

FEATURES OF OXIDANT-ANTIOXIDANT HOMEOSTASIS IN WOMEN WITH CLIMACTERIC KERATODERMA

About the author	Makurina H.I., Synakh O.K.
Heading	ORIGINAL RESEARCHES
Type of article	Scientific Article
Annotation	<p>Introduction. Current data on the pathogenesis of acantholytic pemphigus emphasize the important role of desmoglein 3 (Dsg 3) in the initiation of the autoimmune process and the formation of the clinical phenotype of the disease. The aim is to determine the level of circulating antibodies to Dsg3 in patients with different clinical forms of pemphigus and assess the relationship with the severity of the disease.</p> <p>Materials and methods. The study included 24 patients with acantholytic pemphigus (4 patients with the debut of the disease and 20 patients at different stages of the disease: exacerbation of dermatosis, relapse, induction of remission, remission stage) and 4 patients with sheet-like pemphigus. Disease severity was assessed using a validated dissemination index scoring system – IKEDA. Using an enzyme-linked immunosorbent assay using a kit for determining human Dsg 3 (Desmoglein-3), FineTest (China) Enzyme-Linked immunosorbent assay Kit for research use only Human DSG 3 ELISA Kit, the levels of anti-Dsg 3 antibodies in the blood serum of patients with acantholytic and foliate pemphigus and control group individuals were determined.</p> <p>Results. 4 (16.7%) patients had mild disease, 11 (45.8%) had moderate disease, and 9 (37.5%) had severe disease. In 24 out of 24 serum samples from patients with vulgar pemphigus and 4 out of 4 serum samples from patients with foliate pemphigus, the level of anti-desmoglein-3 exceeded the limit value. None of the 10 control samples were positive for antibodies to desmoglein-3. Antibody levels to desmoglein 3 correlate with the severity of acantholytic pemphigus, decreasing as the severity of the dermatosis decreases from severe to mild. The possibility of using anti-Dsg 3 antibody levels as a prognostic marker of the course of the disease was assessed.</p> <p>Conclusions. It was found that the levels of antibodies to desmoglein 3 correlate with the severity of acantholytic pemphigus, decreasing as the severity of the dermatosis decreases from severe to mild. Determination of the level of antibodies to desmoglein-3 in the serum of patients with acantholytic pemphigus can be used as a means of monitoring the activity of the process and the effectiveness of treatment.</p>
Tags	<i>climacteric changes, oxidative protein modification, antioxidant system, homeostasis, diagnostics</i>
Bibliography	<ol style="list-style-type: none"> 1. Chekman I.S, Bielenichev I.F., Nahorna O.O. et al. Doklinichne vyvchennia spetsyficnoi aktyvnosti potentsiinykh likarskykh zasobiv pervynnoi ta vtorynnoi neiroproteksii: metodychni rekomendatsii [Preclinical study of specific activity of potential drugs for primary and secondary neuroprotection: methodological recommendations]. Kyiv; 2016. 93 p. Ukrainian 2. Chandankhede M., Gupta M., Pakhmode S. Assessment of Psychological Status and Oxidative Stress in Postmenopausal Women: A Cross-Sectional Study. J Menopausal Med.2021;27(3):155–161. doi: 10.6118/jmm.20035. 3. Chen J., Liu Y., Zhao Z., Qiu J. Oxidative stress in the skin: Impact and related protection.Int J Cosmet Sci. 2021;43(5):495–509. doi: 10.1111/ics.12728. 4. Dai X., Hu Y., Jiang L. et al. Decreased oxidative stress response and oxidant detoxification of skin during aging. Mech Ageing Dev. 2023;216:111878. doi: 10.1016/j.mad.2023.111878. 5. Goutami L., Jena S.R., Swain A., Samanta L. Pathological Role of Reactive Oxygen Species on Female Reproduction. Adv Exp Med Biol. 2022;1391:201–220. doi: 10.1007/978-3-031-12966-7_12 6. Kamp E., Ashraf M., Musbahi E., DeGiovanni C. Menopause, skin and

- common dermatoses. Part 2: skin disorders. Clin Exp Dermatol. 2022;47(12): 2117–2122. doi: 10.1111/ced.15308.
7. Tatti A., Conti B., Corbeddu M., Uda M., et al. Keratoderma climactericum: an under-reported condition successfully treated with an estriol cream. Journal of Applied Cosmetology. 2024;42(1):40–44. doi: 10.56609/jac.v42i1.329.
 8. Lephart E.D., Naftolin F. Factors Influencing Skin Aging and the Important Role Of Estrogens and Selective Estrogen Receptor Modulators (SERMs). Clin Cosmet Investig Dermatol. 2022;15:1695–1709. doi: 10.2147/CCID.S333663.
 9. Letsiou S. Tracing skin aging process: a mini- review of in vitro approaches. Biogerontology. 2021;22(3):261–272. doi: 10.1007/s10522–021–09916-z.
 10. Siusiuka V.H., Sergienko M. Yu., Pavliuchenko M.I. et. al. Management of Menopausal disorders in women at risk: potential and advantages of transdermal estrogen: Literature review. Reproductive endocrinology. 2024;74:39–46. doi: 10.18370/2309–4117.2024.74.39–46
 11. Merzel Šabović E.K., Kocjan T., Zalaudek I. Treatment of menopausal skin – A narrative review of existing treatments, controversies, and future perspectives. Post Reprod Health. 2024;30(2):85–94. doi: 10.1177/20533691241233440.
 12. Nair P.A. Dermatoses associated with menopause. J Midlife Health. 2014;5(4): 168–75. doi: 10.4103/0976–7800.145152.
 13. Norman T., Obed O., Chen A., Worswick S. Palmoplantar keratoderma Climactericum successfully treated with topical oestrogen. J Adv Clin Practice. 2024;3(1):309–312. doi:10.1002/jvc2.277.
 14. Cagnacci A., Gazzo I., Stigliani S. et al. Oxidative Stress: The Role of Estrogen and Progesterone. J Clin Med. 2023;12(23):7304. doi: 10.3390/jcm12237304.
 15. Phaniendra A., Jestadi D.B., Periyasamy L. Free radicals: properties, sources, targets, and their implication in various diseases. Indian J Clin Biochem. 2015;30(1): 11–26. doi: 10.1007/s12291–014–0446–0.
 16. Pignatelli P., Menichelli D., Pastori D., Violi F. Oxidative stress and cardiovascular disease: new insights. Kardiol Pol. 2018;76(4):713–722. doi: 10.5603/KP.a2018.0071.
 17. Siusiuka V.H., Vizir V.A., Serhienko M. Yu. et al. Perimenopause period and menopause: cardiovascular and metabolic risks. Zaporozhye Medical Journal. 2024;26(5):424–429. doi:10.14739/2310–1210.2024.5.303438
 18. Xiang D., Liu Y., Zhou S., et al. Protective Effects of Estrogen on Cardiovascular Disease Mediated by Oxidative Stress. Oxid Med Cell Longev. 2021;2021:5523516. doi:10.1155/2021/5523516
 19. Siusiuka V.G., Serhienko M. Yu., Pavliuchenko M.I. et al. Short- and long-term impact by vasomotor symptoms in menopause and modern approaches to their correction. Reproductive health of woman. 2024;4 (75):63–69. doi: 10.30841/2708–8731.4.2024.306540
 20. Bourgonje M.F., Bourgonje A.R., Abdulle A.E., et al. Systemic Oxidative Stress, Aging and the Risk of Cardiovascular Events in the General Female Population. Front Cardiovasc Med. 2021;8:630543. doi: 10.3389/fcvm.2021.630543.
 21. Gu Y., Han F., Xue M. et al. The benefits and risks of menopause hormone therapy for the cardiovascular system in postmenopausal women: a systematic review and meta-analysis. BMC Womens Health. 2024;24(1):60. doi:10.1186/s12905–023–02788–0
 22. Thornton M.J. Estrogens and aging skin. Dermatoendocrinol. 2013;5(2): 264–270.
 23. Viscomi B., Muniz M., Sattler S. Managing Menopausal Skin Changes: A Narrative Review of Skin Quality Changes, Their Aesthetic Impact, and the Actual Role of Hormone Replacement Therapy in Improvement. J Cosmet Dermatol. 2025;24 Suppl 4(Suppl 4): e70393. doi: 10.1111/jocd.70393.
 24. Wilkinson H.N., Hardman M.J. A role for estrogen in skin ageing and dermal biomechanics. Mech Ageing Dev. 2021;197:111513. doi: 10.1016/j.mad.2021.111513.
 25. Zejnullahu V.A., Zejnullahu V.A., Kosumi E. The role of oxidative stress in patients with recurrent pregnancy loss: a review. Reprod Health. 2021;18(1):207. doi: 10.1186/s12978–021–01257-x.

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