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# A Case of Resistant Depression Stabilized by Testosterone Enanthate in a Context of Hypoandrogenism

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## Abstract

Androgen deficiency also known as hypoandrogenism and androgen deficiency syndrome is a medical condition characterized by not enough androgenic activity in the body. Here, we report the case of a patient suffered from a resistant depression for whom a hypoandrogenism has been late detected. The depressive mood has been greatly improved with the introduction of testosterone enanthate.

**Keywords:** Depression; Inhibition; Radiotherapy; Chemotherapy; Blood

## Introduction

Hyperandrogenism (HA) is colorful syndrome which includes non-specific reproductive, metabolic, and dermatologic symptoms. Now-a-days there is no any definitive test or sign that could establish the diagnosis of HA. In a case of HA, every complaint should be objectified by careful physical examination and correlated with psychogenic status. Since there are objective difficulties concerning laboratory assays for testosterone measurement and its reference intervals as well as diagnostic criteria for HA, the clinical judgement is crucial. Here we present a case study of a 42-year-old patient, suffering from treatment-resistant depression in a context of hypoandrogenism.

## Case Report

We describe a case study of a 42-year-old patient, suffering from treatment-resistant depression in a context of hypoandrogenism. The depressive symptoms were durably relieved following the introduction of testosterone enanthate.

The cares of Mr. X for severe depression began while he was 24-years-old, with suicide attempts by hanging and then by jumping from a scaffold. Depressive episodes had followed one after another. The hypothesis of bipolar disorder was

retained because of manic episodes under clomipramine and of suicidal histories of both maternal grandparents.

Several mood stabilizers (lithium, sodium divalproatene) were tested but were ineffective as well as alternative strategies such as phototherapy or electroconvulsive therapy even if the latter provided a mild and temporary effect.

The evolution was marked by a series of depressive episodes with stereotyped symptomatology characterized by sadness, psychomotor inhibition with monoideism, abulia, asthenia and social avoidance. This symptomatology suggested the presence a psychotic athymhormia but antipsychotic treatments with disinhibiting properties were unsuccessful. The persistence of this psychomotor inhibition led the patient to alcohol over-consumption for disinhibition and entactogenic effects; he was subsequently hospitalized several times to hospitalization for alcohol withdrawal. The patient benefited from multiple SSRIs (fluoxetine, paroxetine, fluvoxamine, escitalopram), SNRIs (venlafaxine, duloxetine), tricyclics (clomipramine), selective MAO inhibitors (moclobemide), sometimes in conjunction with antipsychotic treatments (aripiprazole and quetiapine in particular), which did not improve symptoms.

Mr. X requested in 2013 a blood dosage of testosterone, suspecting a link with the drug resistance of his depression. He had indeed been operated for a testicular cancer at the age of 32 by orchiectomy followed by radiotherapy and chemotherapy. The blood results showed of a low level of testosterone (1.6 ng/ml - normal values: 2.8-8 ng/ml) although the etiology of this hypoandrogenism (with high levels of FSH and LH) could not be established with certainty; previous clinical signs suggesting a weak androgenic impregnation.

A prescription of testosterone enanthate (250 mg every 4 weeks) was then initiated in addition to the regular antidepressant therapy (moclobemide and lamotrigine without any change to the dosing regimens). In a few months, Mr X. lost a lot of weight and had major behavioral changes: disappearance of asthenia (sometimes with ideic accelerated process, irritability, some sleepless nights but without obsessive phase) and a clear enhancement of his overall mood. After 2 years of follow-up, Mr X seems stabilized with a

treatment with moclobemide 600 mg/day, lamotrigine 400 mg/day and 250 mg testosterone enanthate/month.

## Discussion and Conclusion

In the literature, several studies have established the beneficial role of testosterone in the treatment of depressive symptoms or depression in hypogonadal subjects especially in elderly, with however inconsistencies [1,2]. Testosterone levels normalize after depressive remission [3], and chemical castration imposed by prostate cancer comes along with a greater incidence of depressions which normalize at the end of the drug therapy [4]. On the other hand a treatment by testosterone does not modify the humor of eugonadic subjects [5].

The type of the relationship between testosterone and depression remains uncertain. Polymorphism in exon 1 of the androgen receptor gene, encoding the terminal chain of the receptor may influence the response to treatment (effectiveness of testosterone in patients with hypoandrogenic depression and carrying short chains) [6,7]. Moreover, in animals, testosterone increases the density of cortical 5-HT<sub>2A</sub> receptors [8], which seems to be decreased in some patients suffering from depression [9].

This observation raises the interest of a testosterone dosage in case of resistant depression, including young humans when a hypoandrogenism risk factor is present.

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