When kissing can result in an adverse analytical finding during doping control: about 2 cases where hair testing was determinant for the athlete

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Introduction

In doping situation, the sanction is ineligibility for a specific period (that can be for life, in case of recidivism). Although the code of World Anti Doping Agency (WADA) considers a doping offence when a banned drug is found in the athlete's urine, irrespective of reasons, route(s) of exposure, contaminations (food, drinks, body …) or manipulations, this is not the case in forensic medicine, where additional investigations can be performed.

Aims

In some specific cases, the sport authorities have accepted that adverse analytical findings (AAF) can be documented by alternative methods, such as hair testing. The aim of this presentation is to review 2 recent cases involving cocaine and the perspectives of hair testing in doping control.

Methods

Hair samples were collected and analysed for cocaine and metabolites by GC/MS using an accredited method. LOD of the procedure is 10 pg/mg.

Results

In urine, athlete A tested positive for benzoylecgonine at 151 ng/mL and minute amount of parent drug was identified. It is considered that the exposure occurred about 12 hours before urine collection. Athlete B tested positive for benzoylecgonine at 60 ng/mL and it is considered that the exposure occurred about 30 hours before urine collection. Given the pharmacological properties of cocaine, it was submitted to the anti-doing panels, including the Court of Arbitration for Sport and accepted by them that the total amount of cocaine that entered into the athletes' body was less than 5 mg. Segmental hair test demonstrated in both cases that the athlete was free of cocaine. There is scientific literature indicating that the minimal detectable dosage of cocaine in hair is about 15 mg. Thus, the hair findings confirmed the urine interpretation. A review of the potential sources of contamination (drinks, surface, kitchen tools …) proposed that it was more than likely that the origin of cocaine was a consequence of kissing a girl who add recently sniffed the drug with low amounts still on her lips. The anti-doping panel judged that no fault or negligence has to be retained. Instead of the standard ineligibility of 2 years, one athlete was sentenced for 7 weeks and the other was allowed to return to playing with immediate effect.

Conclusions

It is the opinion of the author that hair testing will present a more accurate reflexion about doping practices than some urine tests. However, it seems that some political issues prevent the routine use of this matrix. A global approach about the interest of alternative specimens (including oral fluid to document recent cannabis use) should be developed among active researchers. As there is a debate about the true prevalence of doping (some national bodies consider that the prevalence is fair higher that the official 1-2 % of AAF), it seems that it is the responsibility of WADA to consider hair as a valid specimen.

Key words: hair, doping, cocaine

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