



Case Report

An otherwise healthy male developed COVID-19 disease after the use of anabolic steroid: The second case report

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A B S T R A C T

Introduction: COVID-19 disease is considered a highly risky pandemic which led to more victims during the last two years.

Case presentation: We present a case of a 32 athlete male patient who presented with covid-19 symptoms. Past medical history was unremarkable except for oxandrolone (an anabolic steroid) 30/day for bodybuilding 21 days before the presentation. He reported that his symptoms developed rapidly in the past two days. After taking patient consent, we started the treatment with a single dose of anti-androgen (proxlutumide 400 mg) followed by 200 mg daily for one week. There was no need for hospital admission. On-call follow-up showed a marked response with resolving of most symptoms. Follow-up for six weeks later demonstrated a full recovery.

Discussion: Using anabolic androgen steroids have been considered a risk factor for developing pneumonia. With the wide use between bodybuilders, many reports showed a link between the use of such drugs and COVID-19 disease. Anti-androgen drugs may lead to resolution of the symptoms.

Conclusion: To the best of our knowledge, this is the second case reporting the link between anabolic steroids use and covid-19 disease severity.

1. Introduction

On March 11, 2020, the World Health Organization declared the coronavirus disease 2019 (COVID-19) outbreak to be a pandemic situation as a result of the severe acute respiratory syndrome associated with the coronavirus 2 (SARS-CoV-2) and its highly contagious nature [1].

This virus can affect the immune response and, in addition to respiratory complications [2].

Anabolic androgen steroids (AAS) use during the pandemic has shown to have a negative impact.

It is also oftentimes acknowledged to be problematic, particularly the negative health implications resulting from androgen use. Examples of these implications include multiorgan damage and related negative cardiac effects. Indeed, there are a variety of specific health risks associated with androgens and other Image and Performance,

Enhancing Drugs (IPEDs) [3].

The use of androgen could conceivably accelerate, exacerbate, or even initiate significantly more dangerous responses to COVID-19.

There were no widely available case studies or peer reviewed resources that had clearly demonstrated a link between androgen use and increased risk of mortality or disease severity from COVID-19, as well as associated mental health challenges [4].

Using androgen receptor inhibitors then, is considered a possible therapeutic strategy to address the vulnerability of male individuals to severe COVID-19 responses [5].

Here, we report a rare case of an otherwise healthy male athlete who used anabolic steroid for bodybuilding. He was diagnosed with covid-19 disease. Treatment with an anti-androgen drug succeeded to help in recovery.

This case report examines one such presentation in line with the CARE guidelines.

2. Case presentation

A 32 years old male with no known healthy problems presented to an out-patient clinic with cough, shortness of breath, fatigue, muscle pain, and insomnia. His symptoms started three days ago. Past medical and

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familial histories were unimportant. He is an athlete with regular visiting gym since seven years ago. His past medical history was remarkable for taking oxandrolone 30/day for bodybuilding 21 days before the presentation. He claimed he did not take any medication such hormones. Vital signs were as follow: blood pressure was 110/65 mm/Hg. Pulse was 82/min, temperature was 38.1 C^o, Spo2 was 94%, respiratory rate was 19/min. His body mass index (BMI) was 27.2 kg/m². Physical examination showed a well-built man with just muscle tenderness. He was suspected to have COVID-19. Real-time reverse transcription PCR test for SARS-CoV-2 test confirmed the diagnosis. C reactive protein level (CRP) was 29 mg/l, erythrocyte sedimentation rate.

(ESR) was 12 mm/hour, and creatine kinase-MB (CK-MB) was 9.08 ng/mL. Blood testosterone level was 140.3 ng/dl.

Based on what we had and what the patient took (oxandrolone), we suggested to treat the patient with anti-androgen drugs. After full explaining the possible risks and taking the patient consent, we administrated a single dose of proxlutamide 400 mg followed by 200 mg daily for seven days. On-call follow-up after 48 hours demonstrated great response of most symptoms. Reassessment after five days showed a complete resolution of all the symptoms. His spo2 was 99%. Other laboratories were: CRP dropped to 1.1 mg/l, ESR was 3.1 mm/hour, and CK-MB fell to 3.4 ng/ml.

Follow-up for six weeks in the out-patient clinic showed no relapse of any symptom.

3. Discussion

Anabolic androgen steroids (AAS) and performance-enhancing drugs have been previously reported to trigger severe viral pneumonia with acute respiratory distress syndrome in young patients [6].

The relationship between androgens and COVID-19 is supported by the epidemiological corroboration that prepubertal children are rarely affected by clinically severe COVID-19.

In a 2021 case study, Cadebiani et al. outline how an otherwise healthy 28-year-old male recreational bodybuilder who was using 40 mg/day of oxandrolone (an androgen), presented severe COVID-19 symptoms. The patient was given a single 600mg dose of a novel anti-androgen, proxlutamide, and within 24 h demonstrated a significant improvement in symptoms [6].

Furthermore, a randomized controlled trial investigated the effects of supplementing standard treatment with a 30-day course of dutasteride on adult patients presenting with early COVID-19 symptoms. Compared with placebo controls, treatment-arm patients (n=43) evidenced reduced disease duration, as well as lower reported fatigue and inflammatory markers, by day 7 [3].

We had a rare case of a previously health patient who is an athlete. He was taking anabolic steroids before the presentation. After that, he had many symptoms like fatigue, shortness of breath, muscle pain, and headache. When he presented to out-patient clinic, he was diagnosed with covid-19 disease.

After a full discussion with the patients about the side effects of anti-androgen drug, we decided to treat him by proxlutamide. He was not admitted to the hospital. Follow-up by phone revealed a well response with no other complains. After that, he showed a well recovery with resolution of all symptoms.

4. Conclusion

We succeeded to treat an athlete male with severe covid-19 disease by administration of anti-androgen drug (proxlutamide). More research

is needed to reach a standard treatment for patients with the use of anabolic steroid drugs and they have covid-19 disease.

Ethical approval

Written informed consent was obtained from the patient for publication of this case report and accompanying images, in line with local ethical approval requirements. No other requirements were stipulated.

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Author contribution

Maher Al-Hajjaj: contributed in study concept and design, data collection, and writing the paper.

Oula Abou Alam, Muna Alqralleh, Hussin Almarawi and Mohammed Deeb Zakkor: Helped in writing and revising manuscript.

Research registration

Not applicable.

Guarantor

Maher Al-Hajjaj.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Provenance and peer review

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Declaration of competing interest

None.

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