

KNOWLEDGE ON AND ATTITUDES OF DOPING IN SPORT, OF YOUNG TRAINEES IN INTERNAL AND GENERAL-FAMILIAL MEDICINE.

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Abstract

Objective: The aim of our study was to assess a) the knowledge on substances used by athletes for doping, b) to evaluate their opinion about doping control, and c) to assess the attitudes of both young trainees in internal and general-familial medicine of our Hospital, on prescribing ergogenic pharmaceuticals, asked by competitive athletes.

Methods: A total of 123 young doctors, trainees in internal and general-familial medicine, of ‘‘St. Andrew’’ General Hospital of Patras, Greece, were randomly selected and asked to complete (self-report) a 2-fold questionnaire.

Results: All the selected (100%) doctors responded (102 men and 21 women, mean (SD) age 28,12 (1,67) and 26,17 (1,15) years respectively). Of the respondents, only 25,2% confirmed that they had heard about the I.O.C./W.A.D.A. list of banned substances but nobody was aware of the Greek legislation referring to banned substances and doping control procedures.

Although all of the respondents confirmed that doping control is performed in urine sample, only 5,65% of them knew details about laboratory control procedure and nobody of them had had knowledge about the sanctions posed by the IOC/WADA/National Sport Federations, in case of a positive sample. The majority of the respondents referred to Anabolic Steroids as the main doping agents, but only 53,6% of them confirmed their mechanism of action or of other doping agents, and even few (34,9%) referred the serious adverse events on athletes’ health. The majority of the questioned (99,2%) declared as the newspapers the main source of knowledge about doping agents and main adverse reactions, doping control procedure and sanctions posed to athletes and not at all from their medical studies. 87% of them feel under trained in practicing sport medicine, 84% not ready to take part in an anti-doping campaign but 15,4% of them believe that health physician must be allowed to prescribe drugs for athletes if they ask for them.

Conclusions: The results suggest that young trainees doctors have limited knowledge of doping procedures, of adverse events of doping drugs and of sanctions posed to athletes. This lack of knowledge reflects lack of educational programs in Greek medical schools, and that poses the obligation of University authorities to perform educational changes and of Ministry of Health to legislate the foundation of Sport Medicine as a separate specialization.

Keywords: Doping in sport; young doctors; knowledge; attitudes; ergogenic aid.

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Introduction

Sport is affected by dysfunctions and abuses, which directly lead to harm the health of athletes and especially, top ones'. (1)

Drug overuse in sports is well known and documented in recent years, although efforts to detect illicit substances in biological specimens of athletes have been materialized since 1972 Olympic games. The tendency is admittedly not new but it has dangerously increased during the last three or four decades, while our society was becoming performance oriented.

According to the International Olympic Committee (IOC), it is the responsibility of the sports medicine profession to care for the health and welfare of Olympic athletes, treat and prevent injuries, conduct medical examinations, evaluate performance capacity, provide nutritional advice, prescribe and supervise training programs, and to monitor substance use. (2)

In Greece, although competitive sports, based on private clubs, have been established by law since 1975 (3) there is no legal approval of sports medicine as a separate medical specialization nor a teaching program on sports medicine, in medical schools. Physicians offer their services to National Sports Federations as well as to top athletes as "amateur" or empirical sports medical doctors.

It is well known to us, by experience, that several health physicians are implicated in prescribing therapeutic or illicit substances to top athletes, posing them to several, short or long term dangers.

The objective of our survey was to determine the knowledge of young doctors, trainees in internal and general-familial medicine, in our hospital, on prescribing pharmaceuticals for competitive, top athletes and their attitudes towards doping. To our knowledge, there is no such a similar investigation among young medical trainees, in the Greek medical literature.

Material and Methods

A 2-page, self-completed questionnaire was designed especially for this purpose, to assess young doctors' amount of knowledge on drugs used by athletes (permissive or illicit drugs, and ergogenic substances) along with beliefs about doping, or on the methodology used to detect illicit substances in biological (urine) samples and on the sanctions posed as well.

They were also, asked to self-report their attitudes and beliefs on prescribing medical or pharmaceuticals substances for competitive athletes, especially anabolic androgenic steroids well as β 2-agonists for asthmatic athletes.

The questionnaire was distributed to 123 young doctors, enrolled in our study during January 2001 – July 2004, trainees of "St Andrew" General Hospital of Patras, in general-family medicine and internal medicine.

In demographical characteristics, time of specialization, preexisting experience in sport medicine service, there were no differences between male and female doctors. Mean age was, for both sexes, 28 ± 3 years, mean time of specialization 2,5 years, with no pre-existing implication in sports medicine practice. The results are presented as percentages (%).

Results

It was of all of the respondents' knowledge (100%) that Anabolic Androgenic Steroids (AAS) are used in sports as enhancing performance agents, but only 53,6% answered positively about the knowledge of their mechanism of action on muscles and even few responders (34,9%) referred the serious adverse events on athletes' health.

By the questioned physicians, as ergogenic aid substances were referred *Erythropoietin* (EPO, 92%), *Growth Hormone* (GH, 89%), *Caffeine* (53%) *Amphetamines* (40,4%), *beta-blockers* (36%), *Creatine* (3,2%) and only 5,69% was referred to *Blood doping* as a doping method.

A small number of the respondents (4%) referred to the rules, valid for asthmatic athletes' medication or other therapeutic use exceptions (TUE).

The list of banned substances used by the IOC/WADA was to the knowledge of only 25,2% but nobody of them was aware of the Greek legislation referring to doping and doping control methods. 100% of the questioned confirmed the urine sample as the biological control sample but only 5,65 % referred on details about the used laboratory control methods.

None of the questioned young doctors knew the sanctions posed by the IOC/Sports Federations, in case of a positive urine sample but 48% of them consider that the current methods of preventing doping in sport are ineffective and a small percentage of 3,2% believes that laboratory control methods of detecting illegal use of ergogenic aid substances, are unavailable.

The provenience of knowledge about doping substances and doping methods and doping control process for 99,2% of the respondents is from sport newspaper and not at all from their medical studies.

Most of them feel to be undertrained (87%) in practicing sports medicine or taking part in a preventive campaign (84%) against sports doping but 15,4% believe that health physician must be allowed to prescribe anabolic steroids or other ergogenic aid substances, even without medical therapeutic indication, if athletes ask for them.

Discussion

Doping is widely known as the use of banned substances and practices by athletes in an attempt to improve sporting performance (4)

Conform to our opinion, as doping must be considered the use of every pharmaceutical substance without medical (or therapeutic) indication or a method (manipulation), in an attempt to improve athletic performance.

The knowledge of young doctors on doping in sport, especially those implicated in sports medicine, in any manner, is thought to be limited because of the lack of medical studies on this subject. It is well known and from our experience that in the Greek medical schools there is no any educational program on doping or sports medicine, with the exception of medical school of Athens, and in the Department of experimental pharmacology, in the elective course of "Social Pharmacology", founded by professor Jannis S Papadopulos.(5)

Our results enforce the observations by St Mary EW, (1998) (6) that the lack of educational program in medical schools facilitate the violation of prescription of drugs for athletes, by doctors especially

General Practitioners (GPs) and Internists, who in Greece are implicated empirically with the medical problems of athletes.

Laure P et al (7) in their study in France refer that GPs have a limited knowledge of doping and are confronted with doping in their daily practice, at least occasionally. Only 34,5% of them stated that they were aware of the latest French law, brought into effect in March 1999, concerning the fight against doping as well as 52% of the GPs favoured the prescription of drug substitutions to athletes who used doping agents. 89% said that a GP has a role to play in doping prevention, but 77% of them considered themselves poorly prepared to participate in its prevention.

A role in preventing doping in sports, there is also for coaches although they are not enough prepared for this. In the study of Laure et al., (8) 10,3% of coaches consider that an athlete may use doping with no health hazard with the help of a physician, and 30% that an athlete who declines doping has a little chance of succeeding. An 80.3 % of the responded coaches consider themselves badly trained in the prevention of doping and only 10.4% had organized a doping prevention action during the last 12 months. These results indicate that there is also a lack of educational programs for doping in University schools for physical education and sport.

In another study, in General Practitioners in West Sussex (GB), (9) Greenway et al, conclude that the knowledge of GPs on prohibited substances in sport is very poor, reflecting the lack of education in their medical schools. Of the respondents, only 35% were aware that the guidelines are to be found in the British National Formulary, and 12% believed that medical practitioners are allowed to prescribe anabolic steroid for non-medical reasons.

A similar opinion was expressed by Keld DB, et al (10) who performed a retrospective analysis on the extent of positive doping tests among athletes, performed by the Sports Confederation of Denmark during 1991-1996 and reviewed the adverse effects of the used substances. Keld concludes that it is important for all doctors to be aware of the side effects and health problems in misusers.

In our survey among 136 medical students (11) who attended the elective course of ‘Social Pharmacology’, founded by prof. Jannis S. Papadopoulos, including a course on doping in sports (Dept of experimental pharmacology, medical school of Athens, Greece), we examined the student’s knowledge and attitudes on doping in sports. 83.3% of the respondents consider the use of illicit drugs by athletes as ‘*being unethical*’, and 97,2% of them refuse to advice other athletes to take pharmaceuticals because they ‘*know their adverse effects*’ and ‘*harmful action on athletes health*’. 83,33% of the questioned students, also consider that pharmaceuticals ‘*have no medical result on enhancing athletic performance*’ and another 13.8% believe that ‘*they are useless for athletes*’.

In conclusion, young doctors trainees in general-familiar medicine and internal medicine, in our General Hospital ‘St Andrew’ of Patras, Greece, have a poore knowledge about doping in sports and related problems of used medication by athletes in what concerns prescription of illicit drugs asked by athletes and awareness of possible adverse effects.

The lack of education in the Greek Medical Schools, as stated by the questioned young doctors and sustained by our experience, is an real observation that can be generalized, and possesses the necessity of performing reforms in educational medical programs.

The ethical problems and dilemmas posed by others for the doctors’ attitudes on sports doping, are related to individual responsibility, social sensitivity, and educational ‘endurance’. The contribution of any physician in the fight against doping is related to his personal-educational status,

but really it depends on his previous global medical prepare, including teaching of athletic medical problems.

In our country, as well as in other European countries, there is no approval for sports medicine as a separate specialization. As a result, many physicians are empirically employed with medical problems of athletes, having the risk to provoke more health hazards than prevent them, as well as to underestimate the multiple risks of high intensity training or missuse of enhancing performance drugs.

References

1. Gallien Claude-Louis. Top Level Sport, From Ethics to Health.29/10/2001 <http://www.cafdis-antidoping.net/en/printpreview.asp?articleid=146>. 15/9/2003
2. Tipton MC. Sports medicine: A Century of Progress. *The Journal of nutrition*, 1997; 127(5): 878S-885S.
3. The law Nr 75/75 about “scholastic and extra-scholastic sports”. *The Official Governments’ Journal of Greece*.
4. Lippi G, Guidi G. Doping and Sports. *Minerva Med* 1999 Sep;90:345-57.
5. *Social Pharmacology*. J St Papadopoulos (ed). University of Athens, Medical School. Athens 1993.
6. St Mary E W. Legal and ethical dilemmas in drug management for team phycisians and athletic trainers. *South Med J* 1998 May;91:421-24.
7. Laure P, Binsinger C, Lecerf T. General practitioners and doping in sport: attitudes and experience. *Br J Sports Med* 2003 Aug;37(4):335-8.
8. Laure P, Thouvenin F, Lecerf T. Attitudes of coaches towards doping. *J Sports Med Phys Fitness* 2001 Mar; 41(1): 132-6.
9. Greenway P, Greenway M. General practitioner knowledge of prohibited substances in sport. *Br J Sports Med* 1997 Jun 31;129-31.
10. Keld DB, Bendsen AK. Doping-a medical problem in Denmark?. *Ugeskr Laeger* 1998 Aug; 160: 4749-53
11. Georgakopoulos P, Sitaras N, Papadopoulos G, Papadoulos J S. Doping: knowledge and attitudes of athletes and medical students. (Abstract), 1st Panhellenic Conference in Pharmacology, 19-20 February 2000, Athens, Greece.