

Comparison of 17-OH progesterone response to various doses of tetracosactid.

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OBJECTIVES

ACTH test is widely accepted as diagnostic tool in suspicion on peripheral as well as on central hypocorticism. The optimal dose of tetracosactide for determination of hypocorticism is still matter of debate.

250 mcg as a standard dose of tetracosactide has been approved for diagnosis of congenital adrenal hyperplasia (CAH) many years ago. Moreover, current limited availability of tetracosactid and its increased financial cost on the market raised the question whether the lower dose of tetracosactid for diagnosis of CAH may be sufficient stimulus.

AIMS and METHODS

Aims: To compare response of 17-OH progesterone to various doses of tetracosactid in healthy volunteers.

Methods: In 10 healthy volunteers (4 males, median 42 years) with normal adrenal function (based on clinical and biochemical evaluation) the ACTH tests with intravenous administration of 250 mcg (HDST), 10 mcg (MDST) and 1 mcg (LDST) tetracosactid were performed.

RESULTS

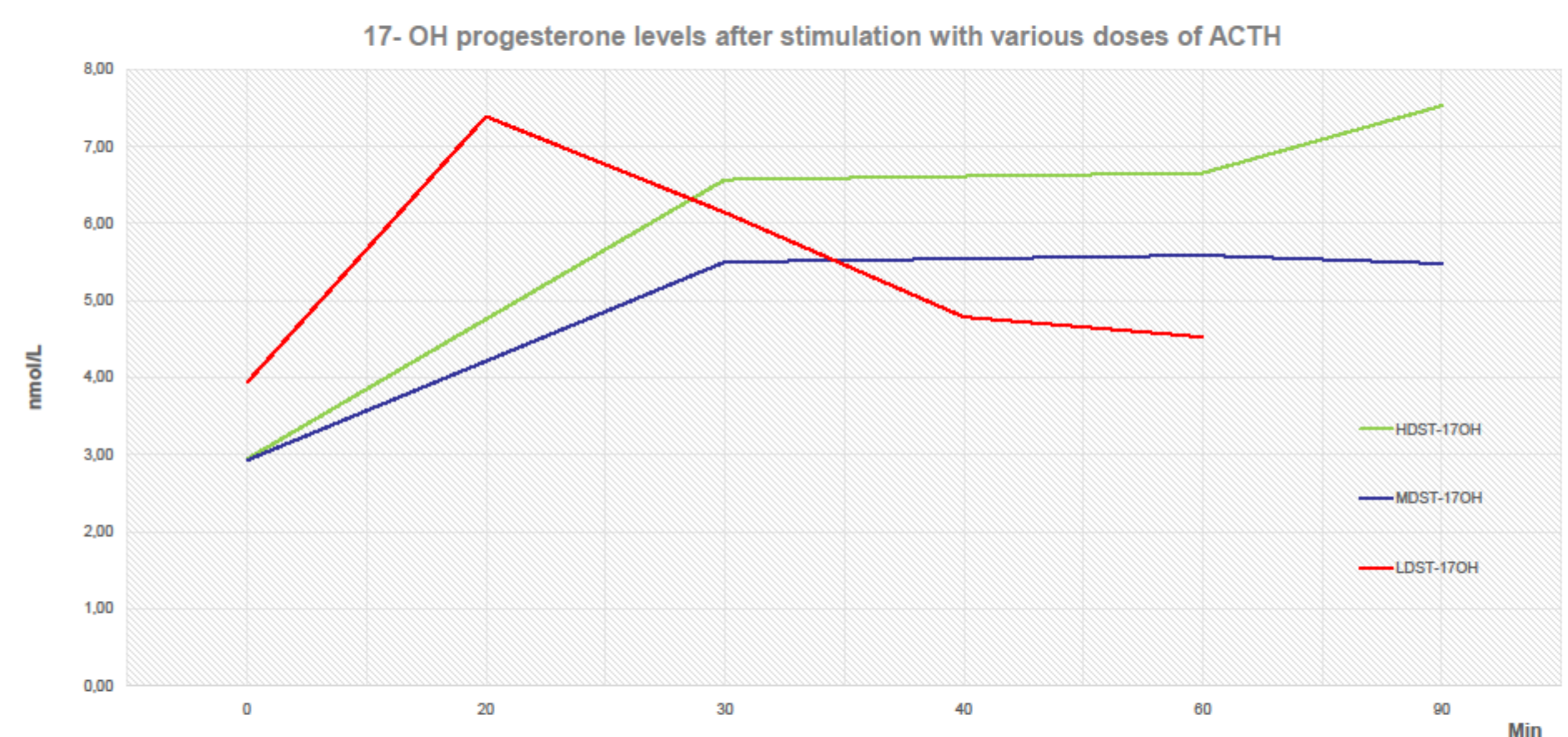
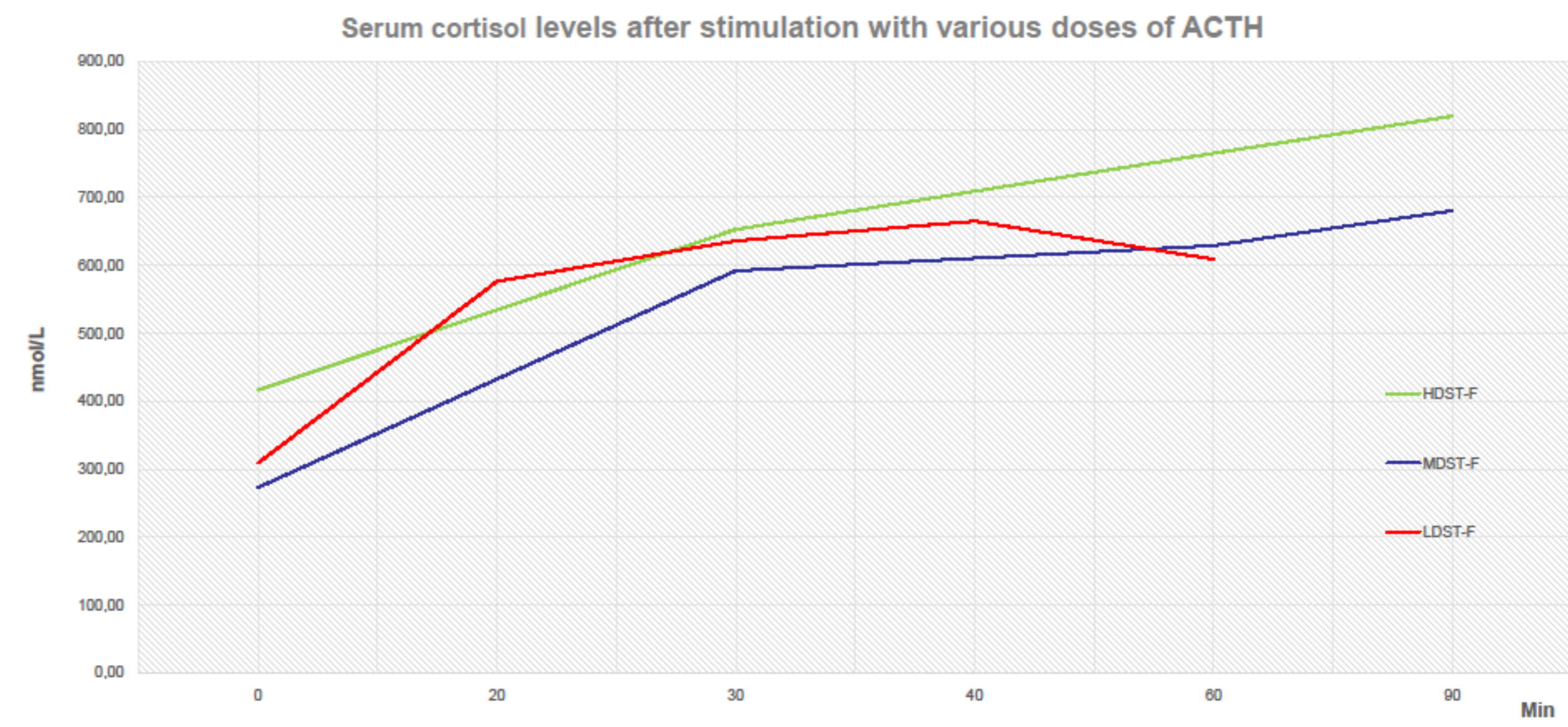
Similar responses in 17-OHP levels in all three variants of the test were observed. Median 17-OHP levels 30 minutes after the tetracosactid administration were 6,62; 6,62 and 5,68 nmol/L for HDST, MDST and LDST, respectively. 60 minutes after the administration the median levels were 6,93; 5,91 and 4,70 nmol/L.

Serum cortisol and 17-OH progesterone levels after the stimulation – expressed as median with quartiles.

HDST (250 mcg)				
Min.	0	30	60	90
Serum cortisol (nmol/L)	416.1 (336; 462)	653 (625; 802)	765.1 (723; 910)	819.8 (766; 940)
17- OH progesterone (nmol/L)	2.94 (2.5; 7.7)	6.57 (4.5; 7.5)	6.66 (5.6; 10.4)	7.53 (5.6; 9)

MDST (10 mcg)				
Min.	0	30	60	90
Serum cortisol (nmol/L)	272.6 (242; 324)	592 (541; 652)	628.9 (596; 753)	680.6 (546; 781)
17- OH progesterone (nmol/L)	2.93 (1.2; 4.3)	5.5 (4.2; 7.7)	5.59 (4.3; 7.3)	5.48 (4.1; 6.5)

LDST (1 mcg)					
Min.	0	20	30	40	60
Serum cortisol (nmol/L)	308.4 (236; 386)	576.3 (560; 702)	636 (598; 727)	664.9 (610; 737)	609 (500; 681)
17- OH progesterone (nmol/L)	3.94 (1.6; 4.5)	7.39 (4.9; 8)	6.14 (4.1; 6.8)	4.79 (3.5; 5.4)	4.53 (4; 5.7)



CONCLUSIONS

Our data support the hypothesis of ACTH test reliability for the diagnosis of CAH in all variants with lower doses of ACTH compared to standard dose. Particularly the variant with 10 mcg of tetracosactid shows very similar results in comparison with 250 mcg of tetracosactid. Nevertheless this should be confirmed in patients with CAH.

Acknowledgement

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