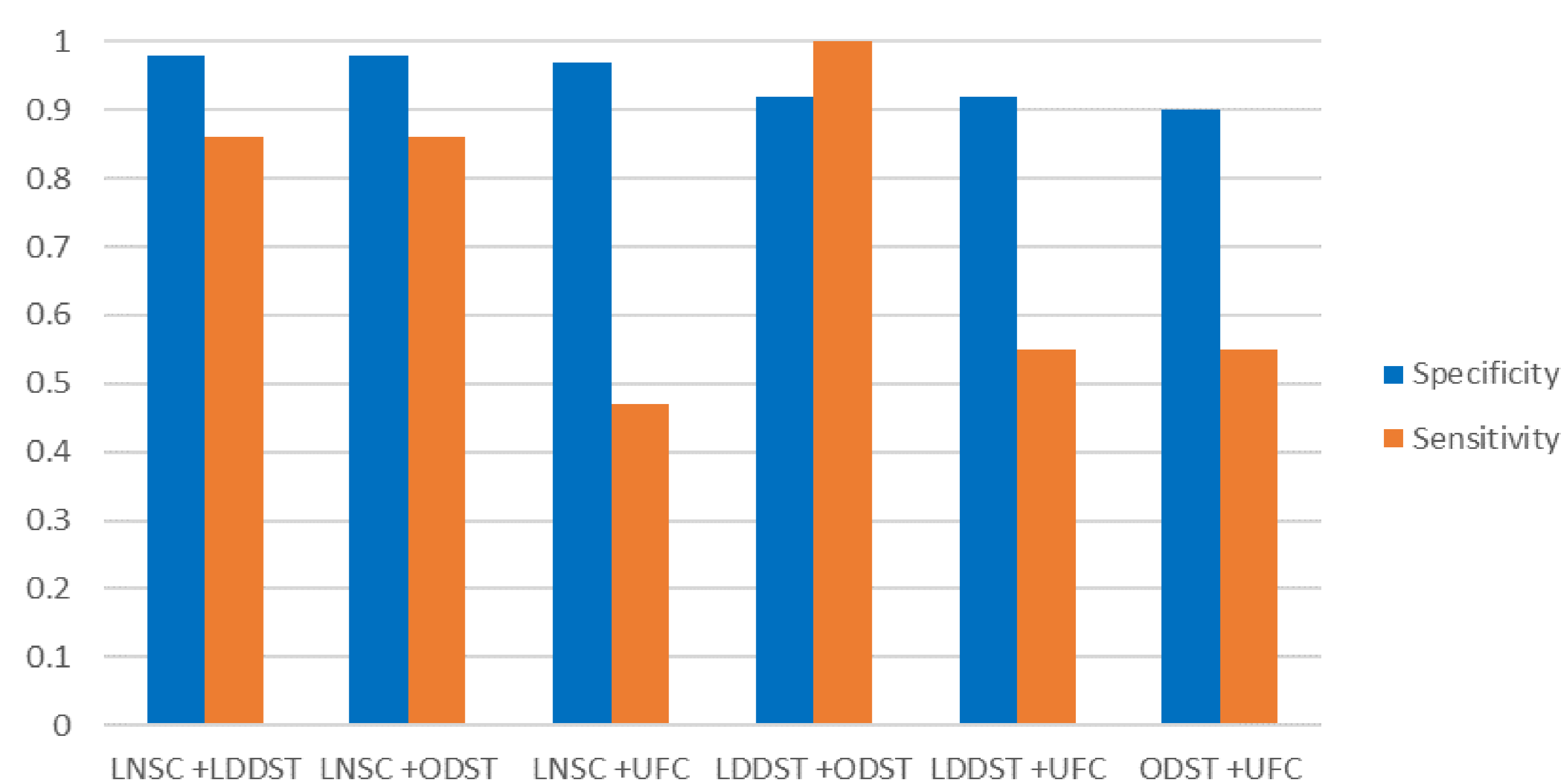
UFC= Urinary Free Cortisol. ODST = Overnight Dexamethasone Suppression Test. LDDST= Low Dose Dexamethasone Suppression Test.



- A combination of LNSC and LDDST or ODST suggests specificity of 98% and sensitivity of 86%. A combination of LDDST and ODST suggests specificity of 92% and sensitivity of 100%.

FIGURE 2: Specificities and sensitivities of combined tests.

UFC= Urinary Free Cortisol. ODST = Overnight Dexamethasone Suppression Test. LDDST= Low Dose Dexamethasone Suppression Test.



Conclusion

- These data suggests LNSC to have superior specificity for determining hypercortisolaemia.
- Furthermore, diagnostic combination of the combination of LNSC/ODST may be preferable to LDDST/ODST.
- Considering also cost-effectiveness and ease-of-use, these data suggests LNSC as an advantageous test for diagnosis of Cushing's syndrome.

References

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