ISSN 2181-9300

DOI Journal 10.26739/2181-9300

БИОМЕДИЦИНА ВА АМАЛИЁТ ЖУРНАЛИ

9 ЖИЛД, 4 СОН

ЖУРНАЛ БИОМЕДИЦИНЫ И ПРАКТИКИ

ТОМ 9, НОМЕР 4

JOURNAL OF BIOMEDICINE AND PRACTICE

VOLUME 9, ISSUE 4

ТОШКЕНТ-2024

БИОМЕДИЦИНА ВА АМАЛИЁТ ЖУРНАЛИ

№4 (2024) DOI http://dx.doi.org/10.26739/2181-9300-2024-4

Саҳифаловчи: Хуршид Мирзахмедов

Контакт редакций журналов. www.tadqiqot.uz
ООО Tadqiqot город Ташкент,
улица Амира Темура пр.1, дом-2.
Web: http://www.tadqiqot.uz/; E-mail: info@tadqiqot.uz
Тел: (+998-94) 404-0000

Editorial staff of the journals of www.tadqiqot.uz
Tadqiqot LLC The city of Tashkent,
Amir Temur Street pr.1, House 2.
Web: http://www.tadqiqot.uz/; E-mail: info@tadqiqot.uz
Phone: (+998-94) 404-0000

ЖУРНАЛ БИОМЕДИЦИНЫ И ПРАКТИКИ

№4 (2024) DOI http://dx.doi.org/10.26739/2181-9300-2024-4

Верстка: Хуршид Мирзахмедов

Контакт редакций журналов. www.tadqiqot.uz
ООО Tadqiqot город Ташкент,
улица Амира Темура пр.1, дом-2.
Web: http://www.tadqiqot.uz/; E-mail: info@tadqiqot.uz
Тел: (+998-94) 404-0000

Editorial staff of the journals of www.tadqiqot.uz
Tadqiqot LLC The city of Tashkent,
Amir Temur Street pr.1, House 2.
Web: http://www.tadqiqot.uz/; E-mail: info@tadqiqot.uz
Phone: (+998-94) 404-0000

JOURNAL OF BIOMEDICINE AND PRACTICE

№4 (2024) DOI http://dx.doi.org/10.26739/2181-9300-2024-4

Page Maker: Khurshid Mirzakhmedov

Контакт редакций журналов. www.tadqiqot.uz
ООО Tadqiqot город Ташкент,
улица Амира Темура пр.1, дом-2.
Web: http://www.tadqiqot.uz/; E-mail: info@tadqiqot.uz
Тел: (+998-94) 404-0000

Editorial staff of the journals of www.tadqiqot.uz
Tadqiqot LLC The city of Tashkent,
Amir Temur Street pr.1, House 2.
Web: http://www.tadqiqot.uz/; E-mail: info@tadqiqot.uz
Phone: (+998-94) 404-0000

OBSTETRICS AND GYNECOLOGY

HEALTHCARE

THERAPY

SURGERY

PEDIATRICS

CHILDREN SURGERY

DENTISTRY AND MAXILLOFACIAL SURGERY

OTORHINOLARYNGOLOGY

PSYCHONEUROLOGY

ONCOLOGY AND RADIOLOGY

MORPHOLOGY

TRAUMATOLOGY AND ORTHOPEDICS

FORENSIC MEDICAL EXAMINATION

INFECTIOUS DISEASES

DERMATOVENEROLOGY

ISSN: 2181-9904
www.tadqiqot.uz
БИОМЕДИЦИНА ВА АМАЛИЁТ ЖУРНАЛИ
ЖУРНАЛ БИОМЕДИЦИНЫ И ПРАКТИКИ | JOURNAL OF BIOMEDICINE AND PRACTICE

УДК 616-007.251

RIZAEV Jasur Alimdjanovich
Doctor of Medical Sciences, professor
KHUSAINBOEV Shokhrukhbek Davronbekovich
Samarkand State Medical University

MODERN ASPECTS OF THE DIAGNOSIS OF OVERWORK SYNDROME IN ROWERS

For citation: Rizaev J. Alimdjanovich, Khusainboev Sh., Davronbekovich. Modern aspects of the diagnosis of overwork syndrome in rowers // Journal of Biomedicine and Practice. 2024, vol. 9, issue 4, pp.331-336

http://dx.doi.org/10.5281/zenodo.13710270

ABSTRACT

The aim of this study was to investigate the hormonal responses of male rowers at rest and short-term exercise. The subjects were 24 canoe rowers, males 14-18 years old, who were divided into two groups: athletes-rowers - 24 people systematically engaged in canoeing and having sport categories from I to III adult. The control group consisted of 12 students of the Faculty of Physical Education, who corresponded in age and gender to the main group. The subjects were offered to perform the test PWC 170, which was carried out in the following way: two five-minute loads on a bicycle ergometer Monark Ergomedic 828 E, power 50 watts, followed by a three-minute rest and a repeated five-minute load with a power determined by the formula PWC170. The peculiar dynamics in the concentration of blood plasma adipokines on the background of physical exercise and the peculiarities of overstrain were revealed.

РИЗАЕВ Жасур Алимджанович
доктор медицинских наук, профессор
ХУСАИНБОЕВ Шохрухбек Давронбекович
Самаркандский государственный медицинский университет

СОВРЕМЕННЫЕ АСПЕКТЫ ДИАГНОСТИКИ СИНДРОМА ПЕРЕУТОМЛЕНИЯ У ГРЕБЦОВ

АННОТАЦИЯ

Целью данного исследования было изучение гормональных реакций мужчин-гребцов в состоянии покоя и кратковременной нагрузки. Испытуемыми выступили 24 гребца на каноэ, мужчины 14-18 лет, которые были разделены на две группы: спортсмены-гребцы - 24 человека, систематически занимающиеся греблей на каноэ и имеющие спортивные разряды от I до III взрослого возраста. Контрольную группу составили 12 студентов факультета физического воспитания, по возрасту и полу соответствующих основной группе. Людей просили несколько минут покататься на специальном велотренажере, сделать перерыв, а затем снова покататься. Исследователи использовали формулу, чтобы измерить, насколько хорошо

они могли тренироваться. Выявлены своеобразная динамика концентрации адипокинов плазмы крови на фоне физической нагрузки и особенности перенапряжения.

RIZAYEV Jasur Alimdjanovich
tibbiyot fanlari doktori, professor
XUSAINBOEV Shoxruxbek Davronbekovich
Samarqand davlat tibbiyot universiteti

ESHKAK ESHUVCHILARDA ZO‘RIQISH SINDROMINI TASHXISLASHNING ZAMONAVIY JIHATLARI

ANNOTATSIYA

Olib borilgan ushbu ilmiy ishning maqsadi erkak eshkak eshishchilarning tanaffus va qisqa muddatli mashqlar vaqtidagi gormonal reaktsiyalarini o‘rganisdir. Kuzatuv ob’ektlar 14-18 yoshli 24 nafar baydarka va kanoeda eshkak eshuvchilar bo‘lib, ular ikki guruhga bo‘lingan: yani baydarka va kanoeda eshkak eshish bilan muntazam shug‘ullanadigan va I dan III gacha bo‘lgan sport toifalariga ega bo‘lgan 24 nafar sportchilar. Nazorat guruhi Jismoniy tarbiya fakultetining 12 nafar talabalaridan iborat bo‘lib, ular yoshi va jinsi bo‘yicha asosiy guruhga to‘g‘ri keldi. Mavzulardan PWC 170 testini o‘tkazish so‘raldi, bu quyidagicha davom etdi: 50 vatt quvvatga ega Monark Ergomedic 828 E velosiped ergometrida ikkita besh daqiqalik zo‘riqish, keyin uch daqiqa tanaffus va takroriy besh daqiqalik mashqlar. PWC170 formulasi bilan aniqlangan quvvat bilan. Jismoniy faollik va haddan tashqari zo‘riqish fonida qon plazmasidagi adipokinlar kontsentratsiyasining o‘ziga xos dinamikasi aniqlandi.

INTRODUCTION

Recently, the attention of domestic and foreign researchers has been attracted to various aspects of training of high-skilled canoe paddlers. Numerous researchers have revealed the important role of rowing tempo, stroke length, force application to the oar, boat speed dynamics, spatial and temporal indicators of upper body segments movement and other kinematic indicators of rowing technique. Analysis of the data of special literature showed that most of the scientific research on different directions of the training system of highly qualified canoe rowers was carried out in 70 - 90 years of the last century [4,6]. However, most studies were performed in model experiments using simulator equipment and analyses of video footage of rowing on water [1,13].

It is obvious from the above that the gap between the established theoretical foundations of the training system, the content of the training process and the current realities of Olympic rowing development, new scientific data revealing the ways and mechanisms of improving the efficiency of competitive activity and the growth of sports results of highly qualified rowers on canoes and rowers is rapidly increasing [8]. In the last 20 years, scientists have been studying fat tissue as an organ that can produce substances that affect our metabolism. Athletes sometimes push themselves too hard during training, which can temporarily make them perform worse and feel tired. This is called overexertion syndrome, and it can take a few days to a few weeks to recover from. Studies have shown that about 10% of endurance athletes experience this. While some tests can't predict overexertion syndrome, researchers are looking into using hormone levels to help identify athletes at risk. More studies are needed to see if hormone tests can accurately diagnose overexertion syndrome in sports like canoeing [9,11]. There are also no reliable diagnostic markers to distinguish between well-trained athletes, overtrained athletes and overtrained athletes. There is debate as to which performance test is most appropriate when attempting to diagnose these syndromes. There is insufficient scientific data in the literature on blood hormone status abnormalities in rowers and they are not standardized [2,7]. It should be noted that without adequate muscle recovery and rest, athletes may experience acute fatigue and reduced performance. In this context, the athlete may move from adequate training to overtraining and eventually to overtraining syndrome. Nowadays, numerous studies have established that physical activity exerts its effects also through the regulation of the endocrine function of adipose tissue, which makes adipokines an interesting molecular target. Indeed,

adipokines may reflect physiological changes such as muscle damage or inflammatory responses, which usually occur after strenuous exercise [3,5,12,14]. Thus, studying adipokines as potential markers in canoe paddlers undergoing intense training may allow sports physicians to more effectively screen athletes for overexertion syndrome. Moreover, the findings of adipokine dynamics during exercise are closely related to individual response to exercise, potentially leading to the implementation of new protocols for personalised training of canoe paddlers. The aim of this study was to investigate the hormonal responses of male rowers at rest and short-term exercise.

Material and methods of the study

The subjects were 24 canoe rowers, males 14-18 years old (height = 176.4 ± 6.7 cm; weight = 78.0 ± 12.2 kg; body fat content = 14.7 ± 7.6%), who were divided into two groups: athletes-rowers - 24 people systematically engaged in canoeing and having sports titles from I to III adult. The control group consisted of 12 students of the Faculty of Physical Education, who corresponded in age and gender to the main group. The research was conducted on the bases of training camps at the water stadium during the preparation of athletes of the national rowing and canoeing team of the Republic of Uzbekistan in February - March 2024. The people in the study had to ride a special bike for a test. They rode for five minutes, rested for three minutes, then rode again for five minutes. The researchers measured their heart rate before, during, and after the test. Training load, intensity and volume were monitored by strength and conditioning staff and supervised by the principal investigator to ensure that progress remained within ±10% of baseline load. Whole venous blood was collected in the morning on an empty stomach by venous puncture using VACUETTE vacuum systems (Greiner Bio-One, Austria). The choice of vacuum containers, taking into account colour markings and appropriate filler, is determined according to the method of biomaterial examination for each analyte. Containers with blood samples were mixed by slow and smooth turning 3-5 times, avoiding shaking. The blood samples were then subjected to centrifugation procedure at room temperature on a centrifuge at 3000 rpm for 15 minutes. The concentrations of leptin, adiponectin, resistin, and IL-6 were measured in serum by ELISA method using reagent kits "HUMAN LEPTIN ELISA" (Diagnostic System Laboratories Inc.) after some of the samples had been centrifuged on an automatic biochemical analyzer called "Mendray." ‘Human Resistin, Presage® ST2 Assay (B-Bridge International Inc., USA, 2020), Human Adiponectin ELISA Kit (B-Bridge International Inc., USA, 2020). Using HUMAN kits, the immunoenzyme method was used to investigate the activity of creatine phosphokinase. The SPSS 20 program was used to process the study's findings. Based on the idea of the spread of values, a method of evaluating the measured significance between the concentrated examples and tests were used to study the normality of the rotation of the concentrated on the thresholds. Adipocytes secrete leptin in proportion to adipose tissue mass, which means that the amount of leptin in the blood rises with adipose tissue mass. According to these findings, obesity is associated with postreceptor or transport-level leptin resistance. Excess leptin helps mask insulin secretion and causes insulin resistance in skeletal muscle and adipose tissue. Leptin, like insulin, controls the homeostasis of unsaturated fats, protects against improvement of lipotoxicosis. There are problems with compensatory oxidation of excess free fatty acids and activation of the non-oxidative pathway in leptin resistance. The result is the accumulation of non-oxidized free fatty acids and ceramide metabolism products that inhibit insulin-dependent glucose uptake in tissues. As a result, one of the most important factors in the development of insulin resistance and pancreatic cell dysfunction may be leptin dysfunction during the development of excess adipose tissue. TNF-α stimulates leptin secretion and its action is mediated by IL-1. Visceral adipose tissue synthesises and secretes bioactive substances into the blood with the ability to induce shifts in carbohydrate and lipid metabolism. Numerous biomarkers have an impact on the body's biological systems as a result of physical activity. The hormone adiponectin, which is only secreted by adipose tissues (Hu et al., 1996), is one such biomarker. Researchers have long been interested in the connection between circulating adiponectin levels and exercise. Although some studies have shown an increase in adiponectin levels following exercise (Bliiher M, 2015), others have failed to show any improvements after exercise (Fergusson et al., 2004; Nassis et al., 2005). This leaves the question of how exercise

affects adiponectin. Increased insulin sensitivity has been demonstrated through exercise (Corcoran et al., 2007; Hawley and Lessard, 2007; Parker et al., 2016).

Dynamics of plasma adipokines in canoe paddlers

Indicators	Stages of research	Rowers on canoes n=26	Control group n=12
Leptin ng/ml	I	12.84±1.69	10.13±1.07
	II	62.14±5.19	78.24±7.13
	III	69.7±5.54*	97.84±9.45
Adiponectin µg/ml	I	18.58±1.73	15.24±1.32
	II	22.54±2.18*	44.38±4.42
	III	31.89±3.08*	66.21±6.28
Resistin ng/ml	I	9.68 ± 1.04	8.04 ± 0.91
	II	21.49±2.13	25.61 ± 3.47
	III	24.13 ± 2.08*	33.68 ± 4.13
	I	312.45±19.81	179.53±12.81
Creatine phosphokinase U/l	II	365,13±18.69	246.06±16.72
	III	274.24±12.84	318.48±19.21

Note:* - significance of differences P<0.05 relative indicators of control groups

One proposed mechanism is an increase in plasma adiponectin levels. In muscle tissue, adiponectin stimulates free fatty acid oxidation, reduces intramyocellular lipid accumulation and improves muscle tissue sensitivity to insulin. As can be seen from the results presented in Table 1, short-term exposure to moderate-intensity aerobic weight training was accompanied by an increase in plasma adiponectin levels in canoe paddlers. Adiponectin is known to have known direct and indirect functions, primarily related to endothelial function, increased insulin sensitivity and inhibition of inflammatory mediators. Full-length adiponectin acts together with insulin to inhibit glucose production in the liver, whereas the globular domain stimulates fatty acid oxidation in human skeletal muscle. In addition, adiponectin directly increases nitric oxide (NO) production and adenosine monophosphate-activated kinase and indirectly reduces levels of C-reactive protein, and adiponectin reduces the expression of adhesion molecules in endothelial cells and exhibits its anti-inflammatory properties by reducing cytokine production by macrophages (through inhibition of nuclear transcription factor kappa signalling). An in vitro study showed that plasma adiponectin levels of 5-25 µg/ml had a significant inhibitory effect on tumour necrosis factor-α-induced monocyte adhesion and adhesion molecule expression, indicating an increased risk of adverse health effects at serum concentrations below this level. These results suggest that plasma adiponectin is altered by exercise in highly trained canoe paddlers. When a special protein called adiponectin is released into the body, it helps protect the blood vessels from damage and reduces inflammation. It also stops another protein called TNF-α from causing inflammation in certain cells. This helps prevent problems like cell adhesion and inflammation. Another protein called resistin can affect how the body uses carbohydrates and glucose. Researchers found higher levels of resistin in athletes who were training. As it is known, when resistin increases in blood, insulin resistance increases. Resistin reduces insulin-stimulated glucose uptake and may impair adipocyte differentiation. There is evidence that resistin is able to increase testosterone synthesis in the ovaries. The results of an examination of the activity of creatine phosphokinase in canoeists revealed that the enzyme's rate of turnover and characteristics of accumulation vary depending on the training loads used to develop the leading energy supply mechanisms. When people paddle a canoe really hard, it can make a part of their muscles stronger. Some experts think that the harder you paddle, the stronger this part of your muscles gets. This is because when you exercise, your body breaks down certain compounds to create energy. One of these compounds is creatine phosphate, which is broken down by an enzyme called creatine phosphokinase.

In kayaking, for the most part the muscles of the chest area are engaged with the exhibition of activities. In the special writing, it shows that using exercises that work the muscles in your chest more causes more stretching in your muscles than exercises that work your leg muscles. This might be because we use our legs more in daily activities and they are stronger, so they don't need as much stretching as our arms and chest do. Therefore, canoeists' high physical demands are not the only factor contributing to the development of overexertion syndrome. Sometimes when kids do too much physical activity, they can get tired and stressed out. This can happen because they have high expectations from their coaches or family, feel pressure to compete, have certain personality traits, or are dealing with problems in their personal life or at school. It's important to keep an eye on different physical and mental signs to make sure kids aren't pushing themselves too hard and getting overwhelmed. As a result, we propose an optimal aspect of the overexertion syndrome diagnosis that can assist sports physicians in determining the diagnosis of this overexertion in physical activity and excluding other potential causes of canoe paddler underperformance.

REFERENCES| СНОСКИ | IQTIBOSLAR:

1. Antuna-Puente B, Feve B, Fellahi S, Bastard JP. Adipokines: the missing link between insulin resistance and obesity. Diabetes Metab. 2008;34(1):2-11.
2. Bliiher M, Mantzoros CS. From leptin to other adipokines in health and disease: facts and expectations at the beginning of the 21st century. Metabolism. 2015;64(1): 131—45. doi: 10.1016/j. metabol.2014.10.016
3. Bliiher M. Adipose tissue dysfunction in obesity. Exp Clin Endocrinol Diabetes. 2009; 117(6):241—250.
4. Chen T.C., Lin K.Y., Chen H.L., Lin M.J., Nosaka K. Comparison in eccentric exercise-induced muscle damage among four limb muscles // Eur J Appl Physiol. – 2011. – No. 111. – Pp. 211–223.
5. Machado M., Brown L.E., Augusto-Silva P., Pereira R. Is exercise-induced muscle damage susceptibility body seg-ment dependent? Evidence for whole body susceptibility // J Musculoskelet Neuronal Interact. – 2013. – No. 13. – Pp. 105–110.
6. Machado M., Koch A.J., Willardson J.M., Pereira L.S., Cardoso M.I., Motta M.K., Pereira R., Monteiro A.N. Effect of varying rest intervals between sets of assistance exercises on creatine kinase and lactate dehydrogenase responses // J. Strength. Cond. Res. – 2011. – No. 25. – Pp. 1339–1345.
7. Machado M., Willardson J.M., Silva D.P., Frigulha I.C., Koch A.J., Souza S.C. Creatinekinase activity weakly correlates to volume completed following upper body resistance exercise // Res Q Exerc Sport. – 2012. – No. 83. – Pp. 276–281.
8. Saka T., Bedrettin A., Yazici Z., Sekir U., Gur H., Ozarda Y.. Differences in the magnitude of muscle damage between elbow flexors and knee extensors eccentric exercises // J Sports Sci Med. – 2009. – No. 8. – Pp. 107–115.
9. Акварон Э., Моначелли Ф., Борги Р., Ненциони А., Одетти П. Резистин: переоценка. Мех. Стареющий Дев. 2019 год; 178 : 46–63. doи: 10.1016/j.mad.2019.01.004.
10. Аскин Л., Абус С., Танриверди О. Резистин и сердечно-сосудистые заболевания: обзор современной литературы относительно клинических и патологических взаимосвязей. Курс. Кардиол. Версия 2022 г.; 18 : e290721195114. doи: 10.2174/1573403X17666210729101120.
11. Вуолтинахо К., Леппинен Т., Кекконен Р., Корпела Р., Мойланен Э. Бег марафона вызывает изменения в уровнях адипокинов и маркеров деградации хряща – новая роль резистина. ПЛОС ОДИН. 2014 г.; 9 : e110481. doi: 10.1371/journal.pone.0110481.
12. Деб А., Дешмук Б., Рамтеке П., Бхати Ф.К., Бхат М.К. Резистин: путь от метаболизма к раку. Перевод Онкол. 2021 год; 14 :101178. doi: 10.1016/j.tranon.2021.101178
13. Делаигль Алм, Йонас Ж.-К., Бош И.Б., Корню О., Бришар С.М. Индукция адипонектина

в скелетных мышцах воспалительными цитокинами: исследования in vivo и in vitro. Эндокринология. 2004 г.; 145 : 5589–5597. doi: 10.1210/en.2004-0503.

14. Диес Дж. Дж., Иглесиас П. Роль нового гормона адипоцитов, адипонектина, в заболеваниях человека. Евро. Дж. Эндокринол. 2003 г.; 148 : 293–300. дои: 10.1530/eje.0.1480293.

15. Inogamov Sh. M., Sadikov A. A., Rizaev Zh. A. METHODS FOR PREVENTION OF DAMAGE TO THE DENTAL APPARATUS AMONG ATHLETES PLAYING CONTACT SPORTS / / Biology. – 2021. – No. 1. – P. 125.

16. Raimkulova D.F., Rizaev Zh.A., Sadikov A.A. Assessment of endothelial dysfunction and oxidative stress in athletes of various sports // Problems of biology and medicine. – 2020. – T. 5. – No. 122. – pp. 109-112.

Статья поступила в редакцию 11.07.2024; одобрена после рецензирования 21.08.2024; принята к публикации 24.08.2024.
The article was submitted 11.07.2024; approved after reviewing 21.08.2024; accepted for publication 24.08.2024.

Информация об авторах:
Ризаев Жасур Алимджанович- д.м.н., профессор, ректор. Самаркандский государственный медицинский университет, Самарканд, Узбекистан. E-mail: sammi@sammi.uz, https://orcid.org/0000-0001-5468-9403
Хусаинбоев Шохрухбек Давронбекович - свободней соискатель кафедры медицинской реабилитации, спортивной медицины и народной медицины Самаркандский государственный медицинский университет, Самарканд, Узбекистан. E-mail: Medicalservisesam@mail.ru, https://orcid.org/0009-0000-8796-3413.

Источники финансирования: Работа не имела специального финансирования.
Конфликт интересов: Авторы декларируют отсутствие явных и потенциальных конфликтов интересов, связанных с публикацией настоящей статьи.
Вклад авторов:
Ризаев Ж.А. — идеологическая концепция работы, написание текста; редактирование
Хусаинбоев Ш.Д.— сбор и анализ источников литературы, написание текста.

Information about the authors:
Jasur A. Rizaev — DSc, professor, rector Samarkand state medical university. Samarkand, Uzbekistan; E-mail: sammi@sammi.uz, https://orcid.org/0000-0001-5468-9403
Khusainboev Shokhrukhbek Davronbekovich is a free applicant at the Department of Medical Rehabilitation, Sports Medicine and Traditional Medicine, Samarkand State Medical University, Samarkand, Uzbekistan. E-mail: Medicalservisesam@mail.ru, https://orcid.org/0009-0000-8796-3413.

Sources of funding: The work did not receive any specific funding.
Conflict of interest: The authors declare no explicit or potential conflicts of interest associated with the publication of this article.
Contribution of the authors:
Rizaev JA — ideological concept of the work, writing the text; editing the article;
Khusainboyev Sh.D. — collection and analysis of literature sources, writing the text.

ISSN 2181-9300

DOI Journal 10.26739/2181-9300

БИОМЕДИЦИНА ВА АМАЛИЁТ ЖУРНАЛИ

9 ЖИЛД, 4 СОН

ЖУРНАЛ БИОМЕДИЦИНЫ И ПРАКТИКИ

ТОМ 9, НОМЕР 4

JOURNAL OF BIOMEDICINE AND PRACTICE

VOLUME 9, ISSUE 4

Контакт редакций журналов. www.tadqiqot.uz
ООО Tadqiqot город Ташкент,
улица Амира Темура пр.1, дом-2.
Web: http://www.tadqiqot.uz/; E-mail: info@tadqiqot.uz
Тел: (+998-94) 404-0000

Editorial staff of the journals of www.tadqiqot.uz
Tadqiqot LLC The city of Tashkent,
Amir Temur Street pr.1, House 2.
Web: http://www.tadqiqot.uz/; E-mail: info@tadqiqot.uz
Phone: (+998-94) 404-0000