



TASHKENT MEDICAL ACADEMY

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# Journal of Educational and Scientific Medicine



**Special Issue 5  
Volume 2 | 2024**



OAK.UZ  
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Science Education Commission of the Cabinet  
Ministry of the Republic of Uzbekistan

**ISSN: 2181-3175**



Monitors:

**giz** Deutsche Zusammenarbeit für Internationalen Zusammenarbeit (GIZ) GmbH

ISSN: 2181-3175

Special Issue of  
«**JOURNAL OF EDUCATION AND  
SCIENTIFIC MEDICINE**»

Volume 2, Issue 5

ISSN: 2181-3175

# «**YUMSHOQ TO'MALAR XIRURGIK INFEKTSIYASI DOLZARB MUAMMOLARI**»

**Ilmiy-amaliy konferentsiyaning tezislari  
to'plami**

Special Issue  
Volume 2

**Toshkent, 28 oktyabr, 2024**

OAK.UZ  
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Source: <https://www.oak.uz>  
Ministry of Health of the Republic of Uzbekistan



# Indicators of Cellular Immunity in Patients with Long-Term Non-Healing Wounds

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## BACKGROUND

The physiological process of wound healing includes four stages: hemostasis, inflammation, proliferation and scarring, the coordinated work of which ensures proper healing. However, when wounds do not go through this organised process, soft tissue healing slows down, and this eventually leads to the development of long-term non-healing wounds with common features such as exudation, reinfection, tissue necrosis, defective re-epithelialization, and decreased angiogenesis. All this served as prerequisites for conducting more in-depth studies of the mechanisms of the body's immune response as a guar-

antee of improving the results of treatment of patients with long-term non-healing wounds.

## MATERIAL AND METHODS

Local clinical data of long-term non-healing wounds in 84 patients were analysed. All patients were divided into two groups: the first was patients with an uncomplicated course of the wound process, and the second was patients with a complicated course of long-term non-healing wounds in the form of generalisation of infection. We studied the quantitative content of the main subpopulations of T-lymphocytes - T-helper/inducers (CD3<sup>+</sup> and CD4<sup>+</sup> cells) and T-

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suppressors/cytotoxic lymphocytes (CD8+ cells).

## RESULTS

The study of the relative and absolute number of lymphocytes carrying differentiating CD3+ markers (T-lymphocytes) on their surface showed that they changed in different directions to the reference values. If the relative CD3+ cell count was significantly reduced by 1.2 times to  $50.51 \pm 1.25\%$  relative to the reference values ( $p < 0.05$ ), then the absolute number of these cells was significantly increased to  $1271.5 \pm 36.5 \mu\text{L}$  relative to the reference values by 1.1 times ( $p < 0.05$ ). The increase in the relative value of CD3+ cells among the patients of the first group in the dynamics of treatment was characterised by a progressive decrease in the absolute number of cells (from  $1145 \pm 37 \mu\text{l}$  to  $1017 \pm 24 \mu\text{l}$ ). As for the relative values of CD3+ cells among the patients of the second group in the dynamics of treatment, we noted their progressive growth (from  $43.38 \pm 1.19\%$  to  $51.51 \pm 0.71\%$ ). However, relative to the absolute values, the dynamics of changes in the number of CD3+ cells among the patients of the second group in the dynamics of the treatment was wave-like, with a peak of the maximum value on the 14th day of the study ( $1815 \pm 59 \mu\text{l}$ ). The trend and direction of

changes in the relative and absolute numbers of these subpopulations were the same as in CD3+ lymphocytes but with different intensities. The deficit of the relative number of CD4+ cells in patients was 1.2 times the reference values ( $p < 0.05$ ), but the deficit of CD8+ cells was barely noticeable - the decrease was 1.1 times ( $p < 0.05$ ). In both cases, the absolute values, as in CD3+ lymphocytes, were significantly higher than the reference values ( $p < 0.05$ ). Against this background, the immunoregulatory index (CD4+/CD8+) was also significantly reduced in patients relative to the norm ( $p < 0.05$ ).

## CONCLUSION

A comparative study of the relative and absolute number of T-lymphocytes (CD3+ cells) and their regulatory subpopulations - T-helper/inducers (CD4+ cells) and T-suppressors/cytotoxic lymphocytes (CD8+ cells) showed that in patients with long-term non-healing wounds, these parameters change with the same tendency, but with different directions. In all cells, the absolute numbers in patients were significantly increased to the reference values, but the relative values had the opposite tendency.