

### Activity of the Pro and Antioxidant System in Erythrocyte Membranes in Children with Primary and Recurrent Laryngotracheitis

Safoeva Zebo Farkhotovna

Samarkand State Medical University, Republic of Uzbekistan, Samarkand

Abduvokhidova Aziza Akmalovna

Student of Samarkand State Medical University, Republic of Uzbekistan, Samarkand

#### Article Information

**Received:** December 12, 2022

**Accepted:** January 16, 2023

**Published:** February 21, 2023

#### Keywords

*Laryngotracheitis*

#### ABSTRACT

The main importance in the pathogenesis of functional disorders of organs and systems in acute constrictive laryngotracheitis in children is respiratory insufficiency, manifested by a violation of external, pulmonary and tissue respiration, hypoxia and hypoxemia. Under the influence of hypoxia and hypercapnia, the functional state of the central nervous system and the neuro-reflex regulation of the vital activity of the body are disrupted. Metabolic changes occur as a result of dysfunction of the most important organs and systems in the body. Violation of gas exchange and redox processes, hypoxia and hypoxemia lead to activation of anaerobic oxidation of under-oxidized metabolic products. Under the influence of hypoxia, bacterial toxins, products of impaired metabolism and changes in hemodynamics in children with acute stenosing laryngotracheitis, violations of the function of vital organs are noted. These changes are accompanied by an increase in the activity of LPO processes and the restructuring of the antioxidant protection systems of red blood cells.

**Materials and methods of research.** The study is based on a clinical and laboratory examination of 150 children who were under observation and enrolled in the Medical Association of the Samarkand region in the period from 2020 to 2022. All the examined children were divided into 2 groups according to the forms of acute stenosing laryngotracheitis.

In this paper, a study was conducted to determine the level of POL by the initial product of diene conjugate (DC) in erythrocyte membranes and the final product of POL - malondialdehyde (MDA).

#### Results and their discussion.

The study revealed an increase in the intensity of free radical processes against the background of progressive insufficiency of antioxidant systems in the lymphocytes of children with acute stenosing laryngotracheitis, deepening manifestations of T-link immunodeficiency. During the period of exacerbation of the disease, there is a significant increase in the level of MDA in patients of group 1 to  $2.79 \pm 0.11$  nmol/l, in group 2 -  $8.23 \pm 1.11$ , which exceeds the control by 2.33 times and 2.9 times, respectively, in groups, and DC reaches the level in patients of group 1 to  $3.27 \pm 0.09$  E/ml, in 2 group -  $5.61 \pm 0.69$ . The results obtained indicate a significant activation of LPO processes. The level of SOD decreased in group 1 by 99.5%, in group 2 – by 99.6%, which indicates structural and functional changes in the lymphocyte membrane.

Activation of LPO and AOP, as a result of this, the presence of changes in the lipid structure are the basis for carrying out therapeutic and preventive measures aimed at correcting these disorders.

**Table Activity of the pro and antioxidant system in erythrocyte membranes in children primary and recurrent laryngotracheitis.**

	Indicators	Control group (n=30)	1 group (n=70)	2 group (n=50)
LPO	MDA, nmol/l	2,79±0,11	6,51±0,22***	8,23±1,11***
	DC, E/ml	1,43±0,02	3,27±0,09***	5,61±0,69***
AOP	SOD, Units/ml	2,41±0,09	1,21±0,01***	1,01±0,01***
	CT, Mmol/mg	11,55±0,77	7,96±0,31***	5,66±0,39***

Note: \* - differences relative to the control group data are significant (\* - P<0.05, \*\* - P<0.01, \*\*\* - P<0.001)

Thus, the conducted studies have established a significant pathogenetic role of the violation of antioxidant function in the body in children with acute stenosing laryngotracheitis. Changes in the LPO -AOP system are the leading mechanism of impaired functioning of lymphocytes. The loss of functional activity of immunocompetent cells in acute stenosing laryngotracheitis can be associated with an imbalance of the oxidant and antioxidant systems. Analysis of new data on the pathogenesis of acute stenosing laryngotracheitis allows us to conclude that a significant and prolonged increase in the intensity of LPO is the most important mechanism for the formation of acute stenosing laryngotracheitis, reduces the functional activity of lymphocytes, causes the formation of immunodeficiency and, as a consequence, a severe course of the disease.

**Conclusion.** Analysis of new data on the pathogenesis of acute stenosing laryngotracheitis allows us to conclude that a significant and prolonged increase in the intensity of LPO is the most important mechanism for the formation of recurrent laryngotracheitis, reducing the functional activity of lymphocytes and leading to the formation of immunodeficiency. As a consequence, a severe course of the disease.

## LITERATURE

1. Boymamatova P. F. Dyscirculatory encephalopathy: principles of treatment //Eurasian Medical Research Periodical. – 2022. – T. 13. – C. 128-132.
2. Furkatjonovna B. P., Ukurova S. G. Assessment of the role of ent pathology in the development of facial pain //Academicia Globe: Inderscience Research. – 2022. – T. 3. – №. 03. – C. 56-63.
3. Ismatiloevna Y. F. TREATMENT OF VAGINAL DYSBIOTIC DISORDERS IN PREGNANT WOMEN BEFORE CHILDBIRTH //World Bulletin of Public Health. – 2022. – T. 12. – C. 86-89.
4. Ismatiloevna Y. F., Islamovna Z. N., Utkurovna S. G. DYSBIOSIS OF THE VAGINAL MICROBIOTA IN GYNECOLOGICAL DISEASES //Thematics Journal of Education. – 2022. – T. 7. – №. 2.
5. Ismatiloevna Y. F., Utkurovna S. G., Islamovna Z. N. THE OUTCOME OF PREGNANCY AND CHILDBIRTH IN WOMEN WITH IMPAIRED VAGINAL BIOECENOSIS //World Bulletin of Public Health. – 2022. – T. 13. – C. 85-87.
6. Safoeva Z. F. Comparative characteristics of neurological symptomatology in children depending on the type of delivery //Youth and medical science in the XXI century. – 2018. – C. 61-63.

7. Safoeva Z. F., Utkurovna S. G. DYSBIOTIC UPPER AIRWAY DISORDERS IN CHILDREN WITH ACUTE STENOTIC LARYNGOTRACHEITIS //World Bulletin of Public Health. – 2022. – Т. 11. – С. 1-4.
8. Safoeva Z., Abduvokhidova A. HEALTH OF NEUROMUSCULAR DEVELOPMENT OF A NEWBORN DURING CAESAREAN SECTION, A MODERN VIEW //International Bulletin of Medical Sciences and Clinical Research. – 2023. – Т. 3. – №. 1. – С. 84-88.
9. Safoeva Z., Samieva G. TREATMENT OF CHILDREN WITH ACUTE STENOSING LARYNGOTRACHEITIS IN CONDITIONS OF PROLONGED TRACHEAL INTUBATION //Eurasian Journal of Medical and Natural Sciences. – 2022. – Т. 2. – №. 6. – С. 185-190.
10. Safoeva Z. F., Samiyeva G. U. RESPIRATORY TRACT MICROBIOCENOSIS DISORDERS IN CHILDREN WITH ACUTE STENOTIC LARYNGOTRACHEITIS //Академические исследования в современной науке. – 2022. – Т. 1. – №. 15. – С. 43-44.
11. Utkurovna S. G., Farkhodovna S. Z., Furkatjonovna B. P. Optimization of the treatment of acute rhinosinusitis in children //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 3. – С. 769-773.
12. Yuldasheva F. I. FEATURES OF VAGINAL MICROBIOTA DYSBIOSIS IN GYNECOLOGICAL DISEASES //Conferencea. – 2022. – pp. 85-87.
13. YULDASHEVA F. I., SAMIEVA G. U., ZAKIROVA N. I. FEATURES OF CHANGES IN THE MICROFLORA OF THE VAGINA TO WOMEN //ЖУРНАЛ БИМЕДИЦИНЫ И ПРАКТИКИ. – 2022. – Т. 7. – №. 3.
14. Сафаева З., Абдувахидова А. РЕСПИРАТОРНЫЕ МИКРОБНЫЕ ИНФЕКЦИИ У ДЕТЕЙ С ОСТРЫМ СТЕНОЗИРУЮЩИМ ЛАРИНГОТРАХЕИТОМ //Science and innovation in the education system. – 2023. – Т. 2. – №. 2. – С. 71-73.
15. Сафаева З., Абдувахидова А. СОВРЕМЕННЫЕ ДИАГНОСТИЧЕСКИЕ ПОДХОДЫ И ОСОБЕННОСТИ ЛЕЧЕНИЯ РЕЦИДИВИРУЮЩЕГО ЛАРИНГОТРАХЕИТА У ДЕТЕЙ //Solution of social problems in management and economy. – 2023. – Т. 2. – №. 2. – С. 62-65.
16. Сафоева З. Ф. Modern concepts of recurrent laryngotracheitis in children: problems and solutions //Журнал Биомедицины и Практики. – 2022. – Т. 7. – №. 1.
17. Сафоева З. Ф. СРАВНИТЕЛЬНАЯ ХАРАКТЕРИСТИКА НЕВРОЛОГИЧЕСКОЙ СИМПТОМАТИКИ У ДЕТЕЙ В ЗАВИСИМОСТИ ОТ ВИДА РОДОРАЗРЕШЕНИЯ //Молодежь и медицинская наука в XXI веке. – 2018. – С. 61-63.
18. Сафоева З. Ф., Хусаинова Ш. К., Умарова С. С. Сравнительная оценка неврологической симптоматики у новорожденных, рожденных естественным путем и путем операции кесарева сечения //Достижения науки и образования. – 2021. – №. 1 (73). – С. 53-57.
19. Урунова Ф., Сафоева З. Функциональное состояние почек у недоношенных новорожденных родившихся от матерей с преэклампсией //Журнал вестник врача. – 2018. – Т. 1. – №. 1. – С. 80-83.
20. Юлдашева О. С. и др. Активность про-и антиоксидантной системы в мембранах эритроцитов у беременных с преждевременными родами //Молодой ученый. – 2016. – №. 4. – С. 315-318.