A NONINVASIVE DIAGNOSTIC METHOD FOR CHRONIC RECURRENT HERPETIC STOMATITIS IN PREGNANT AND POSTPARTUM WOMEN

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Annotation. *Diseases caused by viruses of the numerous Herpesviridae family occupy a significant place in human pathology. Herpetic infection (HI)1 with damage to the epithelium of the oral cavity and lips is mainly associated with representatives of the apodefamily: most often with herpes simplex virus type I (HSV I), less often with herpes simplex virus type II (HSV II) and varicella zoster virus (HSV III). Chronic recurrent herpetic stomatitis of the oral mucosa occupies a significant place in the group of diseases of the mucous membrane among pregnant women and women in the postpartum period. The diagnosis of diseases with a viral etiological factor is complex, time-consuming, and requires a comprehensive interdisciplinary approach and the use of various clinical and laboratory methods. Treatment of viral pathology of the oral mucosa in pregnant women and women in the postpartum period is a difficult task in the practice of a dentist.*
Keywords. *Pregnancy, oral mucosa, chronic recurrent herpetic stomatitis, buccal epithelium, cytokinetic parameters.*

Pregnancy is an important period for a woman's dental health and is characterized by changes in the level and structure of oral mucosal diseases. During pregnancy, the pathogenicity of oral microflora increases due to the increased proliferation of conditionally pathogenic microorganisms, specifically the herpes simplex virus (HSV), which causes recurrences of chronic recurrent herpetic stomatitis (CRHS) [2, 3, 8, 10]. An urgent task of modern molecular medicine is the study of oral mucosa tissues that can be examined using non-invasive research methods. The buccal epithelium, being a part of the mucosal epithelium and the boundary zone between the external and internal environment of the organism, is a multi-layered flat, non-horny epithelium. The level of functional activity of buccal epithelial cells is determined by the degree of their maturity, and the processes of differentiation, proliferation, and functional parameters of mature cells are regulated by factors of local and central origin. In this regard, the state of buccal epithelial cells objectively reflects the intensity of destabilizing mechanisms, and the recorded morphological and electrokinetic changes in epithelial differentiation should be considered as rapid tests for assessing general health status [1,4,5].

Purpose of the study. Study the changes in the buccal epithelium in CRS and its diagnostic significance.

Research materials and methods.

120 pregnant women and women with CRS aged 21-35 years were examined, 20 of whom exhibited changes in the buccal epithelium. 10 healthy women participated as a control group. The collection of epithelium from the oral mucosa for cytological examination was carried out by scraping, after which the material was uniformly applied to the degreased object glass. The samples were dried and stained with azure-eosin according to Romanovsky-Gimza for 20 minutes. Analysis of the preparations was conducted under a laboratory microscope. The critical level of significance for testing statistical hypotheses in this study was taken as 0.05; 0.01; 0.001. According to the methodology of Sycheva L.P. [6, 7], the changes recorded during the examination of the preparations were recorded as follows:

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- cytogenetic indicators (micronucleus, protrusions of the "tongue" type, protrusions of the "broken egg" type);
- nuclear destruction indicator (perinuclear vacuole, karyopyknosis, karyorexis, karyolysis);
- proliferation rate;

Statistical data processing was carried out using the IBM SPSS Statistics v.26 software package (developer - IBM Corporation).

Results and discussions. When examining the buccal epithelium of pregnant and breastfeeding women with CRS, a change in the number of cells with nuclear changes and the frequency of all disorders was noted compared to the control group. Thus, morphological analysis of the listed features of cytogenetic indicators, nuclear destruction, and proliferation indicators showed a dependence of frequency on the presence of all disorders (Table 1).

Table 1

Frequency of disorders in the buccal epithelium of pregnant women and postpartum women against the background of CRS

Violation		Control	Comparison group	Main group
Cytokinetic indicators	Micronucleus	1,96±0,28	2,25±0,19	2,67±0,11 **
	protrusions of the "broken egg" type	0,92±0,28	1,01±0,18	1,03±0,26
	protrusions of the "tongue" type	0,99±0,26	0,52±0,19	0,82±0,11
Nuclear destruction indicators	Perinuclear vacuole	10,56±0,58	5,45±0,45 **	5,86±0,45**
	Karyoreksis	0,38±0,15	3,12±0,66 #a	5,03 ±0,23#
	Karyopyknosis	3,32±0,51	6,46±0,42 **	6,95±0,82 **
	Karyolysis	2,47±0,32	0,08±0,09 #a	0,63±0,11
Indicator nuclear proliferation	Notch	4,70 ± 0,31	5,01 ± 0,26	5,05 ± 0,31
Total frequency of all disorders		25,3±0,95	23,90 ± 0,69 *	28,04 ± 1,29 *

Note: a - differences between the frequency of disorders in the lesion site and outside the lesion site are statistically significant ($p<0.05$); b - differences between the frequency of disorders in the lesion site and outside the lesion site are statistically significant ($p<0.01$); * - differences with the control are statistically significant ($p<0.05$); ** - differences with the control are statistically significant ($p<0.01$); # - differences with the control are statistically significant ($p<0.001$).

During the study of pregnant women and postpartum women with CRPS, a change in the number of cells with nuclear aberrations is observed compared to the control group. Dispersion analysis allowed for the establishment of a dependence of the frequency of disorders on the presence of CRPS for the signs "total frequency of all disorders," "nuclear destruction indicators," and "number of cells with micronuclei." A dependence of the frequency of disorders on the sampling site was

identified in pregnant women and postpartum women with CRPS. A statistically significant ($p<0.05$) increase in the number of buccal cells with pathologies was identified in them compared to control values (25.3±0.95‰). In the main group, buccal epithelial cells with disorders (28.04±1.29‰) were higher compared to the comparison group (23.90±0.69‰), with differences in the lesion focus being statistically significant ($p<0.01$). The frequency of occurrence of micronuclei, cells with nuclear destruction indicators (caryopicnosis, kariorrhexis), in the buccal epithelium from the lesion site was significantly higher than in the control group.

The frequency of occurrence of nuclear destruction indicators such as perinuclear vacuole and karyolysis in the experimental group was statistically significantly lower compared to the control group. It should be noted that the number of cells with nuclear destruction differed slightly from the control group in pregnant and breastfeeding women outside the lesion site; for the indicators "number of cells with micronuclei" and "total number of disorders," it was higher only in the lesion site. Higher frequency values of cells with micronuclei in the lesion site indicate an increase in genetic instability, which is noted by several authors [7,9] in precancerous states and may contribute to the malignancy of cells located in the lesion site. For samples taken from patients in the main group in the affected area, the highest diagnostic values are represented by the indicators of karyolysis, karyorexis, frequency of perinuclear vacuoles, and karyopyknosis.

Analysis of the obtained results established that the incidence rates of karyolysis and karyorexis in the buccal cells of tissues affected by chronic recurrent herpetic stomatitis possess absolute diagnostic value. The sensitivity of these tests is 90% at 100%, which reduces the possibility of hyperdiagnosis and practically eliminates the possibility of obtaining false negative results.

Thus, to diagnose "chronic recurrent herpetic stomatitis" in pregnant and breastfeeding women aged 21-35 years, we can recommend the frequency values of diagnostically informative nuclear anomalies in the buccal epithelial cells of the lesion site, which are presented in Table 2.

Table 2

Incidence rate of prognostically informative nuclear anomalies (%) in buccal epithelial cells

Nuclear anomaly	**CRHS patients**	**Healthy**
Karyolysis	<0,92	>0,92
Karyoreksis	>1,06	<1,06
Perinuclear vacuole	<7,02	>7,02
Karyopyknosis	>5,95	<5,95

Conclusion

Based on the research conducted, the following conclusions can be drawn:

1) The frequency of occurrence of cells with micronuclei, karyorexis, and karyopyknosis, as well as the total number of buccal cells with anomalies, was higher in pregnant women and postpartum women with chronic recurrent herpetic stomatitis;

2) The frequency of karyolysis and karyorexis in the buccal cells of tissues affected by chronic recurrent herpetic stomatitis is an absolute predictor of chronic recurrent herpetic stomatitis.

Furthermore, to confirm the diagnosis, it is necessary to determine the frequency of perinuclear vacuoles and karyopyknoses in the buccal cells.

Literature.

1. Aslanova M., Ali R., Zito P. M. (2020) Herpetic Gingivostomatitis. StatPearls [Internet]. Treasure Island [FL]. Available at: https://pubmed.ncbi.nlm.nih.gov/30252324/
2. Ballyram R., Wood N. H., Khammissa R. G et al. (2016) Oral diseases associated with human herpes viruses: aetiology, clinical features, diagnosis and management. SADJ, vol. 71, no 6, pp. 253-259.
3. Davis G. et al., 2013; Strivens E. Strivens E., Stirling C. It's time to move from researching problems to providing solutions /. // Australas J Ageing. – 2019. – № 38. – P. 78–79
4. Poole C. L., Kimberlin D. W (2018) Annual Review of Virology Antiviral Approaches for the Treatment of Herpes Simplex Virus Infections in Newborn Infants. Annu Rev Virol, vol. 5, pp. 407–425.
5. 5. Working Party (AGIHO) of the German Society for Hematology and Medical Oncology (DGHO). Ann Hematol, vol. 94, no 9, pp. 1441-1450.
6. 6. Whitley R., Baines J. (2018) Clinical management of herpes simplex virus infections: past, present, and future. F1000Rev, vol. 7, no 1726, pp. 1-9.
7. 7. Бахрамова, Ф. Н. (2025). ИММУНОЛОГИЧЕСКИЕ АСПЕКТЫ МУКОЗАЛЬНОГО ЭПИТЕЛИЯ У БЕРЕМЕННЫХ И КОРМЯЩИХ ЖЕНЩИН, ПЕРЕНЕСШИХ ГЕРПЕТИЧЕСКИЙ СТОМАТИТ. Medical journal of Uzbekistan, 1(5), 131-136.13. Олисова О.Ю., Лукашов М.И., Письменная Е.В. Выбор рациональных схем лечения различных клинических вариантов течения герпетической инфекции. \ Российский журн. кожн. и венер.заболеваний. – 2016, 19 (1). С.41-44.
8. 8. Камилов, Х., Кадырбаева, А., Бахрамова, Ф., & Мирзаев, Х. (2021). Клиническая картина, диагностика и лечение хронического рецидивирующего афтозного стоматита. Stomatologiya, (2 (83)), 64-67.
9. 9. Алимова, Д. М., Бахрамова, Ф. Н., & Абдуллаева, М. Р. (2020). Анализ микрофлоры полости рта в клиническом течении хронического рецидивирующего афтозного стоматита. Stomatologiya, (1), 22-25.
10. 10. Бахрамова, Ф. Н. (2019). Оценка антибактериальной эффективности озонированного раствора при рецидивирующем афтозном стоматите. In Актуальные вопросы современной медицины (pp. 72-74).