



**DOES OBSESSION OF IRRATIONAL STACKING ANABOLIC STEROIDS WITH TRENBOLONE ACETATE OVER DECADES LEADS TO GENERAL, CARDIOVASCULAR OR SOCIAL DEVIATION PROBLEM IN YOUNG ADULTS, OR JUST BIGGEST MUSCLE MASS IS EQUAL HIGHEST SOCIAL REPUTATION IN GYM AND IS THIS ALL PRICE HEALTH WORTH? - CASE REPORT**

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**Abstract:**

Inconspicuous epidemic of anabolic steroids application among young recreational athletes contributes to a greater potential damaging of the overall cardiovascular and mental state of obsessed individuals. All of them turn to anabolic steroids without a rational concept and take them in big amounts with unbelievable irrational combinations (stacking) of anabolic steroids of wide spectrum and questionable quality from black market with the aim to satisfy their pathological obsession of subjectivity of muscle mass, strength and appearance. An examinee, 36 years old (with the height of 182 cm and the weight of 168 kg), recreational amateur power lifter comes to doctor because of the subjective hardships in the form of tiredness and occasional pain in chest area with exact location (on the level of sternum and pectoral muscles), denies retrosternal pain. Also, he reports dizziness and occasional leg pain. He suspects that he has insufficiency of artery peripheral circulation. Personally, he also names frequent insomnia, decrease of tolerance levels alongside tolerated aggressiveness and anger attacks with auto mutilation and periodical depression

**Key words:** anabolic steroids, cardiovascular problem, social deviation

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## 1. Introduction

The biggest muscles at all costs and the question whether they are worth the health are a game of Russian roulette in each individual who uncontrollably and irrationally uses excessive amounts of anabolic steroids. Quiet epidemic on an alarming level of potential cardiovascular dangers as well as social deviant behaviour manifested in the form of uncontrollable aggression, depression and physical violence among young population of recreational bodybuilding, fitness and power lifting population has become a subject of serious medical-social debate.<sup>1-5,11</sup> Limitation of research on consequences of isolated anabolic medications of today's world is in constant correlation because of the subjective effects of stacking doses among many individuals. Also, restraint is a consequence because of the saturation from various medications on the black market. There are differences in terms of medication quality as well as many legal and illegal pharmacological manufacturers and inability to oversee them in a long term sense. There is certain secrecy in terms of consuming during doctor's appointments, as well as the frequency of appointments themselves, which limits the access to adequate medical science data, the damage to endothelial function as well as cerebral cardiovascular system and progress level of damage to peripheral circulation.<sup>5-14</sup> The question is whether the problem of epidemic obsessive consummation among young recreational users is serious and is multi discipline medical-socio-psychological therapy treatment is needed, or is it just the case for medical treatment with permanent social deviation for unreal physical super performances?

## 2. Case Report

36 year-old recreational power lifter with occasional periods of amateur performances on competitions comes to an emergency medical centre because of subjective hardships of tiredness and occasional chest pain (on the level of pectoral muscles), denies retrosternal pain with propagation to neck, head and upper extremities. Also, he names episodes of occasional pressure in the head, vertigo and emotional irritation and doubts to a brain stroke. In the information from the anamnesis he also names frequent insomnia episodes, lowered tolerance threshold with heightened aggressiveness and anger episodes with periodical deep depression. He names the start of oral and intramuscular application of anabolic steroids from the age of 18 (13 years of continuous consuming with occasional pauses of 2 month cleanses depending on the stacking). Also, he says that after consummation of Trenbolone acetate (weekly dose), after three months of application he has frequent need to self-injure alongside enormous subjectivity and objectivity of increase of muscle mass and increase of maximum and sub maximum strength, which disappear after they stop using anabolic substances (Trenbolone acetate) in comparison to other steroids in stacking. In anamnestic data he denies lack of control and aggressive episodes as a positive family

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anamnesis of mental illnesses. The question here is whether Trenbolone acetate and Trenbolone Hexahydrobenzylcarbonate is so aggressive and destructive steroid type and does it have any connection to aggressiveness and deviant social behaviour, bearing in mind the already applied irrational stacking which the patient has used for years.



Figure 1\*

Figure 2\*

Figure 3\*

Figure 2 and Figure 3, Automutilization on the left upper arm after 3 months Trenbolone acetate in agreement with other anabolic preparations

**Table 1:** Parameters and values of the power lifter men

Age	36
High	182cm
Weight	168kg
Systolic blood pressure	165 (mmHg)
Diastolic blood pressure	90 (mmHg)
Left ACC Carotid Intima-Media Thickness CIMT(mm)	0,90 ( $\pm 0,02$ )
Right ACC Carotid Intima-Media Thickness CIMT(mm)	0,93( $\pm 0,04$ )
Left Internal Carotid artery PSV 95 cm/sec	-
Left Internal Carotid artery EDV35 cm/sec Left ICA/CCA PSV ratio <2.0	-
Right InternalCarotid artery PSV85 cm/sec	-
Right Internal Carotid artery PSV32 cm/sec	-
Right ICA/CCA PSV ratio <2.0	-
Presense of atheromatose plaques on carotid bifurcation arteries	yes
Triglycerids	2,4
LDL low-density lipoprotein Cholesterol	4,50 mmol/L
HDL high-density lipoprotein Cholesterol	0,79 mmol/L
Total Cholesterol	7,0 mmol/L
RBC (eritrociti)	5,32 x 1012 / L
HGB (hemoglobin)	182 g/L
HCT (haematokrit)	0.57 l/L
PLT (trombociti)	169/L

\*from author's collection.

## 2.1 Oral and intramuscular application of continuously anabolic steroids approximately over 12 years with cleaning period 2-6 months in each year

**Table 2:** An individual stacking concept was applied without the concept of the sequence of anabolic substance applications

Currently consumed (Methandrostenolone)	25-75mg oral.aplication
Currently consumed (Oxandrolone)	30mg-50mg oral aplication
Currently consumed (Stanozolol)	intramuscular aplication
Currently consumed (Stanozolol)	10 miligram / oral aplication 3 time
Currently consumed Nandrolone Decanoate	400ml per week i.m
Currently consumed Testosterone propionate	1ml every 2 days i.m
Currently consumed Trenbolone acetate	75-100mg oral
Currently consumed testo mix 4 form of testesteron	1,5 ml per week i.m
Currently consumed Testosterone Enatate (depo)	1ml per week i.m
Currently consumed Drostanolone propionate	1ml per week i.m
Currently consumed Trenbolone Hexahydrobenzylcarbonate	1ml per week i.m



**Figure 4:** Current anabolic supplementation used by the patient<sup>ii</sup>

### 3. Discussion

Automutilation is defined as making injuries to oneself without suicidal intents. Although many studies of anabolic steroids mostly are focused on the appearance of aggressiveness towards other people, as well as criminal, asocial, delinquent behaviour, the scientific facts about auto mutilation during the consumption of anabolic medications are lesser known, so the question is whether in very big doses, even during excessive stacking, can start such a type of individual asocial behaviour?<sup>1-5,11</sup> Various studies defined the misuse of anabolic steroids through aggressive episodes and behaviour disorders. Also, very often, potential users exchange the use of anabolic steroids with other drug, such as heroin or cannabis consuming.<sup>6,7</sup> On the other hand,

<sup>ii</sup> from author's collection.

the science proved that stacking (using many different drugs) increases muscle performance and thus the overall performance is improved. Some studies were conducted regarding the potential damage of synthetic testosterone and other types of derivatives of synthetic testosterone, which after all leads to deviant behaviour. Application doses in misuse of anabolic steroids among weight lifters and bodybuilders outperform medical dosages in 10 and up to 50 times of recommended medical dose for the patients. Using of anabolic steroids usually starts in cycles of 2 steroids which lowers to previously irrational limit of subjectivity of combination effect of the so called "stacking" (increase and influence of several drugs) because of the effect in cycles of 3-6 months depending on the potential of anabolic substance itself with cleansing pauses.<sup>7-15</sup>

Accommodation cycles start with a small application dose, usually orally or intramuscular, which increases because of the subjective expectations of training quality, and decreases after possible cycle termination. Bearing in mind that in the periods of cleanse a sudden decrease occurs in terms of subjective strength estimation, some individuals who are inexperienced, exchange drugs with other substances because they think it saturates the receptors and effectiveness of the forbidden substance. Anabolic steroids are specific and they are associated with a high number of cerebrovascular and heart incidents worldwide among younger population under the age of 30, while frequent incidents are recorded among the population of the age over 40, and usually among individuals who are long-term users.<sup>15-18</sup> Because of the limitation of the number of examinees, as well as the studies themselves, and secrecy about the consumption among research subjects, it is impossible to determine which stacking combination is associated with the highest possibility of atherosclerosis illness, cerebrovascular diseases, in terms of obstruction of artery and vein hemodynamic because of the changes on the level of total cholesterol, triglycerides as well as direct impact on the decrease of HDL and increase of the LDL.

In the 50s and late 70s anabolic steroids in certain dosages do not make the process faster, and have therapeutic effect in terms of arteriosclerosis process prevention with myocardial infarction and symptomatology of chronic stenosis occlusive artery illness. It is determined that except individual subjective behaviour, there is a minimal effect of increase and disorder of lipid status in terms of decrease of HDL and LDL increase. Studies which did research on long-term users of anabolic steroids, which surpassed all rational doses, negatively report on that.<sup>18-22</sup>

Having in mind that the subject of the research is sports and now widespread consumption of epidemic levels in recreational purposes, drugs manipulation, and the role is not clear in terms of preventive therapy effects on cardiovascular system and potential damage of various doses and various substance combinations. A field that has not been yet researched thoroughly is among the population of the age between 20 and 30. The science still does not have available information and is limited in regards to the numbers of such research. Further research is needed of secondary and primary

prevention of arteriomatosis process, as well as general suppression of arteriosclerosis in risky amount of young recreational body building population.<sup>22-31</sup>

Studies of medicine applications of Stanazolol and Ester Nandrolon are scientifically significantly resulted in inadequate application on delevation of lipid level in serum and long-term misuse of supra-therapeutic doses of such substances carry a highly dangerous potential of cardiovascular incident. Therapeutically overdosed misuse of anabolic steroids has impact on decrease of HDL and LDL increase and provokes disorder of lipids of high and low density relation (HDL and LDL), which leads to the start of arteriomatosis with the progression of adhesion of thrombocyte and speed increase of the pathology of atherosclerosis because of increased values of erythrocytes and thrombocytes as well as haematocrits. The sole backing of the research works and case report is a statistical indicator of irrational epidemic increase tendency of sole application of anabolic steroid in terms of drug usage in young recreational body building Balkan population. It is evident that without the usage of anabolic some recreational athletes do not even think about starting a body building training process and by using irrational stacking applications cardiovascular incidents after long-term usage could become more frequent.<sup>12,22-29</sup>

Contemporary recreational group of anabolic substances users is greater in numbers than the starting group from 1970 and 1980 and is far more visible and presented with the public. We can even talk about the starting euphoria of obsession and Addison complex with the development of epidemic scales. The scale is such that application doses of synthetic testosterone are going over irrational limits of thinking, where among some individuals they range between 3000-5000 mg several times in a week alongside application doses of various anabolic steroids simultaneously, which has no benefit from application besides toxic properties and occurrence of deviant personality due to hormonal misbalance of the individual. Many studies led to conclusion that the problem of the start of consuming has different roots (enormous strength with social respect, imagined self-confidence gain, imagined superiority) and that there is a potential of self-harm, harming other people or a murder. From our standpoint more attention should be given to the population which is included in social, cardiovascular, psychiatric as well as potential criminal risky population. Several questions can be asked. Is there only irrational consumption of anabolic substances or does the genetic predisposition with gained form of social deviant behaviour has any impact? Is one of the anabolic substances, eg. Trenbolon acetate or hexahydrobenzylcarbonate the key to the initial change of personality or is it created by some other substance combinations? Many other studies will be needed in order for this serious topic of the dark side of sport to be researched accordingly.<sup>2,4,5,27,28,29</sup>

Overall a lot of efforts and many researches will be necessary to gain precise information on usage and application of anabolic steroids in order to come to an exact initiator of irrational application and in order for medicine to act not only

symptomatically and therapeutically but preventively and cardioprotectively as well.<sup>2,4,25</sup>

#### 4. Conclusion and Further Research

Epidemic increase of usage of anabolic steroids has been recorded among young population and the number keeps increasing. The obsession for irrational use of anabolic steroids is a serious problem of addiction equivalent to using drugs with bad consequences on cardiovascular system, deviant social behaviour as well as strong deviant factor of social domination among male body building recreational population. Irrational overdosed and continuous stacking of anabolic substances with the subjective aims to increase strength and mass leaves a strong psychological and social deviant form of behaviour which has a strong destructive cardiovascular potential with the personification disorder as a strong psychiatric, and in some cases self-harming potential. Overall, we can speak about a new young cardiovascular risky population which has not shown itself to the public yet, and represents a big problem for a wider social environment

#### Conflict of Interest

The authors declare no conflict of interest

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