POSTER PRESENTATIONS

ADULT

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ACCURACY OF RANDOM SERUM CORTISOL IN DIAGNOSING SECONDARY ADRENAL INSUFFICIENCY

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INTRODUCTION
Adrenal insufficiency (AI) is defined as failure of the adrenal cortex to secrete adequate amounts of hormones. The Short Synacthen Test (SST) is a diagnostic test used to establish AI. Random serum cortisol may be a more practical and useful test for screening and diagnosing AI. The objectives of this study are to compare random serum cortisol with positive and negative SST and to evaluate the diagnostic accuracy of random serum cortisol at different cut off values.

METHODOLOGY
This is a 5-year retrospective study performed at three tertiary centers. A total of 111 subjects who underwent SST were identified. Primary AI was excluded in this study. Primary and secondary AI were differentiated based on serum ACTH. Positive SST refers to a patient who has confirmed diagnosis of secondary AI based on SST. Random serum cortisol was defined as a serum cortisol sample drawn at presentation. The association between random serum cortisol and positive SST levels were analysed through an independent sample T test. Diagnostic accuracy was evaluated by a receiver operating characteristic curve (ROC) analysis. Cut of values of random serum cortisol were determined using Youden Index.

RESULTS
Of the 111 patients who underwent SST, only 103 patients who fulfilled the inclusion criteria, and 53 (51%) were confirmed to have secondary AI. Mean random serum cortisol for positive SST was 143.86 ± 105.68 nmol/L. The ROC curve for the model assessing the diagnostic accuracy had an area under curve of 0.72 (95%CI 0.62-0.82). The cut off levels of random serum cortisol for were <80 nmol/L and <100 nmol/L. The cut-off of <100 nmol/L was noted to have the highest specificity at 98%, while optimal baseline serum cortisol of >400 nmol/L had the highest sensitivity at 98.1%

CONCLUSION
A random serum cortisol of <100 nmol/L is highly specific and very strongly associated with secondary AI.