

НАЦІОНАЛЬНА АКАДЕМІЯ МЕДИЧНИХ НАУК УКРАЇНИ  
МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
Державна установа «ІНСТИТУТ ОХОРОНИ ЗДОРОВ'Я ДІТЕЙ ТА ПІДЛІТКІВ НАМН УКРАЇНИ»  
МЕДИЧНИЙ ФАКУЛЬТЕТ ХАРКІВСЬКОГО НАЦІОНАЛЬНОГО УНІВЕРСИТЕТУ  
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# ПРОБЛЕМИ СЬОГОДЕННЯ В ПЕДІАТРІЇ

Матеріали XI науково-практичної конференції молодих вчених та  
студентів з міжнародною участю



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50.0% perceived a clear increase. These figures suggest that the perceived escalation was more pronounced among MPs students than among international Medical students. Subjective preparedness for KROK-2 remained relatively stable despite increased anxiety. In the MPs group, 75.0% described themselves as “somewhat ready,” 16.7% as “fully ready,” and 8.3% as “not ready.” Among international Medical students, 66.7% reported being “somewhat ready,” 25.0% “fully ready,” and 8.3% “not ready.” Among MPs students, the most frequently reported negative factors affecting preparation were concentration difficulties (66.7%), generalized war-related fears (66.7%), sleep disturbances (58.3%), economic instability (50.0%), and unstable internet or electricity access (50.0%). Emotional concerns about family safety were reported by 41.7%, while 33.3% indicated fear of worsening military conditions and lack of time due to competing demands. These data reflect a predominance of emotionally mediated cognitive disruption. In the international Med cohort, infrastructural and situational stressors were more prominent. Sleep disturbances were reported by 58.3%, unstable electricity or internet access by 50.0%, and concentration difficulties by 50.0%. War-related fears were reported by 41.7%, and economic instability by 33.3%. Compared with the MPs group, emotional rumination and family-related worries were less frequently endorsed. This suggests that stress in the international cohort was more environmentally mediated than emotionally amplified. Sleep disturbance emerged as a critical cross-group mediator, affecting 58.3% of students in both samples. Protective factors were highly consistent across groups. In the MPs cohort, 91.7% identified their own efforts and self-discipline as the primary coping resource, 75.0% reported family support, and 50.0% cited peer support. Similarly, in the international Med group, 83.3% emphasized personal effort, 66.7% family support, and 41.7% peer support. These results highlight self-regulation as the dominant resilience factor in both populations. In summary, although clinically significant anxiety was present in only 8.3% of students in each group, moderate anxiety affected 41.7% of MPs students and 33.3% of international Medical students. Wartime conditions increased perceived anxiety in both samples; however, MPs students demonstrated a stronger emotional-cognitive amplification, while international Medical students were more affected by environmental instability. Sleep disturbances were equally prevalent (58.3%) and represent a shared vulnerability pathway. Despite these stressors, the majority of students (75.0% and 66.7%, respectively) perceived themselves as adequately prepared for the licensing examination, indicating preserved academic self-efficacy under chronic stress conditions.

## **FEATURES OF THE DYNAMICS OF MICROCIRCULATION IN PURULENT AND INFECTED WOUNDS DEPENDING ON THE COURSE OF THE WOUND PROCESS**

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The development of various methods of local influence on purulent and infected wounds in children are continued. A number of domestic and foreign researchers continue to search for an informative method of research and the course of the wound process. Undoubtedly, the assessment of the dynamics of healing of purulent and infected wounds in children primarily depends on clinical manifestations. However, based on the experience of treatment, they are quite subjective, especially in younger patients, therefore, at the present stage, it is more expedient to use a number of objective methods. Cytological studies of wound impressions, determination of the acid-base state of wound exudate, the amount of protein in it, qualitative and quantitative bacteriological control are widely used in the practice of pediatric surgeons.

Determination of microcirculation indicators is widely used in various sections of pediatric surgery. One of such methods is laser Doppler flowmetry, which allows for an assessment of the state of blood flow at the capillary level, during various inflammatory and reparative processes, which allows for a single-stage or dynamic non-invasive determination of capillary blood flow.

**The purpose of the study** is to assess the dynamics of microcirculation indicators of infected and purulent wounds in children according to the course of the wound process.

**Materials and methods.** The study and treatment of 58 children aged 1 to 17 years were conducted. Of these, 31 were boys (53.5%), 27 were girls (46.5%). All patients were divided into two groups – the main group – 30 and the comparison group of 28 children. Treatment of infected and purulent wounds was based on generally accepted principles of wound infection therapy in children. To assess the treatment, the dynamics of cytological indicators of patients in both groups were determined. In the main group (n= 30), microcirculation monitoring in the wound areas was also carried out. For this purpose, the average microcirculation parameter in perfusion units in the area of the marginal wound was determined using the sensor of the laser blood flow analyzer with a wave source of 0.89  $\mu\text{m}$  and compared with the control indicator in the area of the contralateral location of the wound. The increase in the microcirculation parameter was calculated.

**Research results.** Measurement of microcirculation parameters in patients in the main group was carried out for 10 days. Analysis of the data obtained showed that on the first day the microcirculation indicator was significantly higher and was 50% of the control value - this indicated a decrease in microcirculation. The results of daily determination showed a gradual decrease in the microcirculation parameter and on the 3rd -4th day of the wound process and was less than 50% of the control value. On the 10th day, the average microcirculation parameter increased and was more than 50% of the control value. The determined indicators of laser Doppler flowmetry correlated with the results of cytological examination. In the cytograms determined on the 1st day, a large number of erythrocytes and neutrophils were recorded in the entire field of view, and single lymphocytes, which indicated increased blood circulation in the wound, characteristic of the first phase of the wound process. On the 4th day, a decrease in the number of neutrophilic leukocytes, an increase in macrophages and active fibroblasts was determined in the wounds, which corresponded to the beginning of the second phase of the wound process. In the period up to 10 days, the qualitative and quantitative ratio of the cellular composition changed. The total number of neutrophils, macrophages and lymphocytes tended to decrease. These data indicated a decrease in exudative reactions and a decrease in the inflammatory process in the wound and the beginning of regeneration, which was confirmed by the determination of fibroblasts and young epithelial cells. Such changes characterized the transition of the wound process to phase 3.

**Conclusions.** Determination of wound microcirculation indicators correlates with changes in the cytological component of the course of the wound process and can be used as criteria for assessing the dynamics of the wound process in combination with clinical recognition of healing and the results of other studies to control the effectiveness of treatment.

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