

ORIGINAL ARTICLE

Doping and the Sports Physician's Role – The Swiss Experience

EXERCISE IS MEDICINE



Gähwiler Roman^{1,2}, Tscholl Phillippe^{3,4}, Koenig Ernst⁵, Clénin German^{6,7}

¹ Institute for Biomedical Ethics and History of Medicine, University of Zurich UZH, Switzerland

² Vascular Institute Central Switzerland (Zentrum für Gefässmedizin Mittelland AG), Aarau/Baden, Switzerland

³ ReFORM IOC Research Centre for Prevention of Injury and Protection of Athlete Health, University Hospitals Geneva, Switzerland

⁴ Department of Orthopaedic Surgery and Traumatology of the Musculoskeletal System, Geneva, Switzerland

⁵ Swiss Sport Integrity, Berne, Switzerland

⁶ Sportmedical Centre Ittigen Bern, House of Sports, Ittigen, Switzerland

⁷ Sport and Exercise Medicine Switzerland, Berne, Switzerland

Abstract

Sports physicians who take care of both leisure and elite athletes tend to be confronted with doping practices in various facets. The authors of this article aimed to examine attitudes, knowledge and experiences regarding doping practices and anti-doping resources in a specially trained population of board-certified Swiss sport and exercise physicians using a questionnaire. Swiss sports medicine practitioners identified doping as a significant health problem both in leisure, as well as in elite sports. Furthermore, consumption of non-prohibited available medication such as painkillers reveal to be a relevant health issue. Almost 90% of sports medicine specialists in Switzerland advocate for educating athletes (leisure and elite) on adverse side effects of prohibited and non-prohibited drugs in sports. For the purpose of improving the education of current and future Swiss sports physicians, this study sheds light on the knowledge, experiences and attitudes about illicit artificial performance enhancement, as well as the identification of preferred anti-doping resources.

Zusammenfassung

Als klinisch tätige(-r) Sportmediziner/in wird man sowohl im Spitzen- als auch im Breitensport in unterschiedlicher Weise mit der Problematik des Dopings konfrontiert. Im Zuge dessen haben die Autoren dieses Artikels sowohl die Erfahrung als auch die Haltung und das Wissen der «Sport and Exercise Medicine Switzerland» (SEMS) akkreditierten Sportärzte/-innen in Bezug auf die Dopingpraxis und die verfügbaren Anti-Doping-Ressourcen im Rahmen eines online Fragebogens evaluiert. Dementsprechend identifizierten Schweizer Sportmediziner/-innen Doping als signifikantes gesundheitliches Problem im Breiten- und Spitzensport. Zudem scheint auch der Konsum von nicht auf der Dopingliste vermerkten Schmerzmitteln eine relevante Problematik darzustellen. Nahezu 90% der Befragten unterstützen deshalb die Schulung von Breiten- und Spitzensportlern in Bezug auf das Wirkungs- und Nebenwirkungsprofil von erlaubten und nicht-erlaubten Präparaten im Sport. Die Erkenntnisse dieser Studie betreffend Erfahrungen von Sportmedizinern/-innen mit Doping im klinischen Alltag als auch die Identifikation bevorzugter Anti-Doping Informationsquellen könnte die Aus- und Weiterbildung von Sportärzten/-innen in der Schweiz entscheidend beeinflussen.

Introduction

Towards the end of the twentieth century exercise physiology as well as artificial performance enhancement in sports experienced progressive significance in both elite and leisure sports. On the back of a so-called “randomized-response” interview technique, estimation of prevalence according to the abuse of doping substances in populations such as elite and leisure athletes became feasible. The estimated prevalence of doping and illicit drug use in elite sports accounted for 6.8% [1], respectively 8.2-12.5% [2,3] in fitness sports. In a further development, diagnostic biomedical advances and improvement of forensic intelligence paved the way to creating an even more detailed picture of the occurrence of blood doping in

high-performance sports. Therefore, Saugy et al. identified a prevalence estimate of prohibited blood transfusions and use of low-doses of recombinant human erythropoietin in elite track and field athletes during the 2011 and 2013 Athletics World Championships of 18% in 2011 and 15% in 2013 [4]. The conclusion to be drawn is that sports physicians who take care of both leisure and elite athletes tend to be confronted with doping practices in various facets. In fact, in 2003 Laure et al. performed interviews with 402 French general practitioners about their attitudes with drug taking athletes. In this context, most physicians (89%) expressed their belief that a general practitioner has a role to play in doping prevention, but 77% considered themselves poorly prepared in order to participate in such prevention [5]. In conjunction with this, the authors of this article aimed to examine attitudes, knowledge and experiences pertaining to doping practices and anti-doping resources in a specially trained population of board-certified Swiss sport and exercise physicians by way of a questionnaire. As a result, framing the knowledge, experiences and opinions about illicit artificial performance enhancement in Switzerland, as well as the identification of preferred anti-doping resources might have essential influence into the education of current and future sports physicians.

Methods

The sample consisted of 882 sports physicians (male and female) who hold a board-certified diploma of the society of “Sports & Exercise Medicine Switzerland” (SEMS) as the sole inclusion criteria (no exclusion criteria have been applied). Noteworthy, in Switzerland sports medicine does not represent a standalone specialization. Rather, it is accepted as an interdisciplinary main focus for physicians who are already specialized within one of forty-five disciplines provided by the Swiss Medical Association (e.g. general internal medicine, cardiology, pneumology, orthopedic surgery, etc.) and fulfilled the SEMS sub-specialization requirements (part-time 2 years theoretical education with a final written and oral exam, including 6 months clinical work in a Swiss Olympic Medical Centre).

The 882 Swiss sports physicians were informed about the questionnaire on behalf of a regular newsletter provided by SEMS. This newsletter was sent to the sports physicians twice (May 12th 2022 and June 24th 2022). Among general medical or organizational information relevant to the members of the society, the newsletter included an online link to the questionnaire which is described in further detail below. In total, 551 recipients read the newsletter, 75 opened the online-link to the questionnaire, and 75 participants completed the survey. This corresponds to a 14% response- and 100% completion-rate. The online link was open from May 12th 2022 until August 24th 2022.

The questionnaire was developed interdisciplinary by the author team and was divided into five parts in order to circumscribe the medical background of the anonymous participant (questions 1-3), to reveal whether consumption of substances in leisure and elite sports is regarded as a health problem (questions 4-9), to quantify the individual contact points with doping in daily clinical practice (questions 10-13), to get an idea of the sports physician’s personal opinion with regard to their role concerning matters of doping and substance abuse in sports (questions 14-15), and to identify the most valuable information resources about doping prevention provided by the national anti-doping organization (questions 16-18). It involved 18 questions with 2-4 single choice options respectively (except question 17 in which the participant had to choose his/her top three options). To facilitate easy answering the questionnaire was provided online by SurveyMonkey®. In the course of this questionnaire it was possible to place an individual comment on every question, to skip specific questions or even to fill out the questionnaire twice.

In the context of wording and comprehension within an online-questionnaire it is essential to define the terms of “doping”, “not-prohibited”, and “prohibited”. Therefore, according to the World Anti-Doping Agency (WADA), which was formed in 1999, doping is defined as prohibited artificial performance enhancement on the basis of the “doping list”. This list reflects a specification of prohibited substances and methods indicating what substance/method is forbidden in sport and when [6]. As a consequence, a substance/method appears on the prohibited list, if it satisfies any two of the following three criteria:

1. □It has the potential to enhance or enhances sport performance.
2. □It represents an actual or potential health risk to the athlete.
3. □It violates the spirit of sport as outlined in the WADA anti-doping code [7].

In summary, within the questionnaire the term “prohibited” refers to substances on the WADA doping-list, whereas “not-prohibited” substances such as specific painkillers are not part of this list.

Results

Description of the sample (questions 1-3): There was a well-balanced distribution of sports physicians working in a private practice (52%) or in a hospital (46%) respectively. Furthermore, respondents revealed a representative distribution of sports medical experience among them. 19% (n = 13) received their sports medicine accreditation in the last two years (2020-2022), 41% (n= 28) between 2010-2019, 23% (n = 16) between 2000-2009, 13% (n=9) between 1990-1999, and 4% (n = 3) between 1980-1989. Additionally, the participants were questioned on what percentage of their time was spent on actually practicing sports medicine, besides their daily work, within their primary discipline during the course of the week. Here 31% (n = 22) said that they invested >50% of their weekly working time to the care of athletes, 17% (n = 12) quantified their sports medical efforts as high as 20-50%, 25% (n = 18) as 10-20%, and 27% (n = 19) as 0-10%.

Substance/doping abuse as a health problem (questions 4-9): In order to evaluate whether doping is considered a relevant health problem by sports physicians, the authors differentiated between elite and leisure sports both in Switzerland, as well as worldwide. In elite sports, 65% (n = 49) of physicians considered abuse of prohibited performance enhancing drugs as a health problem in Switzerland, respectively 90% (n = 64) identified it as a global health issue. In contrast, 76% (n = 57 out of 75 responses) considered it to be a problem in leisure sports in Switzerland, respectively 81% (n = 57 out of 70 responses) worldwide. Finally, consumption of not-prohibited medication, such as painkillers, was interpreted as a health problem in leisure sports in Switzerland by 74% (n = 55), and 71% (n = 50) with respect to a global phenomenon.

Quantification of doping issues in daily clinical practice (questions 10-13): The participants were asked to estimate how many times they have been contacted by athletes (leisure or elite) in order to prescribe/advise him/her with regard to prohibited performance enhancing drugs within a two years period. As a result, the majority stated that they have never been contacted by athletes either for prescription (64%, n = 48), nor for doping use-instructions (51%, n = 38). Approximately one third of sports medical practitioners were asked for prescription at least 1-5 times within two years in order to prescribe

(35%, n = 26), or advise (39%, n = 29) on doping agents by their athletic patients. 1.3% (n = 1) reported they had been asked for prescription over 10 times within the last two years, and almost 10% (9.3%, n = 7) declared they received over 10 inquiries for guidance with respect to the use of prohibited doping substances within this specific time period. Interestingly, 55% (n = 41) of the respondents were never suspicious of possible drug abuse while performing a physical examination during the last two years of clinical work. 37% (n = 28) put on record that they assumed prohibited performance enhancing drug abuse at least 1-5 times. Only one physician suspected doping in more than ten cases in the course of a two years period of athlete's medical care. In the same time frame, almost one third, 27% (n = 20), of the sports physicians had seen 1-5 athletes with health impairment needing further medical attention/treatment due to the misuse of prohibited performance enhancing drugs. The majority of the sport medical specialists, accounting for 71% (n = 53) of the respondents, personally never saw athletes with serious health issues associated to doping.

Personal attitude about doping and the sports physician's role (questions 14-15): 87% (n = 65) of the participants replied that sport physicians should be skilled in order to consult and educate athletes/patients in respect to adverse side effects of prohibited performance enhancing drugs such as anabolic androgenic steroids, and 88% (n = 66) in respect to not-prohibited medication such as painkillers. On the other hand, athletes' education and consultation with regard to adverse side effects of doping issues (prohibited and not prohibited) should not be part of the sports physician's duty according to 12% of the participants (11%, n = 8 with reference to not-prohibited substances, and 13%, n = 10 with regard to doping).

Identification of information resources (questions 16-18): As a reflection of national anti-doping efforts in Switzerland which are provided by Swiss Sport Integrity (former Antidoping Switzerland) in close collaboration with Sport and Exercise Medicine Switzerland, the authors of this study asked the sports physicians whether they felt sufficiently informed and equipped in order to perform a consultation about "adverse effects of prohibited performance enhancing drugs in sports". Almost two thirds (64%, n = 48) felt they were up to this specific task. However, 36% (n = 27) did not feel comfortable about it. Furthermore, Swiss Sport Integrity online medication inquiry service ("Global Dro") was identified as the most useful anti-doping information resource by 68% (n = 48) of the physicians. The Swiss Sport Integrity website (61%, n = 43), and the annual letter including the anti-doping brochure and the list of allowed substances (56%, n = 40) all appeared to be similarly popular. Finally, 52% (n = 37) of the sports physicians wished for regular/further information concerning doping/anti-doping topics. Therefore, the majority of the participants favored regular newsletters and practical clinical case studies in order to address such issues.

Discussion

Within a French cohort of general practitioners (GP) 19 years ago, 89% stated that the GP has a role to play in doping prevention [5]. In correspondence to this, also 88% of Swiss sports medicine doctors from various disciplines supported the idea that sports physicians should be skilled in order to educate and consult athletes about misuse and potential adverse side effects of agents such as painkillers (not-prohibited) or anabolic-androgenic-steroids (prohibited by WADA). Interestingly, according to Laure et al.

a significant part of French GPs, (77%), considered themselves poorly prepared to participate in doping prevention [5]. Even within the survey-cohort of Swiss sports medical specialists there is still a significant amount of 36% who do not feel sufficiently equipped to perform a consultation about adverse effects of prohibited performance enhancing agents in their personal practice/clinic. Paradoxically, almost half of the Swiss respondents (48%) expressed no need for further information/education concerning these topics. Either Swiss sports medicine practitioners are already very well educated in questions regarding substance abuse in sports, or there might be a certain reluctance with respect to doping-associated topics. Therefore, it might be beneficial for every sports physician in order to keep any potential discussion relating to illicit artificial performance enhancing substances/methods outside the entrance of their sports clinic. Nevertheless, a majority of the 52% Swiss sports physicians who voted for regular/further information concerning doping topics gave preference to frequent newsletters and practical clinical case studies or workshops in order to keep up-to-date concerning anti-doping issues. As a matter of fact, regular up-dates about medically relevant developments referencing anti-doping efforts represent an indispensable requirement of sports medicine practice.

Based on several comments survey participants identified a relevant issue with regard to passive or inadvertent absorption of illicit substances. In fact, as the principle of strict liability is in place there is no doubt that an athlete remains fully responsible for each medication he/she takes. This needs to be respected and all athletes, staff and medical personnel need to be aware of it. However unintentional doping in sports remains an issue as analytical methods can't distinguish between a sample from a cheater and one from an athlete who was unintentionally exposed to a doping agent [8]. As a primary premise (and in favor of all athletes we care for) it is essential for every sports physician involved in doping controls in order to be "informed of the data that either support or refute an athlete's claims of unintentional positive testing and that he or she contributes to a program wherein adequate education and policy establishment help to limit its likelihood" [9]. In this connection, Anderson summarized the four most important sources of unintentional doping such as insufficient education of the athlete, passive exposure, ingestion of tainted food agents, and abnormally high levels of physiologically occurring substances [9].

Further supplementary information to the discussion of Swiss attitudes about "doping and the sports physician's role" is represented by the fact that doping users' attitudes towards physicians might be ambiguous. Pope et al. stated that 56% of anabolic steroid users had never told their physician about their use, because they felt that their physician might lack the necessary knowledge about, for example, on anabolic steroids [10]. Within the last two years of clinical work 55% of the Swiss physicians never suspected that their patient/athlete was using prohibited substances while performing a physical examination. Furthermore, within the same time span, 71% of sports doctors never saw an athlete with serious health impairment due to the use of prohibited performance enhancing drugs. Almost 27% of the physicians saw such relevant side-effects on an occasional basis such as one to five times within two years. Analyzing the data of this survey there seems to be a discrepancy between personal assessment concerning doping as a (public) health risk which was identified as such by 65% of the sports physicians with regard to elite sports, respectively by 76% with respect to leisure sports in Switzerland. Additionally, more than 30% of the physicians practiced >50% sports medicine during one week, but only 8% had the suspicion of prohibited performance enhancing drug use more than six times within two years. With regard to the fact that 88% of anabolic steroid users demonstrate at least one suspicious symptom of

consumption [11] one would expect a higher detection rate with regard to statistical probability [12].

Limitations

This questionnaire focused on collecting quantitative (and some qualitative) data from a predefined group (Swiss sports medicine physicians) and contained primarily descriptive and analytical ends. Therefore, this study revealed several limitations. First, due to its partly retrospective character a certain risk of “memory-bias”, especially in questions 10-13 cannot be avoided. Second, the respondents were asked about the percentage of time spent during the week actually practicing sports medicine. As a matter of fact, there was no specification in the questions themselves whether the respondents worked full-time (100%, five days a week) or part-time. Third, especially with regard to the amount of sports medicine consultations in private practices and clinics the Covid-19 pandemic could have had a negative effect, what may dilute the analysis based on the actual questionnaire.

With reference to the questions 14-15 about personal opinions on doping in sports, (“should sport physicians be skilled in order to educate and consult athletes/patients in reference to adverse side effects of prohibited performance enhancing drugs”) it is noteworthy to mention that the sequence “... and consult” might have been misleading, because several respondents commented on that in the sense of “no sports physician would like to instruct an athlete in taking anabolic androgenic steroids”.

Finally, due to the protection of anonymity and traceability of the participants the authors of this study deliberately avoided questions concerning gender, medical specialty or detailed information about the work-place character or location.

Conclusion

Swiss sports medicine practitioners identified doping as a significant health problem both in leisure, as well as in elite sports. Furthermore, consumption of non-prohibited available medication such as painkillers were revealed as another relevant health issue. Almost 9 out of 10 sports medicine specialists in Switzerland advocate for educating athletes (leisure and elite) on the adverse side effects of prohibited and not-prohibited drugs in sports. Here, “Sports & Exercise Medicine Switzerland” may adapt and optimize the education and training of sports medicine practitioners according to these insights with the support of “Swiss Sport Integrity”. Ultimately, re-evaluation of sports physician’s attitudes towards substance abuse both in leisure and elite sports might become object the of repetitive surveys.

Practical implications

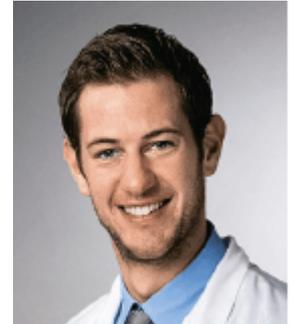
- Swiss sports medicine practitioners identified doping as a significant health problem both in leisure, as well as in elite sports.
- Consumption of not-prohibited available medication such as painkillers is a relevant health issue.
- Almost 9 out of 10 sports medicine specialists in Switzerland advocate for educating athletes (leisure and elite) in reference to adverse side effects of prohibited and not-prohibited drugs in sports.

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Corresponding author

Roman Gähwiler
Zentrum für Gefässmedizin Mittelland
Täferstrasse 1, CH-5405 Baden
Tel. 056 483 00 80
E-Mail: roman.gaehwiler@angiologie-aargau.ch



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