

## Exogenous Cushing's Syndrome-A Treatment Padox

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### Abstract

*Cushing's syndrome (CS) is a condition caused by prolonged exposure to elevated levels of glucocorticoids either endogenous or exogenous. The most common cause of CS is exogenous and depends on frequency and spectrum of medical condition which require glucocorticoid treatment. Exogenous CS is usually identified on the basis of history and laboratory studies. In our case a 55-year old female presented with complains of generalized weakness, easy fatigability, joint pain, generalized body swelling and facial puffiness with recent history of hypertension and diabetes. On clinical examination, she had truncal obesity moon facies, acanthosis nigricans, truncal obesity, pedal edema and high blood pressure. On enquiry patient gives history consumption of some medications for joint pain since last 6 months. She had persistent hypokalemia and high blood sugars. So, on clinical and biochemical features exogenous CS was suspected. Her morning 8 am serum Cortisol levels were 0.96ug/dl which was strongly suggestive exogenous CS. The patient showed clinical and biochemical improvement after stopping of all other medications.*

**Keywords:** *Exogenous Cushing's syndrome; Cortisol; Hypokalemia*

### Introduction

CS is a systemic disorder characterized by sign and symptoms of prolonged exposure to elevated levels of glucocorticoids either from endogenous or exogenous source [1]. Prevalence of exogenous CS varies from population to population and depends on frequency of use of glucocorticoid in a given population according to frequency and spectrum of medical condition and is most common cause for CS but rarely discussed [2].

Here we report a case of exogenous CS, identified because of high clinical vigilance who presented to us with vague symptoms.

### Case Report

A 55-year old female presented to us in Medicine OPD with a history of generalized body swelling, weight gain, joint pain, weakness, easy fatigability, high blood pressure and high blood sugars for past 3 months. On enquiry she gave history of intake of some medications for joint pain since last 6 months

prescribed by local practitioner (details not available). Her symptoms didn't relive but the contrary her condition worsened with weight gain, onset of hypertension and high blood sugars, so she came to our tertiary care centre.

On clinical examination, she had Moon facies, hirsutism, acanthosis nigricans, hump over neck, truncal obesity, fungal infection over groin with sign of easy bruisability (**Figure 1a** and **Figure 1b**). There were no stria. She also had bilateral pedal edema. Her BP=170/100 mm of Hg and pulse rate was 80/min regular. Systemic examination was non-significant.

Her laboratory investigations showed persistent hypokalemia (Serum potassium <3.0 mEq/lit) and HBA1c was 6.4%. Rest routine investigations were within normal limits. Thus, with suspicion of exogenous CS her morning serum Cortisol levels was done which was suppressed with value of 0.96 ug/dl suggesting of suppressed hypothalamopituitary adrenal axis due to exogenous steroid supplementation. Thus, diagnosis of exogenous CS was made.

Patient was asked to stop all medications prescribed from outside practitioner. For hypertension she was given Here she was prescribed with Telmisartan 40 mg once daily for hypertension, Metformin 500 mg twice daily for high blood sugars and terbinafine 250 mg for fungal infection after dermatology consultation. She was explained about the symptoms and management of adrenal insufficiency.

Her hypokalaemia improved on 1<sup>st</sup> follow up at 1<sup>st</sup> week. Then on subsequent follow up her anti-hypertensive and anti-diabetic medications were also stopped.

Her blood sugars and blood pressure were normal without medications and was clinically stable on subsequent follow up without any medication. For joint pain she was referred to orthopaedic department where she was diagnosed with osteoarthritis and advised for calcium and vitamin D supplementation with oral bisphosphonate therapy. They also advised for knee replacement later.

## Discussion

Exogenous CS is not an uncommon disorder and accounts for most cases of CS. Clinical features of exogenous CS are not different from that of other forms of endogenous CS [2,3].

In exogenous CS the hypothalamic - pituitary - adrenal axis is suppressed because of exogenous glucocorticoids, thus serum cortisol and serum ACTH levels are suppressed [1,3]. Similar finding of suppressed morning cortisol was seen in our case.

Hypertension is more frequent with exogenous CS [2]. Similar finding was seen in our case.

Virilization and hirsutism is less frequently seen in exogenous CS because of reduced androgen synthesis from adrenal cortex because of suppressed ACTH from exogenous glucocorticoid. But in our case hirsutism was present may be because of postmenopausal hyperandrogenism [4].

Hypokalemia is less frequently seen in exogenous CS because synthetic glucocorticoids have poor mineralocorticoid activity [1,2]. In our case hypokalemia may be due the anti-hypertensive drugs which were prescribed outside.

There are no specific guidelines for withdrawal of glucocorticoid therapy causing exogenous CS. According to some authors if duration of glucocorticoid is less than 3 weeks than glucocorticoids can be abruptly stopped and if duration is more 3 weeks than stop the medication by reducing the dose in step wise pattern [1,2]. And in our case according to patient she was not very complaint to medications prescribed by practitioner and used to take twice or thrice in a week so abruptly stopped medications and explained sign and symptoms of adrenal insufficiency.

Steroids are commonly used by practitioners for several inflammatory conditions in various forms like oral, inhalational, injectable or topical form, which may be associated with Exogenous CS [2,3].

## Conclusion

We hereby report a case of Exogenous cushing's syndrome, in which strong clinical vigilance is required for diagnosis and has treatment paradox in form of stopping

medications in proper manner instead of advising medications.

### Limitation

Repeat morning serum cortisol levels, serum ACTH levels and dynamic test for hypothalamic-pituitary-adrenal axis were not performed due to financial constraints.

### Conflict of Interest

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

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(A)



(B)

**Figure 1: (A) Showing moon facies with hirsutism. (B) Showing Acanthosis Nigricans, Hirsutism and Hump on the back.**

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