Tour de chaos

Giuseppe Lippi, Massimo Franchini, Gian Cesare Guidi

Doping in sport should be addressed by prevention rather than prosecution

Competition is a part of human nature. It has contributed substantially to evolution and survival, often revealed as an unconditional inclination to dominance. Although success in competition should be achieved by intensive training and uncompromising mental attitude, the celebrity and economic benefits accrued from success in competitive sports have often persuaded athletes to use alternative, occasionally unfair and dangerous, ways of enhancing their performances. There is a long history of fraud in sporting competitions, originating from early times. However, revolutionary advances in biology and biochemistry have profoundly distorted the situation, providing unscrupulous athletes with sophisticated performance-enhancing substances and techniques.¹ From the evidence of the widespread use of illicit and potentially harmful methods, several sports federations, in conjunction with the medical community, have adopted increasingly complicated and comprehensive systems of control to overcome the serious problem of doping in sport.

Despite the full commitment of the World Anti-Doping Agency (WADA) and the International Cycling Union (UCI), there is evidence that athletes are testing positive at antidoping controls on a regular basis. The saga of the 2006 Tour de France is disappointing. Cycling fans have always thought that the greatest cycling competition in the world, next in terms of audience and media involvement to the Olympics and the football World Cup, was an endurance race in which cycling performance and racing ability would have been the main requisites for wearing the yellow jersey in Paris. However, recent developments have profoundly altered this scenario, transforming the Tour into an elimination race. Just 24 h ahead of the prologue start in Strasbourg, nine riders from five teams were ruled out of the race, suspected of doping by an international probe based on blood transfusions involving more than 200 athletes from different sporting disciplines. This huge doping scandal, conventionally known as the "affair

Fuentes", began in an ordinary apartment in Madrid, where the Spanish police discovered the covert structure of an international performance-enhancement business; they seized more than 200 blood bags, along with doping records and several other doping substances. The investigators were able to match code names of athletes with their highly detailed doping records.² In the prosecution, the American rider Floyd Landis, who wore the 2006 yellow jersey in Paris, tested positive for abnormal concentrations of testosterone after winning stage 17 and is now set to lose his title. If this were not enough, the runner-up Oscar Pereiro of Spain, who would probably have been awarded the yellow jersey, is under investigation for testing positive for the banned substance salbutamol! Metabolites of this drug, often prescribed for asthma, were discovered by the French antidoping body, AFLD, in Pereiro's urine sample after stages 14 and 16. Although the authority of the AFLD is limited to French soil only, Pereiro may not be allowed to take part in the 2007 Tour and could be stripped of second place in the 2006 race until he has been definitely cleared of this allegation.

These disappointing events warrant further consideration. Firstly, the unexpectedly high number of cyclists still involved in doping cases clearly indicates that the strict control strategies adopted by sports federations and antidoping organisations will probably not modify this trend. We must assume that the athlete's desire to win, along with the vision of glory and money, will always overcome the risk of being found guilty. Different and multifaceted strategies are needed, which should be based on preventing rather than identifying or criminalising doping. Once the young athlete becomes familiar with unfair practices, it is difficult to modify this attitude. It is clear that controls, suspensions and civil and penal sanctions are not reliable deterrents.

Another question is: are antidoping controls absolutely reliable? This is probably the foremost question that should be answered. In the specific case of the 2006

Tour de France, former winner Floyd Landis has denied ever taking performance-enhancing drugs. His key defence is the contention that the National Laboratory for Doping Detection in Paris made technical and analytical errors. In testosterone cases, the first level of testing is to measure the ratio of testosterone to epitestosterone (T/E ratio). A ratio higher than 4:1 triggers a further test based on the measurement of trace isotopes of carbon in the urine sample. The documents Landis has posted show that the laboratory measured the T/E ratio in his urine sample at least three times, producing three different results: 4.9:1, 5.1:1 and 11.4:1. A variety of additional reasons were offered for the failed test: one was that he drank whisky and beer on the night before the incriminating stage. Additional explanations were dehydration, anti-inflammatory injections for hip pain, and natural metabolism. So far, the situation is unresolved. However, this would not be the first case of an athlete being cleared of allegations of using banned performance-enhancing drugs after negative results on a second drug test, as recently documented by the case of five-time Olympic medallist Marion Jones.

The third crucial issue is the hullabaloo when an athlete tests positive. Doping cases are not supposed to be made public until they are resolved, but most become public through the media once a positive "A" test is confirmed. There is a tendency for there to be access to confidential information on previous tests of athletes before a definitive result, either positive or negative, is released by the competent sport authority and antidoping organisation. Enormous emphasis was given to the exclusion of the nine riders before the official start of the competition in Strasbourg. On some occasions, these athletes have been judged by the media in advance of the sport authorities and declared guilty on the basis of contradictory evidence, causing enormous human and financial problems and ultimately jeopardising their careers. None of these athletes has yet been charged. On the contrary, some have been completely cleared and are free to race. Landis criticised officials from the UCI and WADA for announcing the results of his test without analysing the second sample, as normally takes place in the antidoping procedure. He also claimed that the test was not conducted anonymously, saying he had evidence to prove that laboratory staff had access to the names of the cyclists whose samples were being tested. In the Pereiro case, it appears that the UCI had allowed him to use salbutamol under the therapeutic use exemptions

scheme. However, AFLD claim that Pereiro's team did not complete the relevant medical forms. Regardless of the definitive conclusion of the cases, all these riders have been designated as doping athletes by the media, with potential detrimental economic and moral consequences. This is unacceptable, considering that a definitive test result may be unavailable for several months after the opening of the case.

Finally, the overall economic costs of the fight against a doping allegation deserve consideration. WADA is the international independent organisation created in 1999 to promote, coordinate and monitor the fight against doping in sport in all its forms. Composed of and funded equally by the sports movement and governments of the world, WADA received its first 2 years of funding (US\$18.3 million) from the Olympic Movement. Since 2002, according to its statutes, WADA's funding is sourced equally from the Olympic Movement and the governments of the world. The total budget for the year 2006 has been estimated at nearly US\$24 million, 60% for research, 15% for out of competition testing, 15% for education and 10% for contingencies.³ The budget of the Australian Sports Anti-Doping Authority (ASADA) for the period 1 July 2005 to 30 June 2006 was \$A13.681 million.⁴ The total revenue from grants and other financial support of the US Anti-Doping Agency (USADA) reached US\$10.9 million in the year 2005.⁵ These are only part of the huge economic resources currently devoted to the fight against doping worldwide, which are predicted to reach or exceed US\$10 billion. According to the most recent statistics of the US National Heart Lung and Blood Institute (NHLBI), the projected total economic cost of illness due to blood-clotting diseases and red blood cell and bleeding disorders in 2006 is US\$12.6 billion.⁶ Therefore, in practice, healthcare systems and national governments worldwide are expected to devote to the fight against doping the same resources that the US government

dedicates to prevention and treatment of diseases that cause great morbidity, mortality and economic burden for individuals, families and the entire population. Is this really necessary and morally acceptable?

In his editorial on doping in the January issue,⁷ Paul McCrory emphasised that "there may be a fundamental failure of the doping control mechanisms in sport". This is undeniably true. The system does not work at all. We agree with the warning that a strategy based on prosecuting athletes to protect their health is not necessary, and it may even turn out to be unproductive and costly. Many pathologies begin early in life; their early detection and control can reduce the risk of disability and can delay death. Similarly, the use of unfair practices starts long before athletes turn professional. We believe that the "magic bullet" in the future should be prevention rather than authoritarianism and criminalisation.

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Authors' affiliations

Giuseppe Lippi, Gian Cesare Guidi, Sezione di Chimica Clinica, Dipartimento di Scienze Morfologico-Biomediche, Università degli Studi di Verona, Verona, Italy

Massimo Franchini, Servizio di Immunoematologia e Trasfusione, Azienda Ospedaliera di Verona, Verona, Italy

Correspondence to: Professor G Lippi, Sezione di Chimica Clinica, Dipartimento di Scienze Morfologico-Biomediche, Università degli Studi di Verona, Ospedale Policlinico G.B. Rossi, Piazzale Scurio, 10, 37134 Verona, Italy; ulippi@tin.it

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COMMENTARY

The use of rules that are not completely defined for the "custody chain" of antidoping specimens is an enormous problem, which influences the reliability of the controls and the compliance of the athletes. Moreover, uncontrolled and unofficial publication in newspapers of previous tests, as happened in August 2005 in the case of positive analyses for Lance Armstrong in the 1999 Tour de France, worsen the scenario. New techniques, instruments and variables are sometimes proposed by sports federations and antidoping agencies before scientific validation. The preanalytical phase of analysis (storage, transportation, custody, identification, etc) is crucial. The use of certain markers for antidoping purposes must be preceded by studies on biological variation and effects of exercise on their concentrations (eg, growth hormone and haematological variables). The transfer of laboratory variables and their reference intervals from pathology to sports medicine and antidoping research is questionable and sometimes inappropriate. A debate on these arguments is to be recommended; this article is a good beginning.

Giuseppe Banfi

IRCCS Galeazzi and University of Milan, Italy;
giuseppebanfi@supereva.it