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LINK WITH VITAMIN D STATUS AND RESPIRATORY TRACT INFECTIONS MORBIDITY WITH OVERTRAINING SYNDROME AMONG ELITE WRESTLERS

Introduction Athletes are at risk for injuries and their prevention and rehabilitation are aspects of great importance. The cause of upper respiratory symptoms in athletes can be uncertain, but the majority of cases are related to common respiratory viruses, viral reactivation, allergic responses to aeroallergens and exercise-related trauma to the integrity of respiratory epithelial membranes [1]. Above mentioned problems are connected or could be connected with vitamin D deficiency/insufficiency, which is widespread throughout the world, including countries subtropical and tropical countries [2, 3].

Purpose of the research: the study is to determine possible association vitamin D level with acute upper respiratory tract infections as well as with overtraining syndrome among elite wrestlers..

Research methods. The study was planned as a prospective, non-interventional, observational study. Participants included 40 elite wrestlers and 60 control individuals. Serum levels of 25(OH) VD and TNF- α , IFN- γ and IL-4 were detected by ELISA technique. Parasites were diagnosed by triple coproscopy. OS was diagnosed on the basis of typical symptoms and decreased performance. Morbidity and frequency of acute URTI in participants were determined by self-reported questionnaire and medical cards.

Results and Discussion

Analysis of diet features of athletes revealed that 60% of athletes daily use food products with low content of vitamin D, only 40% athletes daily use food products with medium content of vitamin D. The study is the first experience of detection vitamin D level and its influence on acute morbidity among elite wrestlers in Uzbekistan. The predominance of vitamin D insufficiency was found in both groups of elite athletes and in the control individuals despite the large number of sunny days in the country (>300 days per year).

We found a significant elevation of TNF- α and decrease of IFN- γ in the athletes with vitamin D deficiency, which is a biomarker of inflammation. These data are in agreement with data of Willis [4] on correlation of vitamin D insufficiency with elevated level of TNF- α and decreased of IFN- γ . Pathophysiology of the OS has not been determined yet. Cytokine hypothesis seems to be close to reality, because the pro-inflammatory cytokines IL-1b and TNF- α affect the brain, causing a decrease in appetite, sleep disturbance and depression, cytokines can act directly on the central receptors or activate the axis hypothalamus-pituitary-adrenal glands, releasing stress hormones, which leads to the same effect [5]. There is evidence of an increase in the level of these cytokines in patients with depression. Thus, vitamin D deficiency can impose OS manifestation.

Conclusions: Vitamin D deficiency/insufficiency is widely spread both in elite wrestlers and the control individuals. Monitoring of vitamin D level in elite athletes with

subsequent correction is necessary. vitamin D deficiency/insufficiency in athletes correlates with high morbidity with URTI and could be associated with OS.

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