

Overnight Dexamethasone Suppression Test: a valuable measure of medical treatment efficacy in ACTH-dependent Cushing's Syndrome

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INTRODUCTION

Cushing's syndrome (CS) response to medical treatment is based on:

- Remission of clinical signs and symptoms
- UFC (24h urinary free cortisol) measurement, although wide variation could lead to inconclusive results.
- Basal plasma cortisol levels

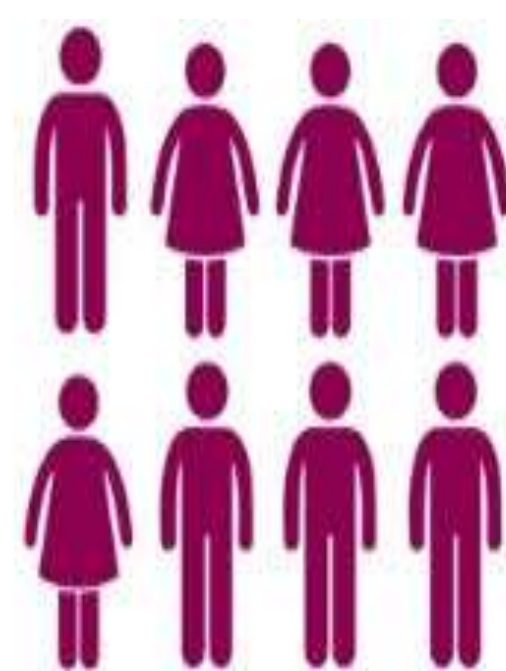
ODST reflects the ability of corticotropic cells to downregulate the ACTH release when glucocorticoid levels are high, but this negative feedback is abolished in CS due to prolonged glucocorticoid exposure.

AIM

The purpose of this study is to explore whether **ODST** can be used as an **index** of CS remission under medical treatment, and as a guide during dose titration period in ACTH-dependent CS.

METHODS

7 patients with ACTH-dependent CS (1 ectopic) were on medical treatment. **UFC, ODST, morning plasma cortisol** were collected retrospectively, along with data of the metabolic profile and the clinical signs and symptoms



	Gender	Age	Cause of hypercortisolism	Surgical treatment	ODST µg/dl before medical tr.	UFC (xULN)	Medical treatment	Remission of symptoms
Patient 1	m	60	CD	yes (7 years before)	>1,8	1,3	MTY 250mg 1-0-1	full
Patient 2	m	76	CD	no	6,05	1,2	MTY 250mg 2-1-2	full
Patient 3	f	58	ES	no	13	1,7	SOM230 300mg 1-0-1	full
Patient 4	f	68	CD	no	14,5	1,1	MTY 250mg 1-1-2	full
Patient 5	f	51	CD	no	18,8	1,6	MTY 250mg 1-0-0	partial
Patient 6	f	74	CD	no	30,98	1,6	MTY 250mg 1-1-1	partial
Patient 7	f	76	CD	no	16,1	1,7	KCZ 100mg 1-0-1	partial

* CD = Cushing's Disease EC = Ectopic Cushing
MTY = Metyrapone KCZ= Ketoconazole SOM230= Pasireotide

RESULTS

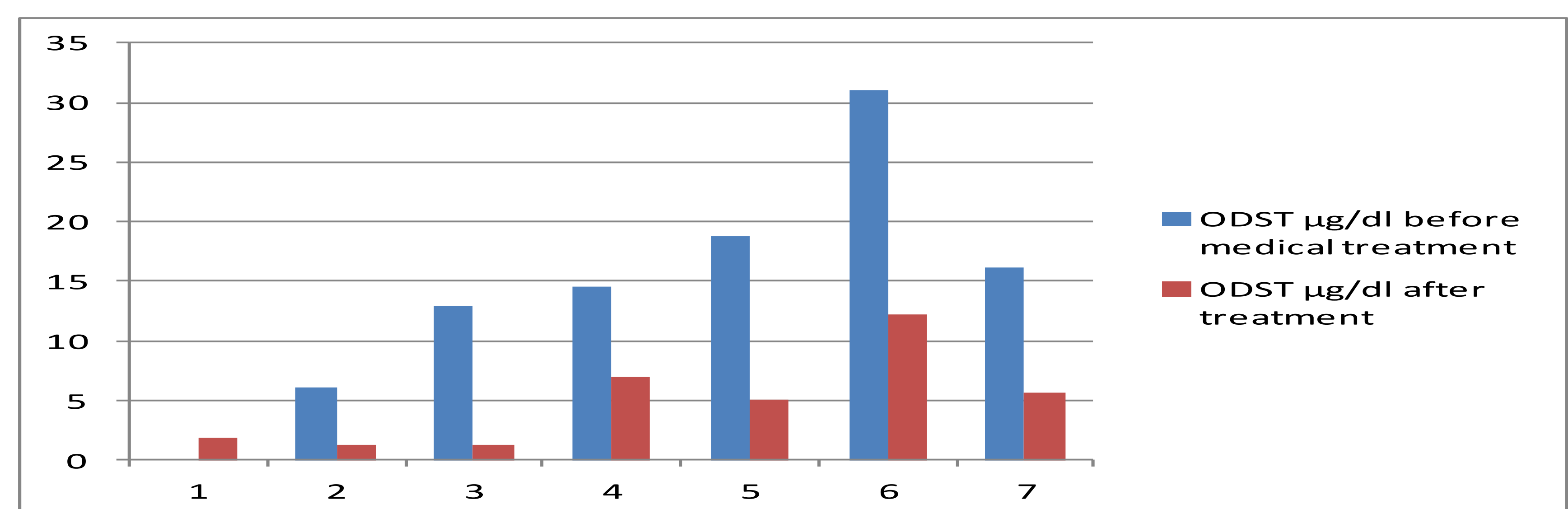
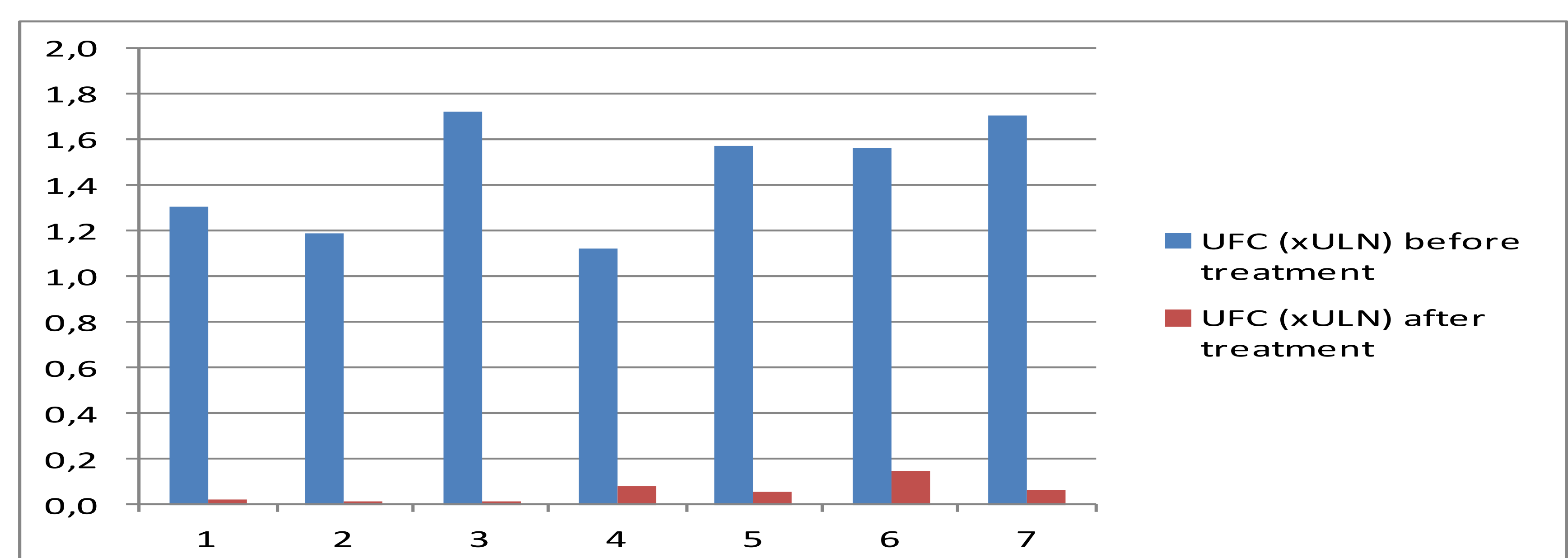
In 6 patients pharmacotherapy with steroidogenesis inhibitors or pasireotide was the primary treatment and in 1 patient, metyrapone was initiated 7 years post-pituitary surgery due to recurrent disease.

6 patients received metyrapone, 1 ketoconazole and 1 pasireotide.

While on treatment, all 7 patients normalized UFC with a reduction range of 37%-128%. Similarly, all patients showed a reduction in post-dexamethasone cortisol levels by 52-91%. 3 patients completely normalized post-dex cortisol levels (<1.8 mcg /dl) and another 3 showed a significant (>50%) decrease with levels of 5-6.9 mcg/dl.

Interestingly, normalization of ODST was associated with complete clinical response.

ODST µg/dl after treat.	ODST % decrease	UFC(xULN) after treat	UFC% difference
1,8		0,02	52
1,19	80,3	0,01	52
1,2	90,8	0,01	113
6,9	52,4	0,08	37
5	73,4	0,06	82
12,2	60,6	0,14	111
5,58	65,3	0,07	128



CONCLUSION

Although, this is a preliminary study, ODST emerges as a useful **“biochemical”** and **“biological”** marker countering the variability of UFC measurements.