

**PP-32****Insulin Tolerance Test versus Short Synacthen Test to Assess Hypothalamus-Pituitary Adrenal Axis in Patients Post-transsphenoidal Surgery**

<https://doi.org/10.15605/jafes.034.S44>

Yi Koon S, Kian Guan G, Sharizal Bin Shudim S, Hiryanti Binti Zakaria M

*Hospital Tengku Ampuan Afzan, Kuantan, Malaysia*

**INTRODUCTION**

Patients undergoing pituitary surgery are routinely given perioperative glucocorticoids as protection for hypocortisolism. Early post-operative assessment should be done to determine hypocortisolism. However, there is still uncertainty regarding the most appropriate test to assess the integrity of hypothalamus-pituitary-adrenal (HPA) axis. The insulin tolerance test (ITT) is the gold standard, but this can be distressing and resource-intensive. Recently, many have been advocating the use of conventional short Synacthen test (SST) as an alternative to ITT. Our objectives were to evaluate the feasibility of SST and ITT to assess the HPA axis integrity post-surgery.

**METHODOLOGY**

This was a retrospective study of 5 patients who underwent pituitary surgery requiring ITT or SST for HPA assessment from March 2018 until March 2019. For the ITT, appropriate cortisol response was considered as a peak cortisol value of >500 nmol/L with adequate hypoglycaemia (plasma glucose <2.2 mmol/L). For the standard SST test, appropriate cortisol response was considered as a 60-minute value >550 nmol/L.

**RESULTS**

All 5 patients underwent transsphenoidal surgery for nonfunctioning pituitary adenoma. Of these, 2 had undergone ITT successfully, while the remaining 3 patients were unable to achieve significant hypoglycaemia. They proceeded to the SST to assess HPA axis integrity.

**CONCLUSION**

While the ITT is the gold standard to determine hypocortisolism, achievement of proper hypoglycaemia is proven difficult, with a 60% failure rate. SST provides a suitable substitute for patients who are unable to achieve adequate hypoglycaemia during ITT. It is an easier alternative and less labour-intensive compared to ITT. The preference of the patient is also important. However, the specificity of the short Synacthen test at a supraphysiological dose of 250 µg needs further evaluation, as such dose may overstimulate partially atrophied adrenals, leading to falsely reassuring results.

**PP-33****Establishment of Reference Ranges for Serum Thyroid Function Tests for the Beckman Coulter Dxl-800 Analyzer in Hospital Putrajaya**

<https://doi.org/10.15605/jafes.034.S45>

Binti Anas SS,<sup>1</sup> Hanif E,<sup>1</sup> Suhaymin SA,<sup>1</sup> Nasruddin AB<sup>2</sup>

<sup>1</sup>Pathology Department, Hospital Putrajaya

<sup>2</sup>Medical Department, Hospital Putrajaya

**INTRODUCTION**

Thyroid status is best assessed biochemically by measurement of plasma thyroid stimulating hormone (TSH) and free thyroxine (FT4) concentrations. Free tri-iodothyronine (FT3) may be measured if T3 thyrotoxicosis is suspected. The laboratory diagnosis of hyperthyroidism depends on the demonstration of a high plasma concentration of FT4 with a suppressed TSH. The laboratory diagnosis of primary hypothyroidism depends on the findings of high plasma TSH concentration and low FT4 concentration. Accurate and reliable reference intervals are very important for proper diagnosis and patient management. Nearly 80% of medical decisions are made based on laboratory reports. Medical laboratories may choose to use reference ranges (RR) provided by the manufacturer of the reagents used to run such tests. However, the RR given by the manufacturer may not represent the biological variation of the local population. It is best to verify or establish the RR for the tests offered as these RR should represent the local population.

**METHODOLOGY**

A cross-sectional and prospective study involving healthy adults were done in Hospital Putrajaya in order to establish the RR for thyroid function tests. Eligible volunteers above 18 years old were invited and had their blood taken and analysed for TSH, Free T4, Free T3 and anti-thyroid peroxidase. These samples were analysed using the Beckman Coulter Dxl-800. The data collected were analysed using the SPSS version 22.

**RESULTS**

The results from data collected from the local population in Hospital Putrajaya showed correlation with the RR provided by the manufacturer. The study also showed a narrower TSH reference value for subjects age 40 and below.

**CONCLUSION**

This study showed that the RR of the local population in Hospital Putrajaya were similar to the RR provided by the manufacturer.