

Should all short Synacthen tests be agreed by an endocrine team?

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Background

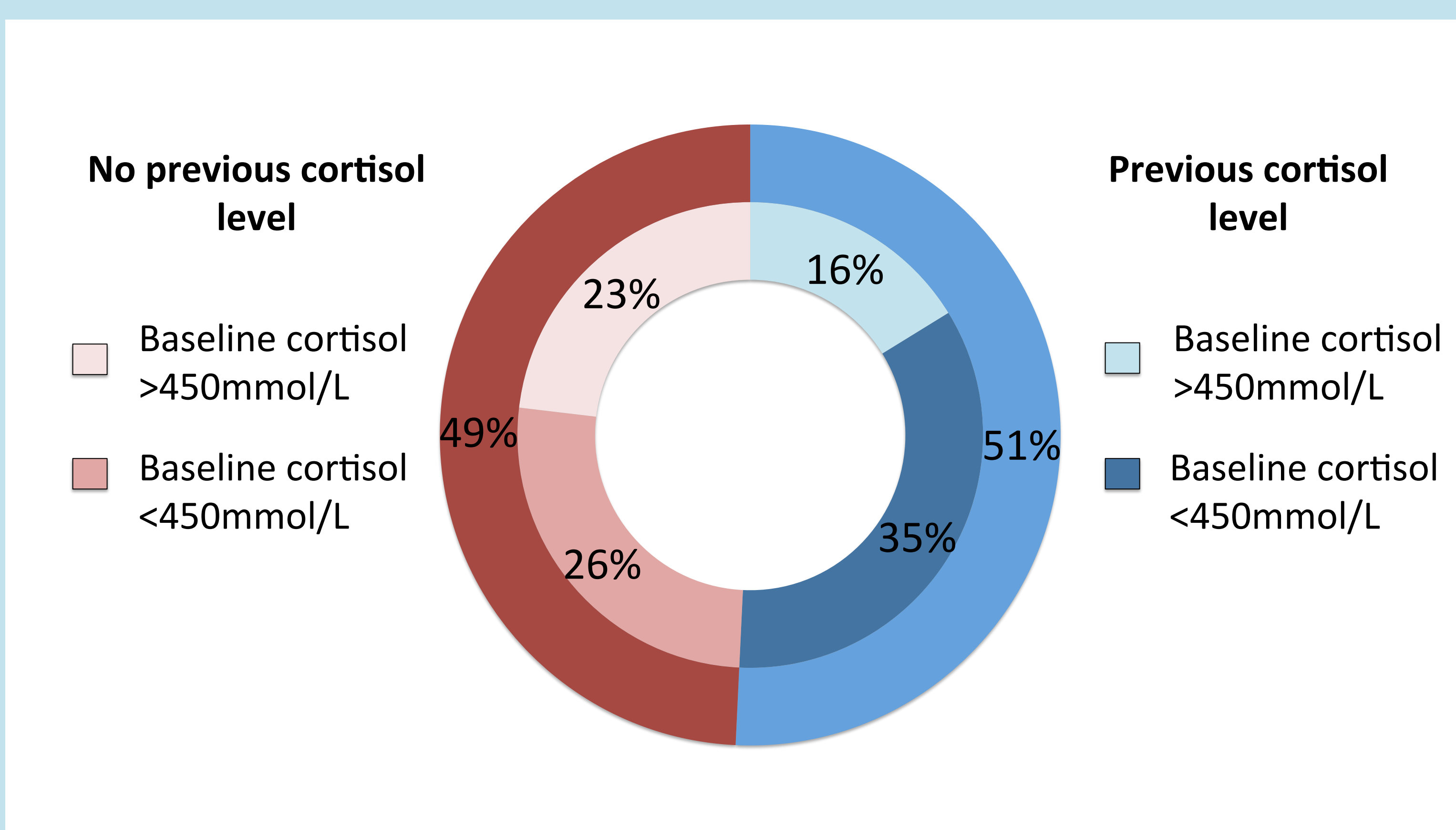
- Short Synacthen tests (SSTs) are used to assess adrenal function by injecting tetracosactide and measuring blood cortisol after 30 and 60 minutes.
- A 9am cortisol or random cortisol in an acutely unwell patient can be sufficient to assess adrenocortical function ¹
- Steroid therapy can interfere with the interpretation of an SST ²

Data

- Retrospective audit of 332 patients over 5 years undergoing SSTs at Royal Bournemouth Hospital
- 55% (182/333) of SSTs carried out at Bournemouth are performed outside of the endocrine department by non-endocrinologists
- Patients with prior cortisol measurement and those taking steroids whilst the test was performed were identified.

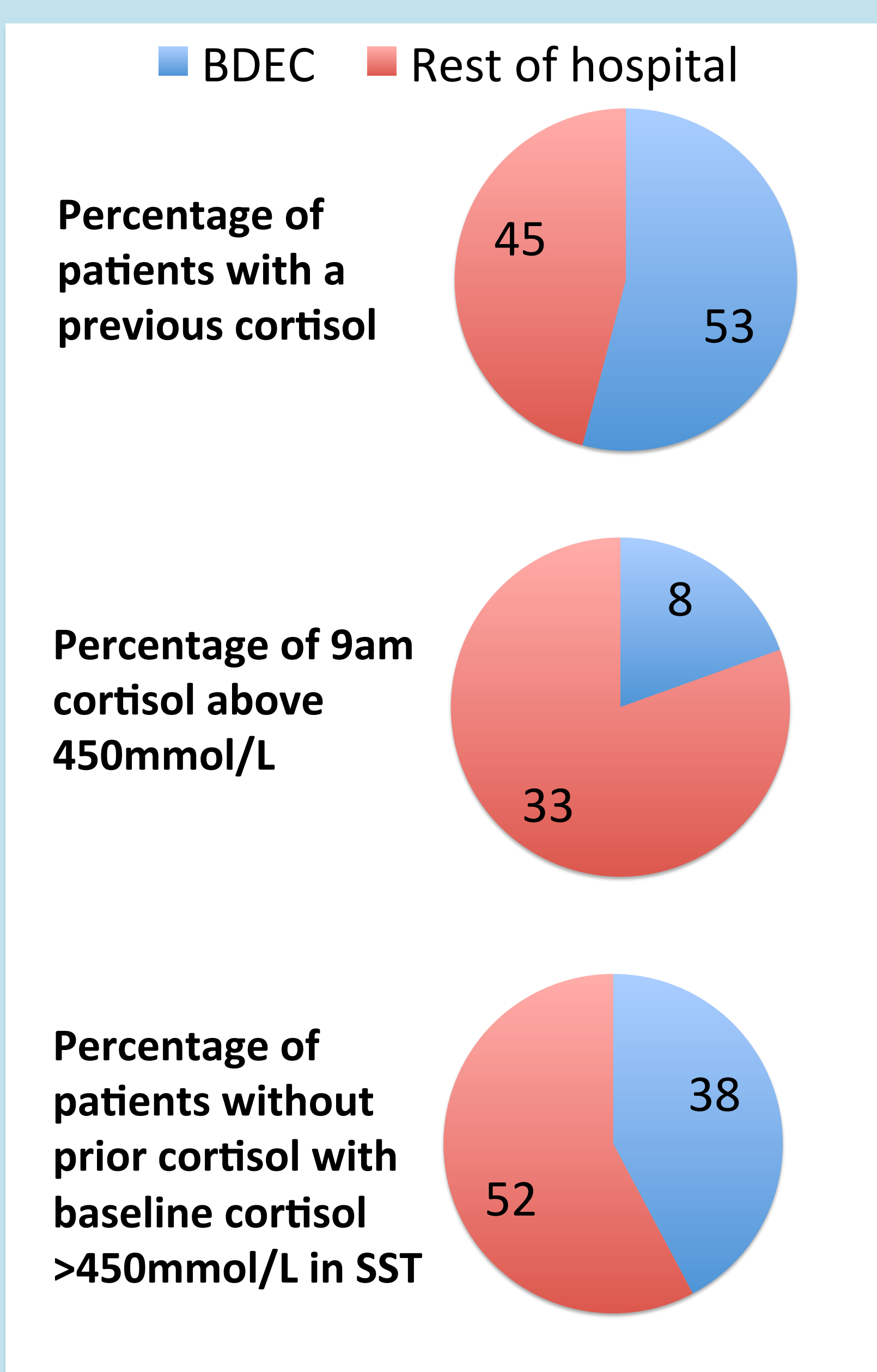
The use of prior cortisol measurements

Number of patients with prior cortisol measurement and subsequent analysis of basal cortisol level during SST



- 49% of patients had no previous cortisol measured
- A patient with a prior cortisol was less likely to have a basal cortisol >450mmol/L in the SST test
- Measuring basal cortisol levels could reduce unnecessary SSTs

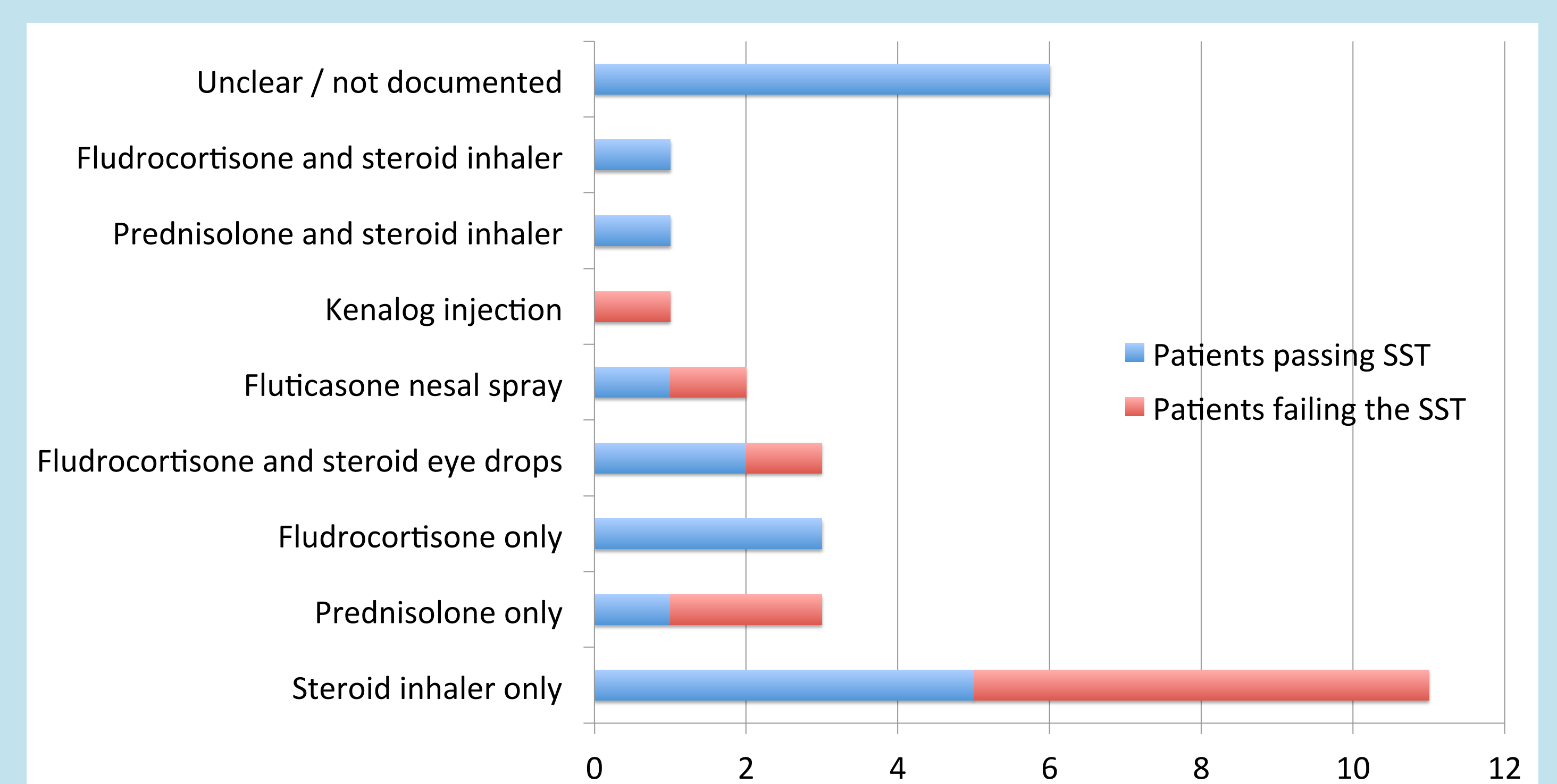
Are things any better in BDEC?



- BDEC performed more 9am and random cortisol measurements on patients before performing an SST (53% Vs. 45%)
- BDEC performed many less SSTs on patients with a sufficiently high previous cortisol level to rule out adrenal insufficiency (8% Vs. 33%)
- Fewer of the patients investigated in BDEC without prior cortisol levels were found to have a raised basal cortisol in the SST (38% Vs. 52%)

Steroid use during the SST

Number of patients on steroid therapy undergoing an SST



- 19% (25/130) of non-BDEC patients were on steroid therapy.
- 44% (11/25) of patients on steroid therapy failed the SST

Conclusion

- Only half of the patients studied had a prior 9am or random cortisol.
- Many of these cortisol readings would have been sufficient to rule out adrenal insufficiency and so avoid an unnecessary SST
- BDEC was slightly more efficient at using 9am or random cortisol levels to select patients for subsequent SSTs
- A large proportion of patients undergoing an SST outside of BDEC were on steroid therapy (almost half of these patients subsequently failed the SST)
- All future SSTs at Bournemouth are now going to be discussed with the endocrine department
- With the cost of tetracosactide rising almost 10 fold recently (£4.87 to £45.71), the potential savings for the hospital are great

1: Yo W., Toh Li-Mae, Brown Suzanne, *et al.* 2014. How good is morning cortisol in predicting an adequate response to intramuscular Synacthen stimulation?. *Clinical endocrinology*. Vol 81: p19-25.

2: Henzen C., Suter A., Lerch E, *et al.* 2000. Suppression and recovery of adrenal response after short term, high dose glucocorticoid treatment. *Lancet*. Vol 355: p542-545