

Global Congress on Integrated Healthcare

A joint Conference in Collaboration with United Research Forum, UK and Mutah University, Jordan

Under The Patronage of his Excellency Dr Yousef Goussous

May 15 - 16, 2022 | Hotel Crowne Plaza Dead Sea, Jordan



Influence of Anabolic Steroids on Male Fertility Among Healthy Gyms-goers in Mosul City

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Abstract

Background: Anabolic-Androgenic steroids (AAS) misuse are growing worldwide and used especially among male gyms-goers for building muscle to improve their physical appearance. AAS misuse is considered a preventable factor of male fertility because it affects the hypothalamic-pituitary-gonadal axis resulting in transient or persistent suppression of spermatogenesis.

Objective: To investigate the effect of anabolic steroids misuse on serum levels of FSH, LH, and Free T, as well as semen parameters, suggestive of decreased male bodybuilder's fertility who misuse anabolic steroids.

Method and Material: A prospective cohort study was conducted on 80 healthy male gyms-goers divided into the case and control groups who attended gyms in Mosul city. A structured interviewing questionnaire was used to collect information related to AAS misuse, blood sampling, and semen specimen for evaluation of serum levels of FSH, LH, Free T, and sperm parameters respectively in a private analytics Lab, for a period spanning from 28th September 2020 until 15th March 2021.

Results: AAS group exhibited a highly significant decrease ($P=0.000$) in the mean of each serum level of follicle-stimulating hormone, luteinizing hormone, and free testosterone. Semen analysis shows that the overall mean of total sperm count/ejaculate was (18.83 ± 24.02 vs. 139.5 ± 24.80) and the percentage of sperm motility was significantly lower than the control group. AAS group have five times more likely to develop oligospermia than the control group (RR: 5; 95% CI: 2.690-9.293; $P=0.000$).

Conclusions and Recommendations: The use of AAS has a severe effect on male fertility, AAS users exhibited a severe decrease in levels of gonadotropins suggested for hypogonadism, and low free testosterone and sperm counts indicative of impaired spermatogenesis. The study recommends the necessity to prevent abuse of anabolic steroids and instructs about the adverse effects that result from using them and especially on fertility.

Keywords: Anabolic-androgenic steroids, Male fertility, Hypogonadism, Spermatogenesis

Biography

Professor Doctor specialized in physical education and sports sciences. I have over twenty-five years of experience teaching biomechanics, kinematics analysis, physiotherapy and water games and holds an international training certificate in Olympic swimming education and training. Extensive experience in the use of computers and mechanical kinematic analysis programs. Lecturer in several training workshops for teaching kinetic analysis accredited in Microsoft Excel and Microsoft PowerPoint, Director of Student Activities Department - University of Mosul 2017-2020, Member of the Higher Sports Advisory Board in Nineveh Governorate, Representative of Mosul University (2010 - 2013), Member of the Central Union For badminton, Nineveh branch for the period (2000-2003), member of the Association of Arab Academics for Physical Education and Sports Sciences and in the position of (Coordinator of the Office of the Secretary-General of the Association 2015), member and official of the scientific group in the sciences of physical education and sports, a public group on Facebook (2015) I have more than five Forty research published in local, Arab and international journals, participating in more than twenty-five local, Arab and international conferences, and more than twenty-seven local and international seminars and workshops.