

4. Bush JS, Lofgran T, Watson S. Trench Foot. [Updated 2022 May 15]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK482364>.

5. Кольєр Т., Патель А., Рінальдї Р. Периферична полінейропатія, спричинена гіпотермією, після епізоду утоплення. РМ R 2012; 4:230.

6. Løseth S, Bågenholm A, Torbergsen T, Stålberg E. Периферична нейропатія, викликана сильною гіпотермією. Clin Neurophysiol 2013; 124:1019.

DOI <https://doi.org/10.30525/978-9934-26-226-5-21>

CHANGES IN THE ENDOMETRIUM WITH HIV-INFECTION

ЗМІНИ ЕНДОМЕТРІЮ ПРИ ВІЛ-ІНФЕКЦІЇ

Koshelnyk O. L.

*Candidate of Medical Sciences,
Associate Professor,
Associate Professor at the Department of
Normal and Pathological
clinical anatomy
Odessa National Medical University*

Кошельник О. Л.

*кандидат медичних наук, доцент,
доцент кафедри нормальної та
патологічної клінічної анатомії
Одеський національний
медичний університет*

Vasilyev V. V.

*Assistant at the Department Normal and
Pathological clinical anatomy
Odessa National Medical University*

Васильєв В. В.

*асистент кафедри нормальної
та патологічної клінічної анатомії
Одеський національний медичний
університет*

Savenko T. O.

*Assistant at the Department of Normal
and Pathological clinical anatomy
Odessa National Medical University
Odesa, Ukraine*

Савенко Т. О.

*асистент кафедри нормальної
та патологічної клінічної анатомії
Одеський національний
медичний університет
м. Одеса, Україна*

The purpose of our study was to evaluate the features of endometrial restructuring when infected with the human immunodeficiency virus. Many different studies have investigated the immunological and hormonal aspects

of hyperplastic diseases of the uterus (HDU) [1–3, c. 1]. Many authors have shown a violation of the supervisory functions of the immune system, which regulate the processes of cell proliferation [4–7, c. 1]. These changes can be both hereditary and acquired during the expression or mutations of the corresponding genes during life [8, c. 1]. The results of other studies have suggested that there is a genetic predisposition to the development of HDU, and genetic determinants are the main risk factors triggering pathogenic mechanisms of proliferative processes in the uterus [9; 10, c. 1]. HIV (AIDS) today occupies a leading position among the causes of death of women of reproductive age all over the world. The disproportionate impact of HIV on young women may be due not only to social inequality, but also to biological patterns of heterosexual transmission of the virus [11–13, c. 2]. HIV infection is a disease that affects all organs and systems of a patient. Approximately 60–90% of HIV transmission occurs through sexual contact. Globally, women make up more than half of the population living with HIV. The majority of women become infected during sexual intercourse, when the mucous membrane is most vulnerable to HIV infection [14; 15, c. 2]. It has a special effect on the human reproductive system. Being an entrance gate, this pathological condition starts a cascade of pathological reactions, causing various changes in all organs of the reproductive system. The first line of defense against HIV infection in the female genital tract is the mucous membrane of the epithelial barrier [14, c. 2].

Materials and methods: The study involved sectional material taken from 60 women of reproductive age from 20 to 40 years. Group 1 (30 women) consisted of women who were diagnosed with HIV infection. The control group comprised women (30) without concomitant HIV infection.

Results. An average diameter of the endometrial glands (proliferative type) was 8% smaller in HIV infection than in the comparison group. The minimum diameter of the endometrial glands (proliferative type) decreased by 1.73%, the maximum was 5.24% less in the HIV-infected group than in the comparison group. The wall thickness was reduced by 0.5% in HIV infection. The relative volume of the epithelium decreased by 2.4% (proliferative type). There were also significant changes in the structure of the glands and endometrium in secretory phase, as in the proliferative type. Thus, the average diameter of the glands decreased by 5%, the minimum volume of the glands by 5.01%, the maximum by 11.2%, the wall thickness by 1.5%, the relative volume of the epithelium by 9.5%, less in the group HIV-infected than in the comparison group. The thickness of the epithelium increased by 4.5% in the HIV-infected group compared with the comparison group.

Conclusion. The study evaluated features of endometrial restructuring in the presence of concomitant HIV infection in women.

References:

1. Popova, L., Vasylyeva, L., Tkachenko, A., Polikarpova, H., Kokbas, U., Tuli, A, Kayrin, L., & Nakonechna, A. (2019) Menstrual cycle-related changes in blood serum testosterone and estradiol levels and their ratio stability in young healthy females. *Inter colleges*, 6(3), 155–161.
2. Lytvynenko, M., Bocharova, T., Zhelezniakova, N., Narbutova, T., & Gargin, V. (2017). Cervical transformation in alcohol abuse patients. *Georgian medical news*, (271), 12–17.
3. Shepherd, L., Borges, A., Ledergerber, B., Domingo, P., Castagna, A., Rockstroh, J., Knysz, B., Tomazic, J., Karpov, I., Kirk, O., Lundgren, J., Mocroft, A., & EuroSIDA in EuroCOORD (2016). Infection-related and -unrelated malignancies, HIV and the aging population. *HIV medicine*, 17(8), 590–600. <https://doi.org/10.1111/hiv.12359>
4. Hyriavenko, N., Lyndin, M., Sikora, K., Piddubnyi, A., Karpenko, L., Kravtsova, O., Hyriavenko, D., Diachenko, O., Sikora, V., & Romaniuk, A. (2019). Serous Adenocarcinoma of Fallopian Tubes: Histological and Immunohistochemical Aspects. *Journal of pathology and translational medicine*, 53(4), 236–243. <https://doi.org/10.4132/jptm.2019.03.21>
5. Pelchen-Matthews, A., Ryom, L., Borges H., Edwards, S., Duvivier, C., Stephan, C., Sambatakou, H., Maciejewska, K., Portu, J. J., Weber, J., Degen, O., Calmy, A., Reikvam, D. H., Jevtovic, D., Wiese, L., Smidt, J., Smiatacz, T., Hassoun, G., Kuznetsova, A., Clotet, B., EuroSIDA study (2018). Aging and the evolution of comorbidities among HIV-positive individuals in a European cohort. *AIDS (London, England)*, 32(16), 2405–2416. <https://doi.org/10.1097/QAD.0000000000001967>
6. Gargin, V., Radutny, R., Titova, G., Bibik, D., Kirichenko, A., & Bazhenov, O. (2020). Application of the computer vision system for evaluation of pathomorphological images. Paper presented at the 2020 IEEE 40th International Conference on Electronics and Nanotechnology, ELNANO 2020 – Proceedings, 469–473. doi:10.1109/ELNANO50318.2020.9088898
7. Wahlstrom, J. T., & Dobs, A. S. (2000). Acute and long-term effects of AIDS and injection drug use on gonadal function. *Journal of acquired immune deficiency syndromes* (1999), 25 Suppl 1, S27–S36. <https://doi.org/10.1097/00042560-200010001-00005>.

8. Bull, L., Tittle, V., Rashid, T., & Nwokolo, N. (2018). HIV and the menopause: A review. *Post reproductive health*, 24(1), 19–25. <https://doi.org/10.1177/2053369117748794>.

9. Lytvynenko, M., Shkolnikov, V., Bocharova, T., Sychova, L., & Gargin, V. (2017). Peculiarities of proliferative activity of cervical squamous cancer in hiv infection. *Georgian medical news*, (270), 10–15.

10. Zoufaly, A., Cozzi-Lepri, A., Reekie, J., Kirk, O., Lundgren, J., Reiss, P., Jevtic, D., Machala, L., Zangerle, R., Mocroft, A., Van Lunzen, J., & EuroSIDA in EuroCoord (2014). Immuno-virological discordance and the risk of non-AIDS and AIDS events in a large observational cohort of HIV-patients in Europe. *PloS one*, 9(1), e87160. <https://doi.org/10.1371/journal.pone.0087160>.

11. Roan, N. R., & Jakobsen, M. R. (2016). Friend or Foe: Innate Sensing of HIV in the Female Reproductive Tract. *Current HIV/AIDS reports*, 13(1), 53–63. <https://doi.org/10.1007/s11904-016-0305-0>.

12. Mor G. (2013). The female reproductive tract and HIV: biological, social and epidemiological aspects. *American journal of reproductive immunology* (New York, N.Y. : 1989), 69 Suppl 1, 1. <https://doi.org/10.1111/aji.12082>.

13. Chumachenko, D., & Chumachenko, T. (2020). Intelligent agent-based simulation of HIV epidemic process doi:10.1007/978-3-030-26474-1_13 14. Kafka, J. K., Sheth, P. M., Nazli, A., Osborne, B. J., Kovacs, C., Kaul, R., & Kaushic, C. (2012). Endometrial epithelial cell response to semen from HIV-infected men during different stages of infection is distinct and can drive HIV-1-long terminal repeat. *AIDS* (London, England), 26(1), 27–36. <https://doi.org/10.1097/QAD.0b013e32834e57b2>.

15. Reekie, J., Kowalska, J. D., Karpov, I., Rockstroh, J., Karlsson, A., Rakhmanova, A., Horban, A., Kirk, O., Lundgren, J. D., Mocroft, A., & EuroSIDA in EuroCoord (2012). Regional differences in AIDS and non-AIDS related mortality in HIV-positive individuals across Europe and Argentina: the EuroSIDA study. *PloS one*, 7(7), e41673. <https://doi.org/10.1371/journal.pone.0041673>.