

MELDONIUM – A NEW CHALLENGING SUBJECT IN THE PERFORMANCE SPORT

Tatiana TIMERCAN

Nicolae Testemitanu State University of Medicine and Pharmacy, Republic of Moldova
National Anti-Doping Agency, the Republic of Moldova

Corresponding author: Tatiana Timercan, e-mail: tatiana.timercan @usmf.md

Keywords: *meldonium, COVID, WADA, Prohibited List, doping.*

Introduction. Nowadays sports have become a business that breaks any rules of Olympic ethics in order to win. The Doping phenomenon with artificial increase of athlete's performance opposes the principle of fair and equitable competition. Abusive use of performance-enhancing drugs, such as meldonium, is widespread. World Anti-Doping Agency (WADA) Monitoring Program 2015 reported that about 25% of doping tests were positive for meldonium, they are the basis for the inclusion, since January 1, 2016, of meldonium in WADA International Standard Prohibited List as a metabolic modulator prohibited in- and out-of-competition. The COVID-19 pandemic due to the high risk of cardiovascular comorbidities has fostered an increase in Therapeutic Use Exemption (TUE) requests for the use of meldonium as cardio protector, posing a challenge to sports medicine.

Aim. Highlight the bioethical and medical aspects of TUE requests for the use of meldonium in post-COVID recovery period by athletes.

Material and methods. By applying mixed research methods within the State Program project "The phenomenon of doping in young athletes in the bioethical-medical approach" the prevalence of TUE requests for the use of meldonium as a prophylactic medication for ischemic cardiac problems in athletes with COVID-19 infection was studied. The data from official reports published on the website of National Anti-Doping Agency (NADA) and Therapeutic Use Exemption Committee (TUEC) of Republic of Moldova was analyzed in order to define the realities of meldonium use in sports.

Results. Meldonium is an anti-ischemic medicine that is not used (no Food and Drug Administration approval) in the United States and most of West-Europe, but easily available without any medical prescription (as Mildronate, Grindex) in Russia, Ukraine, Belarus, Moldova and other Eastern European countries. The medicine is not included in any Clinical Protocol or Guide, but because it is registered at the State Agency of Medicines of Republic of Moldova, it can be prescribed at the doctor's decision to any patient with cardiac or cerebrovascular (acute or chronic) issues. According to the manufacturer description, meldonium restores the oxygen balance/supply in ischemic tissues and increases the endurance performance. In 2016, WADA included meldonium as a non-specified substance (metabolic modulator similar to AMPK) in class S4 – Hormone and Metabolic Modulators from WADA Prohibited List. Due to high rate of cardiac comorbidities caused by COVID-19 pandemic, and described metabolic, adaptogenic, antianginal, cardioprotective and antihypoxic effects of meldonium, recently was noticed an increase of meldonium use for cardio protection in patients with SARS-CoV-19 infection.

Conclusions. It was established that meldonium has high adaptogenic potential in physical and mental overloads, improving physical stamina and performance. The use of meldonium has become a challenging issue for sports medicine and WADA, has been constantly monitoring the data on the use of meldonium, as well as the number of TUEs or potential TUEs in different regions of the world, because nowadays the line between medicine and doping is very thin.

Notă: The study was carried out with the financial support of the project "The phenomenon of juvenile doping in athletes in the bioethical and medical approach", number: 20.80009.8007.19, financed by NARD.