INTRODUCTION

- No evidence about the best timing of highest hydrocortisone (HC) dose in children and adolescents with 21OHD:
  - Highest dose in the morning (HM) aims to mimic the physiological rhythm of cortisol.
  - Highest dose in the evening (HE) may inhibit the early morning rise in androgens more effectively.

AIM

Evaluate two standard HC treatment regimens (HM and HE) with respect to hormonal status throughout the day for children and adolescents with 21OHD.

METHOD

Study design: 6-week cross-over

- n=39
- 4-19 years
- 21OHD

Primary outcome measure:
- Saliva 17OHP and A4 at four timepoints during the last two consecutive days of each period

Secondary outcome measures:
- Daily subjective activity and sleep scores
- Nocturnal blood pressure end each period

RESULTS

HE resulted in more effective inhibition of the 17OHP rise at 5.00h (p<0.01), whereas a HM resulted in more effective 17OHP (p=0.02) and A4 inhibition at 15.00h (p=0.01; linear mixed effect regression analysis).

CONCLUSIONS

HM and HE were comparable with respect to overall daily hormonal control, nocturnal blood pressure, and subjective activity and sleep scores.

Recommendations:
- Individually determine best timing of highest dose based on steroid levels at multiple timepoints.
- If, for a patient, HM and HE are comparable regarding hormonal control, follow the more physiological HM regimen.

ACKNOWLEDGEMENTS

We would like to thank all patients and their caretakers for participation in this study. We acknowledge Spacelabs Healthcare and Itémédica for the use of their ambulant blood pressure monitoring systems. This study was funded by ‘Innovatiefonds Zorgverzekeraars’.

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