A Study of the Influence of the Dietary Supplement Antihot® on the Parameters of Working Capacity in Athletes Specializing in Kyokushin Karate

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Abstract. The author has conducted a study of the influence of the dietary supplement (DS) Antihot® on the parameters of working capacity in athletes specializing in Kyokushin karate. Twenty athletes of both genders, who were qualified as Candidates for Master of Sports and upward (rating of Candidate for Master of Sports provides practicing this sports event for at least five years and winning prize places at Ukraine’s championships), participated in the experiment by 10 persons in the control and experimental groups, respectively. The athletes from the experimental group were taking DS Antihot® under the following regimen: 3 days - oral intake, 3 days - interval, in the whole - 4 cycles of DS Antihot® administration. At that, the athletes were taking the parapharmaceutical in doses of one capsule 3 times a day after meals (it amounts to 0.6 g of bemithylum as an active substance of DS Antihot® per day), and during the following cycles - one capsule 2 times a day after meals (0.4 g of bemithylum per day). The athletes from the control group were taking a placebo under the same regimen, respectively. To evaluate the level of physical and technical preparedness of the tested athletes, the following pedagogical tests were applied: a 60-meter run - for assessment of speed qualities; a 3000-meter run - for evaluation of endurance; pulls-up - for evaluation of strength abilities; calculation of technically correct kicks made against the special-purpose apparatus “Makiwara” (jodan mawashi geri - circular kick against the upper section) per one minute (Makiwara test) - for evaluation of technical preparedness. The estimation of DS Antihot® tolerance was made employing a subjective appraisal of the athletes’ health status, electrocardiography monitoring, complete and biochemical blood counts and total urine tests.

It was determined that DS Antihot® administration during the preparatory period according to the described scheme promoted the boost of general endurance in athletes specializing in Kyokushin karate, but did not exhibit an effect upon speed qualities, strength parameters (strength endurance) and the indices of technical qualification. In the mean time, the investigated parapharmaceutical is well tolerated by the athletes, which can be suggested due to the absence of health status complaints, lack of pathological electrocardiograph changes, findings of complete and biochemical blood counts and total urine tests in the athletes from the experimental
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The obtained data allow considering the administration of this parapharmaceutical to be expedient in the practical training of top-class athletes specializing in combat contact sports.

key words: DS Antihot®, Kyokushin Karate, Parameters of Athlete Working Capacity.

Introduction

Today the call for application of ergogenic agents in the practice of athlete training, particularly of highly skilled ones, does not give risk to doubt either in sports physicians or sports educators, and above all in athletes. Hence, the study of the efficacy of new ergogenic agents has been a major trend of sports medicine.

Among up-to-date, highly effectual agents to boost sports working capacity, one of the foremost positions pertains to actoprotectors - agents increasing human tolerance to physical loads without rising the oxygen consumption and heat release.

Actoprotectors refer to metabolic agents of non-exhaustive type of action, which to some extent can enjoy an antihypoxic activity. They are low-toxic and do no cause unwanted effects even with long-term usage. Thus, study of the efficacy of substances with actoprotector properties is an important problem for sports science.

Subject to their chemical composition actoprotectors may be divided into 2 groups: 1) adamantane derivatives (bromantane, chlodantane); 2) benzimidazole derivatives (bemithylum, tomerzole). At present adamantane derivatives cannot be employed in elite sports. This is related to the fact that bromantane, which is produced in the Russian Federation for the needs of military and space medicine under the commercial name “Ladastene”, is included in the WADA Prohibited List (class S6, stimulating agents), and chlodantane is under staged pre-clinical probing on test animals and has not been certified for clinical use yet. Benzimidazole derivatives have nothing to do with doping drugs and they can be employed in sport without any limitations. Only bemithylum (2-ethylthiobenzimidazo hydrobromide) is practicable for sports preparation, while tomerzole like chlodantane is at the stage of pre-clinical study and has not been allowed to clinical use yet (Bobkov et al., 1984; Smirnov, 1989; Kulinenkov, 2001; Makarova, 2002; Makarova, 2003; Oliynyk & Gunina, 2008).

The effect of bemithylum resides in its selective stimulation of protein synthesis