Impact Factor: 4.9

ISSN: 2181-0664
DOI: 10.26739/2181-0664
tadqiqot.uz/uzbek-medikal-journal

UZBEK MEDICAL JOURNAL

Volume 2, Issue 1

2021

ЎЗБЕК ТИББИЁТ ЖУРНАЛИ
УЗБЕКСКИЙ МЕДИЦИНСКИЙ ЖУРНАЛ | UZBEK MEDICAL JOURNAL
№1 (2021) DOI http://dx.doi.org/10.26739/2181-0664-2021-1

Page Maker | Верстка | 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/; Email: 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/; Email: info@tadqiqot.uz
Phone: (+998-94) 404-0000

МУНДАРИЖА / СОДЕРЖАНИЕ / CONTENT

ЎЗБЕК ТИББИЁТ ЖУРНАЛИ
УЗБЕКСКИЙ МЕДИЦИНСКИЙ ЖУРНАЛ
UZBEK MEDICAL JOURNAL

Xushvakova Nilufar Jurakulovna
PhD, Associate Professor of Samarkand State Medical Institute
Nishanbaeva Firuza Murodovna
PhD student of Samarkand State Medical Institute
e-mail: firuza@umail.uz

EFFECT OF INTRAVENOUS LASER IRRADIATION OF BLOOD ON BIOCHEMICAL CRITERIA IN CHRONIC TONSILLITIS

http://dx.doi.org/10.26739/2181-0664-2021-1-5

ABSTRACT

The Palatine tonsils are peripheral organs of the immune system. B-dependent and parafollicular T-dependent zones represent Their lymphoid tissue. A feature of the Palatine tonsils is the close connection of the lymphoid tissue with the integumentary epithelium, reflecting the intercellular interaction of lymphocytes and epithelial cells in the immune response. The various local treatment methods of chronic tonsillitis are used, which in most cases do not prevent the development of acute tonsillitis and paratonsillar abscesses even in the shortest possible time after treatment. Therefore, the search for new methods of treatment of chronic tonsillitis is still an urgent problem.

Keywords: chronic tonsillitis, antioxidant system, catalase and superoxide dismutase.

Хушвакова Нилуфар Джуракуловна
Кандидат медицинских наук, доцент Самаркандского государственного медицинского института
Нишанбаева Фируза Муродовна
Докторант Самаркандского государственного медицинского института
эл.почта: firuza@umail.uz

ВЛИЯНИЕ ВНУТРИВЕННОГО ЛАЗЕРНОГО ОБЛУЧЕНИЯ КРОВИ НА БИОХИМИЧЕСКИЕ КРИТЕРИИ ПРИ ХРОНИЧЕСКОМ ТОНЗИЛЛИТЕ

АННОТАЦИЯ

Небные миндалины - периферические органы иммунной системы. Их лимфоидная ткань представлена В-зависимой и парафолликулярной Т-зависимой зонами. Особенностью небных миндалин является тесная связь лимфоидной ткани с покровным эпителием, что отражает межклеточное взаимодействие лимфоцитов и эпителиальных клеток в иммунном ответе. Используются различные методы местного лечения хронического тонзиллита, которые в большинстве случаев не предотвращают развитие острого тонзиллита и паратонзиллярных абсцессов даже в кратчайшие сроки после лечения. Поэтому поиск новых методов лечения хронического тонзиллита остается актуальной задачей.

Ключевые слова: хронический тонзиллит, антиоксидантная система, каталаза и супероксиддисмутаза.

Xushvakova Nilufar Jo'raqulovna
Samarqand davlat tibbiyot institute,
Tibbiyot fanlari nomzodi, dotsenti
Nishanbaeva Firuza Murodovna
Samarqand davlat tibbiyot instituti doktoranti
El.manzil: firuza@umail.uz

SURUNKALI TONZILLITDA QONNI LAZZAT NURLANISHINING BIOKIMYOVIY MEZONLARGA TA'SIRI

ANNOTATSIYA

Palatin bodomsimonlari immunitet tizimining periferik organlari hisoblanadi. Ularning limfoid to'qimalari B ga va parafollikulyar T ga bog'liq zonalar bilan ifodalanadi. Palatin bodomsimonlarining o'ziga xos xususiyati - limfoid to'qimalarining integral epiteliy bilan chambarchas bog'liqligi, bu immunitet reaktsiyasida limfotsitlar va epiteliya hujayralarining hujayralararo o'zaro ta'sirini aks ettiradi. Surunkali tonzillitni mahalliy davolashning turli usullari qo'llaniladi, bu ko'p hollarda davolanishdan keyin eng qisqa vaqt ichida ham o'tkir tonzillit va paratonsillar xo'ppozlarning rivojlanishiga to'sqinlik qilmaydi. Shuning uchun surunkali tonzillitni davolashning yangi usullarini izlash hali ham dolzarb muammo bo'lib qolmoqda.

Kalit so’zlar: surunkali tonzillit, antioksidant tizim, katalaza va superoksid dismutaz.

Introduction:

The research objective: To justify and evaluate the effectiveness of intravenous blood laser irradiation (VLOK) and local laser therapy in optimizing the conservative treatment of chronic tonsillitis.

Materials and Methods

40 patients with chronic tonsillitis of toxic - allergic 1 degree and toxic-allergic 2 degrees were examined the dynamics of antioxidant indicators of catalase and superoxide dismutase under the influence of VLOK and local laser therapy was studied in these children.

Results:

The study of antioxidant indicators with chronic tonsillitis of toxic-allergic 2 degrees significantly suppressed the immune system. After intravenous laser irradiation of blood in patients, it provides high clinical and antioxidant effects. After treatment with local laser therapy, the antioxidant parameters did not change significantly, indicating low clinical effectiveness.

Processing of the obtained results according to the student’s criterion showed that when VLOK for catalase t_{pac}= 263,09, for superoxide dismutase t_{pac}=199,5

It follows that the comparison shows a good effect of VLOK.

With local laser therapy, the same indicators were for catalase $t_{pac=}$ 79,7for superoxide dismutase t_{pacc}= 9,18 which shows low efficiency.

The method of intravenous laser irradiation of blood in chronic tonsillitis has been proven to be highly effective, leading to normalization of antioxidant parameters, preventing local signs of the disease, and reducing hospital stay.

Chronic tonsillitis remains one of Otolaryngology’s most urgent problems, confirmed by data on the disease’s prevalence. The tonsils are represented by a peripheral member of the immune system, their lymphoid nodes are connected to the B zone and are connected to the parapholliculаr T zone.

To date, a variety of local treatment methods of purulent tonsillitis are studied, in most cases, they are observed with the appearance of purulent tonsillitis and paratonzillary abscess in a short period before treatment. That is why new methods of treating chronic tonsillitis remain an urgent problem to date.

The purpose of the study is to base and evaluate the effectiveness of intravenous laser irradiation of blood and local laser therapy in optimising conservative treatment of chronic tonsillitis.

The problem of chronic tonsillitis is still very relevant in medicine and goes far beyond otorhinolaryngology. According to recent data, chronic tonsillitis occurs in children in 12-15 % of cases and adults under 40 years of age in 4-10 % [1]. Currently, there are many methods of treating chronic tonsillitis that does not lead to changes. Therefore, the search for the treatment of chronic tonsillitis has not lost its significance in otorhinolaryngology. Palatine tonsils provide an optimal microenvironment for lymphocyte proliferation and maturation, followed by Mature immune cells' delivery. The very anatomical and physiological structure of the Palatine tonsils leads to developing a chronic inflammatory process in them.

Therefore, the search for new methods of treatment of chronic tonsillitis up to the present time remains an important issue in otolaryngology. They can lead to severe complications and several disabling diseases of the patient's vital organs and systems. [2]

Currently, when making a diagnosis, as a rule, only local manifestations of the disease are considered and do not take into account the state of adaptive systems of the child's body, including the system of antioxidant protection AOS. The processes of lipid hyperoxidation play an important role in the pathogenesis of inflammatory diseases of various localization. It was noted that the severity of the inflammatory process and its transition to a chronic form coincides with an increase in blood concentrations of lipid peroxidation products. In recent years, in ENT practice, considerable attention has been paid to the study of lipid peroxidation processes in developing inflammatory diseases, such as sinusitis, otitis, and adenoiditis.

In connection with the above, our study aimed to increase the effectiveness of treating chronic tonsillitis in children based on the study of the state of the antioxidant system and correction of its disorders.

The effectiveness of VLOK is associated with activated calcium-dependent metabolic processes, which increases the release of products of biochemical reactions-reactive oxygen species: hydrogen peroxide, superoxide dismutase. Accordingly, a specific enzymatic protective system is activated that prevents the damaging effect of ROS (reactive oxygen species) on cell membranes, i.e., the activity of catalase and superoxide dismutase increases [3]

Biochemical characteristics of catalase as one of the enzymes of the antioxidant system of the human body

Antioxidants are substances that can interact with various reactogenic oxidants – active oxygen forms and other free radicals-and cause their partial or complete inactivation. Activation of free radical oxidation processes, including lipoperoxidation, is a typical process of disorganising structures and functions of organs and systems in various pathological conditions.

The biosensor's principle of operation is a direct or mediator (using electron carriers) transformation of the energy of the enzymatic reaction into an electrical signal. Electrochemical biosensors allow fast, highly sensitive and selective quantitative determination of various substances in complex biological fluids. Electrochemical biosensors manufactured using screen printed technology are economical, easy to use, and have stable analytical characteristics.

The method is based on obtaining special-purpose protein membranes directly on the biosensor surface by cathodic copolymerization of a special-purpose enzyme (catalase and superoxide dismutase) glutaraldehyde.

We used screen printed-the electrodes are a polymer substrate on which three electrically conductive sites made of silver are applied using a special technology. One of the sites serves as a working electrode (S=1 mm2) and is covered with carbon paste. The second site serves as an auxiliary electrode, the third site serves as a reference electrode and is covered with AgCl.

Materials and methods: the study was based on 40 patients aged 5 to 18 years, suffering from chronic tonsillitis of toxic-allergic form 1 degree and toxic - allergic form 2 degrees, who were treated in the children's Department of otorhinolaryngology of the Regional multidisciplinary children's clinical medical center of the Samarkand region.

The patients were divided into 2 groups:

Group 1 consisted of -21 patients with chronic tonsillitis of toxic-allergic form 1 degree and toxic-allergic form 2 degree, who underwent complex treatment and intravenous laser blood irradiation (VLOK)

Control group 2 consisted of 19 patients with chronic tonsillitis of toxic-allergic form 1 degree and toxic-allergic form 2 degree who underwent traditional treatment and local laser therapy.

In the survey of children with chronic tonsillitis, many were children aged 7 to 16 years.

Examination and treatment were performed according to the standards approved by the Ministry of the health of the Republic of Uzbekistan. Among the special research methods, catalase and superoxide dismutase activity in saliva was studied using a biosensor.

The data of statistical processing before and after treatment of VLOK of the received measurements are shown in the following table:

indicator	Before treatment	After treatment VLOK	T criterion
catalase	0,60333±0,1028	2,37476	263,093
superoxidedismutase	26,8095	0,09205	199,478

*for all calculations$p<0,05$, $t_{tab}=2,04$

In the main group, when studying, we observed a decrease in catalase and superoxide dismutase indicators before treatment, as shown in the first table. After the treatment, an increase in catalase and superoxide dismutase parameters was observed in 8 months, which indicates that intravenous laser irradiation of blood gives high clinical effectiveness.

The statistical processing data before and after treatment with local laser therapy of the obtained measurements are shown in the following table.

indicator	Before treatment	After treatment VLOK	T criterion
catalase	0,63368 ± 0,10972	1,23158±0,08494	79,6886
superoxidedismutase	25,7895± 1,83929	27,0684±1,80362	9,18146

Data from statistical processing before and after treatment with local laser therapy showed that catalase and superoxide dismutase indicators did not change significantly. This is evidence of the low clinical effectiveness of local laser therapy in treating chronic tonsillitis in children.

Conclusion

Based on this study, the following conclusions were made:

1) the clinical effectiveness of intravenous laser blood irradiation in chronic tonsillitis in children with toxic - allergic form 1 and toxic-allergic 2 degrees compared with the control group was Determined.

2) it was Noted that in chronic tonsillitis, the antioxidant system is reduced, and the activity of peroxidase and superoxidismutase is reduced.

3) the high clinical effectiveness of intravenous laser blood irradiation in children with chronic tonsillitis has been Established: it improves the antioxidant system's indicators, prevents local signs of the disease and reduces their hospital stay.

Practical recommendations:

Method for determining peroxidase and superoxidismutase is a special non-invasive method and the most accurate diagnostic criterion and eeective method for treating chronic tonsillitis in children.

2) in case of chronic tonsillitis of toxic-allergic 1 degree and 2 degrees, it is recommended to use VLOK at an average daily dose of 1 time a day, red 650 nm, blue 405 nm daily 10 days.

References:

1. Russian otorhinolaryngology No. 3 (82) 2016 Evaluation of laser therapy's effectiveness and led phototherapy in treating chronic tonsillitis. Blotsky A. A., Antipenko V. V.

2. Russian otorhinolaryngology No. 3 (82) 2016 Evaluation of the effectiveness of laser therapy and led phototherapy in treating chronic tonsillitis. Blotsky, A. A., Antipenko, V. V.
3. A.V. Geynits, S. V. Moskvin, A. A. Achilov. Intravenous Laser Blood Irradiation “Triada Publishing House”, 2008
4. Biosensors for monitoring the level of enzymes that regulate peroxidation in the human body. Yulaev M. F.
1. 5.Derbentseva T. V., Maskin C. C., Golbreich V. A. Program and emergency relaparotomies in treating common peritonitis // Bulletin of the Volgograd state medical University. – 2012. – №4 (44). –P. 105-107.
5. Kuevda E. V. Laparostomy in treating common peritonitis // Bulletin of the Russian state medical University, 2011, no. 1, Pp. 359-360.
6. Kuevda E. V. Tactics of treatment of patients with advanced peritonitis considering the influence of intra-abdominal hypertension // Collection of materials of the conference “postgraduate and doctoral readings: new age Challenges - search for innovations”. - Moscow, 2012. - P. 97-99.
7. Maskin C. C., Golbreich V. A., Lopasteisky D. S. Programmed and emergency relaparotomies for common peritonitis and intra-abdominal complications / / XI Congress of surgeons of the Russian Federation: Mater. Congress’s. – Volgograd: Publishing house of Vol.GMU, 2011. - P. 533-534.
8. Maskin C. C., Derbentseva T. V., Karsanova N. M., etc. Results of programmed and emergency relaparotomy for advanced purulent peritonitis // Matera. city scientific and practical conference-Moscow, 2012. - Pp. 74-75.
9. Savchenko Yu. P., Kuevda E. V., Golikov I. V. intra-abdominal hypertension Syndrome in the choice of surgical treatment of acute widespread peritonitis // Bulletin of experimental and clinical surgery, 2011, Vol. 4, No. 1, Pp. 148-151.
10. Timerbulatov V. M., Timerbulatov sh. V., Gareev R.N., etc. Prognostic value of criteria for intraabdominal hypertension syndrome in emergency abdominal surgery / / Infections in surgery. - 2010. - No. 4. - Pp. 44-46.
11. Fayazov R. R., Timerbulatov sh. V., Gareevr. N. et al.Intraabdominal hypertension in emergency surgery / / Medical Bulletin of Bashkortostan. - 2008. - No. 5. - Pp. 64-67.

ISSN 2181-0664

Doi Journal 10.26739/2181-0664

ЎЗБЕК ТИББИЁТ ЖУРНАЛИ

УЗБЕКСКИЙ МЕДИЦИНСКИЙ ЖУРНАЛ

UZBEK MEDICAL JOURNAL

№1 (2021)

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/; Email: info@tadqiqot.uz
Phone: (+998-94) 404-0000

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