Ethical considerations for experiments involving elite athletes and “doping”

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TO THE EDITOR: Siebenmann et al. (5) recently published a double-blind, placebo-controlled study where “cyclists and triathletes” who “participated in endurance competitions on at least national levels,” were submitted to hypoxia (16 h/day) or placebo for 4 wk. Isovolumetric hemodilution, removing the excess blood gained through the hypoxic intervention and replacing it with a plasma volume expander (Voluven 6%, Hydroxyethylstarch), was then performed (4) to differentiate between the effect of the increased red blood cell mass and other metabolic adaptations. The blood (or saline in the placebo group) was later reinfused, the amount being at least 190 ml. It appears that blood (re-)transfusions and application of plasma expanders were conducted within the postexposure period.

These manipulations and their significance for hematological and performance variables, as well as the ethical implications, were not discussed explicitly in either of these articles. Given the sensitivity of the topic, it is surprising that the studies used competitive athletes who likely were license holders of their respective federations and thus bound to Word Anti-Doping Agency (WADA) antidoping regulations (6). Under these regulations, both blood removal and reinfusion and using plasma volume expanders are forbidden. Therefore, the athletes who volunteered to participate are in conflict with antidoping rules.

It is unclear whether the authors disclosed this conflict to their ethics committee or to the athletes when obtaining informed consent. The authors are applauded for their efforts to clarify the mechanisms of action of hypoxic training in the most relevant population—elite athletes—but their publications should have discussed these issues, especially in light of the latest doping revelations in endurance sports and their obvious implications for sports science (2). Stating that the interventions could be interpreted as “doping,” noting whether they had been discussed with and condoned by appropriate antidoping agencies, or discussing the athletes’ nonparticipation in competitions for a certain time after the interventions might have clarified the issue.

As a recent example of the gravity of such interventions without intention to gain competitive advantage, the removal, ultraviolet irradiation, and immediate reinfusion of 50 ml of blood for immune treatment resulted in an investigation by their National Anti-Doping Organization and WADA (3). International publications in the field have also addressed the topic of doping and scientific data, albeit from a slightly different angle (1). This demonstrates the need for 100% transparency in this area to maintain credibility of sports science and medicine in the scientific community. Research involving elite athletes continues to be important in exercise physiology. Nevertheless, the use of methods or substances that breach WADA regulations for research on competitive, licensed athletes, may compromise those athletes’ “doping status.” This must be considered and resolved up front on an ethical as well as legal point of view if such research is to continue.

DISCLOSURES

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AUTHOR CONTRIBUTIONS


REFERENCES