SKIN REACTION ON HPV INFECCHIONS

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Introduction. Despite the huge number of studies on HPV infection, the development of HPV prevention in women of different age groups, the issue of early detection of carcinogenesis in the structures of the female reproductive system have not been solved yet [1–9]. Moreover, 98% spontaneously recover without treatment HPV — infection suggest some speculative to get vaccinated, and the lack of comprehensive evidence that certain strains are more common against cancer of the cervix is more pathogenic than others. Not resolved the issue, on which the depth of contamination in the epithelial layer of the virus [15, 19]. Given that about 30% of women are infected and have symptoms of the virus-genital warts, the relevance of the study of mucosal immune homeostasis of the cervix is extremely high.

The purpose of the study. Our research is devoted to the study of immune homeostasis mucous membrane of the cervix of women and the interaction of cells with different cluster immune phagocytic level of differentiation in the transition zone of stratified squamous epithelium of the cervix in a single-layer cylindrical.

Methods. The paper material used mucous membrane of the cervix in women aged 18 to 78 years. For clinical and patient consent is extracted material lining the cervix against papilloma warts. Additionally performed PCR-reaction to the identification and proof of strains of HPV. Immunohistochemistry to detect CD4, CD8, CD10, CD68, CD163, CD204 made phenotyping of immune cells and analyzed their quantitative relations, especially the topography of immune cells in PVH. Studied for comparison composition and topography immunocytes with PVH human skin. Analysis of the results was performed using a microscope Olympus BX51, illustrations derived from the digital camera CD x 25, the statistical treatment of the material is produced using proprietary software by Olympus.

Results and discussion. We found that in the lamina propria mucosa of the cervical canal and papillary dermis identified CD phenotypes: CD4, CD8, CD10, CD68, CD163, CD204. We observed that infection with papilloma CD68 antigen presenting cells are identified in large numbers only in the lamina propria of the mucous membrane, and completely absent in the epithelial plate. This indicates that the papilloma infection one of the key moments in the pathogenesis of dysgenesis and disruption recovery reservoir may be a perversion antigen presentation and subsequent immune cell interactions [10, 13, 20].

Conclusion. The mucous membrane of the cervix and the human skin with PVH violation stroke physiological regulation and the appearance of growths in the form of warts and genital warts due to a violation of antigen presentation CD68, their position in the underlying epithelium, connective tissue and the complete lack of epithelial layers. Our data are consistent with the data of other authors [11, 12, 14, 16–18].

References

1. **Assmann G, Sotlar K.** HPV-associated squamous cell carcinogenesis. //Pathologe. 2011 Sep;32(5): 391–8.
2. **Baeck M, Soria A, Marot L, Theate I, Hendrickx E, Van Belle A, Goossens A, Tennstedt D, Dachelet C, Jaeger J, Pilette C, Renauld JC, Van Baren N, Rozières A, Nicolas JF, Dumoutier L.** Characterization of the T cell response in allergic contact dermatitis caused by corticosteroids...Contact Dermatitis. 2013 Jun;68(6): 357–68.
3. **Begum S, Gillison ML, Ansari-Lari MA, Shah K, Westra WH.** Detection of human papillomavirus in cervical lymph nodes: a highly effective strategy for localizing site of tumor origin. Clin Cancer Res. 2003;9(17):6469–6475
4. **Barbuto S, Idoyaga J, Vila-Perelló M, Longhi MP, Breton G, Steinman RM, Muir TW.** Induction of innate and adaptive immunity by delivery of poly dA:dT to dendritic cells.//Nat Chem Biol. 2013 Apr;9(4):250-6.

5. **Borowicz K, Walczak L.** Pathomorphology of human papillomavirus (HPV) infection of the cervix uteri and vulva.// Patol Pol. 1990;41(1–2):43–51.
6. **Chalkia AK, Spandidos DA, Detorakis ET.** Viral involvement in the pathogenesis and Goubier A, Vocanson M, Macari C, Poyet G, Herbelin A, Nicolas JF, Dubois B, Kaiserlian D. Invariant NKT cells suppress CD8(+) T-cell-mediated allergic contact dermatitis independently of regulatory CD4(+) T cells.//J Invest Dermatol. 2013 Apr;133(4):980–7.
7. **Hofbauer GF, Freiberger SN, Iotzova-Weiss G, Shafaeddin B, Dziunycz PJ.** Organ transplantation and skin – principles and concepts. //Curr Probl Dermatol. 2012;43:1–8.
8. **Ibusuki C, Kunisada M, Ogura K, Ikeda T, Oda Y, Nishigori C.** Human papilloma virus type 16-associated verruca vulgaris on the digits with multiple cancerous anogenital lesions.//Eur J Dermatol. 2012 May-Jun;22(3):400–1.
9. **Idoyaga J, Steinman RM.** SnapShot: Dendritic Cells.//Cell. 2011 Aug 19;146(4):660–660.
10. **Gourin CG, Williams HT, Seabolt WN, Herdman AV, Howington JW, Terris DJ.** Utility of positron emission tomography-computed tomography in identification of residual nodal disease after chemoradiation for advanced head and neck cancer. Laryngoscope. 2006;116(5):705–710
11. **Leemans CR, Tiwari R, Nauta JJP, van der Waal I, Snow GB.** Recurrence at the primary site in head and neck cancer and the significance of neck lymph node metastases as a prognostic factor. Cancer. 1994;73(1):187–190
12. **Nakayama Y, Asagoe K, Yamauchi A, Yamamoto T, Shirafuji Y, Morizane S, Nakanishi G, Iwatsuki K.** Dendritic cell subsets and immunological milieu in inflammatory human papilloma virus-related skin lesions. //J Dermatol Sci. 2011 Sep;63(3):173–83.
13. **Orlando PA, Brown JS, Gatenby RA, Guliano AR.** The ecology of human papillomavirus-induced epithelial lesions and the role of somatic evolution in their progression. //J Infect Dis. 2013 Aug;208(3):394–402.
14. **Palucka K, Banchereau J.** Dendritic-cell-based therapeutic cancer vaccines.//Immunity. 2013 Jul 25;39(1):38–48.
15. **Schwartz J, Pavlova S, Kolokythas A, Lugakingira M, Tao L, Miloro M.** Streptococci-human papilloma virus interaction with ethanol exposure leads to keratinocyte damage. // J Oral Maxillofac Surg. 2012 Aug;70(8):1867–79.
16. **Shayanfar N, Hosseini N, Panahi M, Azadmanesh K, Mohammadpour M, Kadivar M, Mirzaie AZ, Sohrabi A.** Detection of mucosal type human papillomavirus in cutaneous squamous cell carcinoma in Iran.//Pathol Res Pract. 2013 Feb 15;209(2):90–4.
17. **Ueno H, Klechevsky E, Morita R, Aspord C, Cao T, Matsui T, Di Pucchio T, Connolly J, Fay JW, Pascual V, Palucka AK, Banchereau J.** Dendritic cell subsets in health and disease. Immunol Rev. 2007 Oct;219:118-42.
18. **Wang B, Zaidi N, He LZ, Zhang L, Kuroiwa JM, Keler T, Steinman RM.** Targeting of the non-mutated tumor antigen HER2/neu to mature dendritic cells induces an integrated immune response that protects against breast cancer in mice.//Breast Cancer Res. 2012 Mar 7;14(2):R39.
19. **Yarilin AA, Sharova NI, Dzutzev AK.** Interaction between T Lymphocytes and Epithelial Cells in Thymus.//Russ J Immunol. 1999 Oct;4(3):224–228.
20. **Yarilin AA, Sharova NI, Bulanova EC, Kotchergina NI, Mitin AN, Kharchenko TY, Arshinov VY.** Hormone Production by Epithelial Cells of Human Thymus in vitro.//Russ J Immunol. 1996 Dec;1(1):17–22.
21. **Yarilin AA, Belyakov IM, Kusmenok OI, Arshinov VY, Simonova AV, Nadezhina NM, Gnezditskaya EV.** Late T cell deficiency in victims of the Chernobyl radiation accident: possible mechanisms of induction.//Int J Radiat Biol. 1993 Apr;63(4):519–28.