

Determining the utility of the 60 minute sample in the short synacthen test

Aditi Chitale¹

Patrick Musonda¹

Alan McGregor²

Ketan Dhatariya^{1,3}

- 1. Norwich Medical School, University of East Anglia, Norwich, NR4 7TJ**
- 2. Department of Endocrinology, Suite 3, Golden Jubilee Wing, King's College Hospital NHS Foundation Trust, Denmark Hill, London, SE5 9RS**
- 3. Elsie Bertram Diabetes Centre, Norfolk and Norwich University Hospital NHS Foundation Trust, Colney Lane, Norwich, NR4 7UY**

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Corresponding author: Ketan Dhatariya, ketan.dhatariya@nnuh.nhs.uk, Tel No:

+441603 288170

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Abstract

Context: Despite the widespread use of the short synacthen test (SST), there remains no consensus on sampling times for the measurement of serum cortisol that best determines adrenal reserve.

Objective: To establish whether there is any value in measuring serum cortisol at 60 minutes following administration of synacthen.

Design: Retrospective data analysis of 500 SST results measuring 0, 30 and 60 minute cortisol levels after administration of 250µg of synacthen.

Setting: 2 large urban National Health Teaching Hospitals in the UK

Patients or Other Participants: Individuals thought to have primary or secondary adrenal insufficiency

Intervention: administration of 250µg of synacthen.

Main outcome measures: 0, 30 and 60 minute cortisol levels, looking to see how many people who had adrenal insufficiency at the 30 minute sample but in whom the 60 minute sample showed adequate adrenal reserve

Results: The results from 324 people were analysed. In 7% of people at one institution, and in 11% from the other, the 30 minute cortisol level was 'insufficient'

(i.e. <550 nmol/L), but had risen to ≥ 550 nmol/L at the 60 minute test. All individuals who were insufficient at 60 minutes were also insufficient at 30 minutes.

Conclusions: These results suggest that a significant proportion of people undergoing a SST may be inappropriately diagnosed as having adrenal insufficiency if the 60 minute sample is not measured. We suggest that the 60 minute sample is measured in all individuals having a SST to prevent unnecessary over-diagnosis of adrenal insufficiency.