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ARTIFICIAL INTELLIGENCE APPLICATIONS IN DIAGNOSING AND MANAGING INFLAMMATORY DERMATOSES

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ABSTRACT

Background: Artificial intelligence (AI) is becoming increasingly popular in many medical fields, including dermatology. AI-supported image analysis algorithms have shown high accuracy in classifying dermoscopic images. However, research focuses on skin cancers, even though inflammatory dermatoses account for most dermatological consultations.
Objectives: This review aims to provide an analysis of AI applications in diagnosing, scoring and monitoring treatment of common inflammatory diseases.
Methods: A comprehensive examination of medical literature was conducted. Scientific databases such as PubMed, Elsevier and ScienceDirect were searched for relevant publications. The final selection of publications was made based on quality and relevance to the topic.
Key findings: The applications of AI are seen in diagnostics, severity scoring, classification, treatment planning and treatment monitoring of inflammatory dermatoses. AI models demonstrate a high accuracy in image-based diagnoses. Beyond skin imaging, they effectively integrate data such as gut transcriptomics, microbiome signatures, and pyroptosis-related biological markers to distinguish atopic dermatitis. Furthermore, AI algorithms automate severity scoring systems, such as the Psoriasis Area and Severity Index (PASI) and Eczema Area and Severity Index (EASI). Advanced learning models support treatment planning by identifying symptom causes and predicting therapeutic responses. Lastly, AI-supported image analysis enables objective monitoring of treatment efficacy.
Conclusions: AI is a powerful tool that helps transition inflammatory dermatology from subjective, reactive management to objective, data-driven precision medicine. Due to its speed and versatility, AI is transforming dermatology by supporting clinicians in diagnosis, treatment selection and treatment monitoring, as well as providing new data for better understanding of inflammatory dermatoses.

KEYWORDS

Artificial Intelligence, Dermatology, Inflammatory Dermatoses, Atopic Dermatitis, Psoriasis, Rosacea

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Introduction

When AI was first introduced in dermatology, research focused on skin cancer diagnostics. Pigmented lesion classification using AI was used as early as the 1990s (Kalidindi, 2024). Studies conclude that AI-based scoring of skin cancers is reliable, with the potential to improve and speed up the process of diagnosing skin cancers. In multiple studies, AI learning models have been shown to be just as accurate as, and in some cases even more accurate than, dermatologists in identifying and scoring skin cancers (Brinker et al., 2019; Friedman et al., 2008; Fujisawa et al., 2019; Salinas et al., 2024). In 2023, a study concluded that AI-based scoring of AK using LC-OCT images had a 71,3% agreement with visual assessment (Daxenberger et al., 2023). In 2020, a study concluded that AI techniques match or surpass dermatologists' performance in the diagnosis of melanoma (Fink et al., 2020).

Despite AI's groundbreaking success in dermato-oncology, skin cancers represent only a small fraction of patients encountered in daily clinical practice (Kubrak et al., 2025). Consequently, research has expanded beyond malignancy detection to other areas of dermatology. Unlike pigmented lesions, inflammatory dermatoses present diffuse patterns, overlapping morphological features and variable body surface area distribution. Therefore, applying AI to these conditions requires expanding beyond single lesion analysis to severity scoring and pattern recognition across a larger area. This review will focus on chronic inflammatory diseases such as psoriasis, atopic dermatitis (eczema), and rosacea, as they represent a much larger group of patients.

Inflammatory dermatoses are a group of chronic multifactorial conditions of the skin. This article focuses on atopic dermatitis, psoriasis and rosacea, as they are some of the most prevalent representatives of this group. These disorders are characterised by complex pathophysiology involving genetic factors, immune

dysregulation, barrier dysfunction and environmental triggers (Chovatiya & Silverberg, 2019). Due to their chronic nature and relapses, these patients require not only a diagnosis and single treatment but often a lifetime of symptom management and flare-up prevention strategies. Because their clinical presentations can frequently overlap and exhibit high variability, diagnosis can be hard to reach (Li et al., 2025). Emerging AI approaches are increasingly utilised to improve diagnostic precision, disease staging and treatment strategies.

Methodology

To identify relevant articles for this review, scientific databases such as PubMed, Elsevier and ScienceDirect were searched. To broaden the search reference lists of selected articles were searched and "similar article" recommendation features were used. The search used keywords related to the topic, such as artificial intelligence, learning models, inflammatory dermatoses, atopic dermatitis, psoriasis, and acne vulgaris. The final selection of articles relevant to this review was based on manual evaluation of the quality and relevance to the topic.

AI applications in diagnosing inflammatory dermatoses

Image-based AI applications in diagnosing inflammatory dermatoses

Dermatology largely relies on visual examination. Whether using non-invasive skin imaging techniques or biopsies, clinicians need to visually examine the skin to establish a diagnosis. Image analysis algorithms are used to facilitate examination and minimise the variability of human expert analysis.

Dermoscopy is one of the most commonly used non-invasive skin imaging techniques in dermatology. Different skin conditions display distinct features under dermoscopy, enabling diagnosis. In 2022, a study demonstrated the effectiveness of AI models combined with dermoscopy in the differential diagnosis of rosacea. An AI model was established by providing basic data, clinical symptoms, skin physiology data and dermoscopy images. The algorithm's accuracy rate in differentiating rosacea patients from patients with other facial skin diseases, as well as healthy patients, exceeded 90%. This showed that dermoscopy combined with AI could facilitate rosacea diagnosis, especially for inexperienced physicians (Ge et al., 2022).

Multiphoton tomography is used in dermatology as non-invasive 3D skin imaging. It provides information on tissue morphology and its metabolism. However, the results analysis is still operator-dependent and time-consuming. In 2020, a study was conducted in which learning algorithms were used to analyse multiphoton tomography images of healthy skin and atopic dermatitis, and to compare their diagnostic accuracy with that of human experts. The AI algorithm correctly diagnosed 97% of patients (Guimarães et al., 2020). This shows that AI, when used with appropriate skin imaging techniques, can facilitate the diagnosis of skin diseases.

AI applications in diagnosing inflammatory dermatoses beyond image-based models

AI advances extend beyond the standard image-based models to integrate diverse clinical and biological datasets. In recent years, interest in the gut-skin axis has increased. Following this trend, AI has been used to help distinguish patients with atopic dermatitis from healthy individuals, based on gut transcriptomics and microbiome. 35 predictive genes, including GRP1, CCL22, TTC27, and 50 microbiota features, including Akkermansia spp., Verrucomicrobia spp., and Propionibacterium spp., have helped in this classification (Jiang et al., 2022). This shows a direct connection between the skin and the gut and highlights an opportunity to expand the diagnostic process of skin diseases, such as atopic dermatitis, beyond the skin.

AI has also been used to identify pyroptosis-related biological markers of atopic dermatitis. Immune cells infiltration demonstrated significantly higher activated CD4+ memory T cells and dendritic cells, and significantly lower resting mast cells in patients with atopic dermatitis, compared to healthy patients. An XGB model based on five pyrosis-related biological markers was found to be accurate in diagnosing atopic dermatitis(Wu et al., 2023).

Diagnosing inflammatory dermatoses also comes with the challenge of overlapping characteristics of diseases from this group. A 2020 study found distinct immune and barrier signatures in AD and psoriasis skin using RNA-seq tape strip profiling. This suggested that tape strips could be useful in diagnosing these two diseases(He et al., 2021).

AI applications in severity scoring of psoriasis and atopic dermatitis

Beyond diagnosing and classifying inflammatory dermatoses, AI can determine their severity. Psoriasis is evaluated using the Psoriasis Area and Severity Index (PASI). PASI combines lesion severity characteristics and affected body surface area to provide a scoring system for evaluating and quantifying the severity and evolution of plaque psoriasis. In a study performed in 2017, an AI model segmenting psoriatic lesions from images, was developed. The model analysed clinical images pixel by pixel, classifying each pixel as either healthy skin or a lesion site, based on colour, entropy and light intensity. This model laid a foundation for more advanced models that now automate full PASI scoring(George et al., 2017). Automated models eliminate human evaluator variability, providing a standardised, reliable severity-scoring aid in daily practice and clinical trials.

Another inflammatory disease that often requires severity-scoring is atopic dermatitis. The Eczema Area and Severity Index (EASI) evaluates physical signs of the condition and the percentage of body surface area affected to assess the severity of atopic dermatitis. Deep learning frameworks have been developed to automate EASI calculations by analysing clinical and smartphone images of atopic dermatitis patients. Studies evaluating smartphone-based AI models demonstrate that they can accurately interpret photos captured without cropping or controlled lighting (Bang et al., 2021). As with PASI in psoriasis, human EASI scoring can be subjective and vary among evaluators. AI tools eliminate human bias and allow for an accurate and repeatable severity scoring, which can be used for initial diagnostics and management of skin diseases such as atopic dermatitis and psoriasis.

AI applications in treatment planning of inflammatory dermatoses

Treatment of inflammatory dermatoses follows a multidirectional approach. It is tailored based on symptom severity, body area affected and individual patient factors. Mild to moderate cases can be treated with localised topical therapies, while moderate to severe cases may require systemic treatment. Due to the multifactorial pathogenesis of these diseases, treatment is often difficult to predict, and it is often based on a trial-and-error approach.

Classifying clinical subtypes of diseases using AI algorithms

Classifying clinical subtypes of diseases can help understand the underlying cause of symptoms, therefore allowing for the establishment of an appropriate causal treatment plan. A 2024 study combined AI with transcriptome sequencing to objectively classify rosacea subtypes as inflammatory and neurogenic(Mao & Li, 2024). This is particularly important as traditional diagnosis relies on subjective clinical observation rather than objective data, but treatment of these two subtypes is different. Patients presenting inflammatory features are treated topically with metronidazole, azelaic acid or sulphur, or systemically with antibiotics and antimalarial agents. Treatment targeted at neurological causes of rosacea includes neuroleptic agents, tricyclic antidepressants and pain-modifying antidepressants(Scharschmidt et al., 2010). Therefore, identifying the underlying cause can help determine the right treatment plan.

Predicting therapeutic response

The trial-and-error nature of standard treatment plans for inflammatory dermatoses can result in many unsuccessful treatments before an effective one is finally implemented. This can lead to prolonged flare-ups, which negatively affect patients' quality of life(Anderson et al., 2021; Ponikowska et al., 2025). Studies have addressed this problem by using AI to predict therapeutic response in psoriasis patients. AI models analyse clinical, proteomic and transcriptomic data to predict individual therapeutic outcomes and guide precision medicine. A study performed between 2016 and 2017 used AI to predict whether psoriasis patients would become fast-responders to secukinumab, based on complete blood count. The predictive model created had an overall predictive accuracy of 91.88%(Damiani et al., 2020). Furthermore, in a 2024 study, clustering algorithms applied to skin transcriptomes have successfully identified distinct psoriasis molecular subtypes that favour specific forms of treatment. Some profiles favoured methotrexate or anti-IL-12/23 therapies while others showed a greater responsiveness to anti-TNF-alfa or anti-17RA agents(Zhang et al., 2024). Ultimately, these AI applications help eliminate the trial-and-error nature of tradition drug selection, enabling patients to receive targeted therapies for optimal disease management.

Discovering relationships between conditions

Beyond treating the primary disease, discovering patterns and cooccurrence of different conditions allows for implementing effective prevention techniques. AI-supported methods are transforming research by uncovering molecular relationships and shared biomarkers for different diseases. A 2025 study used Mendelian randomisation and found a potential causal link between rosacea and cardiovascular disease (Gao et al., 2025). Finding relationships between these two diseases is useful in daily practice as the diagnosis of one of them could potentially facilitate the diagnosis of the other. Risk management allows for more effective prevention and early start of treatment.

AI applications in monitoring treatment efficiency of inflammatory dermatoses

Treatment of inflammatory diseases is monitored in order to track its efficacy, introduce changes in treatment plans, manage flare-ups and maintenance during periods of remission. In daily practice, this is done using scoring aids, biopsies and non-invasive skin imaging techniques. Additionally, patient self-assessment is also an important factor in their satisfaction with treatment.

Non-invasive skin imaging techniques are growing in popularity as they minimise patient discomfort associated with biopsies while providing quantitative data on treatment efficacy. Constant developments in these techniques, such as implementing AI, facilitate data collection and offer growing accuracy of the data collected. A few studies have demonstrated the use of image-based deep learning models to classify diseases. A 2021 study highlighted the importance of AI-supported skin segmentation in high-frequency ultrasound. Segmentation of skin layers allows measuring layer thickness, which is particularly useful in monitoring treatment efficacy of patients with chronic inflammatory dermatoses. Accurate and reliable AI-based measurements help standardise this process and eliminate the problem of high variability of measurements made by human experts(Czajkowska et al., 2021).

A study from 2020 introduced soft, thin, wireless and battery-free skin hydration sensors that advance self-monitoring of atopic dermatitis into objective data rather than subjective assessments. This technique measures the thermal properties of the skin up to 1mm in depth. This device had a strong diagnostic capacity of distinguishing lesions from healthy areas by noting significant differences in the water content of these areas. Additionally, it was compatible with smartphones, offering a versatile tool for at-home monitoring of chronic skin diseases, managing flareups and monitoring at home topical treatment(Madhvapathy et al., 2020).

Discussion

Current challenges

The use of AI in dermatology facilitates the shift from subjective, reactive management to objective, data-driven precision medicine. While dermato-oncology has dominated AI research, expanding applications to other conditions, such as inflammatory dermatoses, allows for the implementation of these technologies in a larger group of patients.

Despite these promising advances, several challenges limit the widespread of AI in inflammatory dermatology. Unlike pigmented lesions, inflammatory dermatoses present with diffuse patterns, overlapping morphological features and variable body surface area affected. Training models require large, diverse and well-annotated datasets. Image quality and variable lighting can introduce bias and reduce the diagnostic value of these technologies.

Furthermore, skin tone affects the clinical presentation of skin diseases. Inflammatory dermatoses manifest differently across different Fitzpatrick skin types. For example, atopic dermatitis, presents differently on patients of different skin colour and ethnicity. African American patients commonly exhibit lichenification and a higher degree of papular involvement of lesions with perifollicular accentuation. Asian patients more often exhibit psoriasiform thickening and scaling. Aside from morphological differences, erythema is harder to distinguish on darker skin types (Adawi et al., 2023). This visual variability creates a challenge for creating AI models that are universal for every patient.

Another challenge that arises with the use of AI in clinical practice is ethical in nature. Many clinicians might hesitate to use these technologies without a clear understanding of the underlying algorithmic reasoning, as accountability for possible mistakes raises many questions. Because the stakes involve human lives, AI systems should focus on assisting rather than replacing human judgment, therefore ensuring that clinicians maintain final oversight of the diagnostic and treatment processes.

Opportunities and future direction

Looking forward, AI offers numerous opportunities to transform daily clinical practice across multiple dimensions of patient care, including enhanced diagnostics, automated severity scoring, advanced precision medicine, remote monitoring and holistic patient care. AI can facilitate diagnostics by providing a larger range of effective diagnostic tools. Using image analysis and multimodal data such as microbiome profiles, transcriptomics, and tape-strip data, it offers an opportunity to expand diagnostics for inflammatory diseases beyond visual examination and biopsies, enabling more precise methods. Automated severity scoring, such as PASI and EASI, using deep learning algorithms creates an opportunity to reduce human bias in daily practice and clinical trials. Integrating patient-specific proteomic, transcriptomic and clinical data could dismantle the trial-and-error approach to treatments of inflammatory diseases by matching patients with the most effective biological therapies and eliminating the therapy options that are most likely to fail based on their profile. Furthermore, AI can expand self-monitoring of chronic inflammatory diseases by using wearable sensors that provide patients with quantitative data about their skin condition. This bridges the gap between clinical visits and allows patients to have more control in monitoring and managing their condition. Finally, AI tools will help uncover comorbidities and causal relationships between inflammatory skin conditions, such as the established link between rosacea and cardiovascular disease, enabling comprehensive and proactive risk management.

Conclusions

Ultimately, the integration of AI in diagnosing and treating inflammatory diseases marks a shift away from subjective evaluation toward future objective, personalised and patient-centric care. AI not only facilitates and unifies visual inspection by human experts but also extends management and diagnostics of inflammatory dermatoses by incorporating multi-omic biomarkers and remote sensor tracking. Ultimately, as these algorithms transform from experimental research to routine medical practice, AI will serve as an invaluable tool in daily dermatological practice.

Conflict of interest: No conflicts of interest to declare.

REFERENCES

1. Adawi, W., Cornman, H., Kambala, A., Henry, S., & Kwatra, S. G. (2023). Diagnosing atopic dermatitis in skin of color. *Dermatologic Clinics*, *41*(3), 417–429. https://doi.org/10.1016/j.det.2023.02.003
2. Anderson, P., Austin, J., Lofland, J. H., Piercy, J., & Joish, V. N. (2021). Inadequate disease control, treatment dissatisfaction, and quality-of-life impairments among US patients receiving topical therapy for atopic dermatitis. *Dermatology and Therapy*, *11*(5), 1571–1585. https://doi.org/10.1007/s13555-021-00580-2
3. Bang, C. H., Yoon, J. W., Ryu, J. Y., Chun, J. H., Han, J. H., Lee, Y. B., Lee, J. Y., Park, Y. M., Lee, S. J., & Lee, J. H. (2021). Automated severity scoring of atopic dermatitis patients by a deep neural network. *Scientific Reports*, *11*(1), 6049. https://doi.org/10.1038/s41598-021-85489-8
4. Brinker, T. J., Hekler, A., Enk, A. H., Berking, C., Haferkamp, S., Hauschild, A., Weichenthal, M., Klode, J., Schadendorf, D., Holland-Letz, T., Von Kalle, C., Fröhling, S., Schilling, B., & Utikal, J. S. (2019). Deep neural networks are superior to dermatologists in melanoma image classification. *European Journal of Cancer*, *119*, 11–17. https://doi.org/10.1016/j.ejca.2019.05.023
5. Chovatiya, R., & Silverberg, J. I. (2019). Pathophysiology of atopic dermatitis and psoriasis: Implications for management in children. *Children*, *6*(10), 108. https://doi.org/10.3390/children6100108
6. Czajkowska, J., Badura, P., Korzekwa, S., & Płatkowska-Szczerek, A. (2021). Deep learning approach to skin layers segmentation in inflammatory dermatoses. *Ultrasonics*, *114*, 106412. https://doi.org/10.1016/j.ultras.2021.106412
7. Damiani, G., Conic, R., Pigatto, P., Carrera, C., Franchi, C., Cattaneo, A., Malagoli, P., Uppala, R., Linder, D., Bragazzi, N., & Grossi, E. (2020). Predicting Secukinumab fast-responder profile in psoriatic patients: Advanced application of artificial-neural-networks (ANNs). *Journal of Drugs in Dermatology*, *19*(12), 1241–1246. https://doi.org/10.36849/JDD.2020.5006
8. Daxenberger, F., Deußing, M., Eijkenboom, Q., Gust, C., Thamm, J., Hartmann, D., French, L., Welzel, J., Schuh, S., & Sattler, E. (2023). Innovation in actinic keratosis assessment: Artificial intelligence-based approach to LC-OCT PRO score evaluation. *Cancers*, *15*(18), 4457. https://doi.org/10.3390/cancers15184457
9. Fink, C., Blum, A., Buhl, T., Mitteldorf, C., Hofmann-Wellenhof, R., Deinlein, T., Stolz, W., Trennheuser, L., Cussigh, C., Deltgen, D., Winkler, J. K., Toberer, F., Enk, A., Rosenberger, A., & Haenssle, H. A. (2020). Diagnostic performance of a deep learning convolutional neural network in the differentiation of combined naevi and melanomas. *Journal of the European Academy of Dermatology and Venereology*, *34*(6), 1355–1361. https://doi.org/10.1111/jdv.16165

10. Friedman, R. J., Gutkowicz-Krusin, D., Farber, M. J., Warycha, M., Schneider-Kels, L., Papastathis, N., Mihm, M. C., Googe, P., King, R., Prieto, V. G., Kopf, A. W., Polsky, D., Rabinovitz, H., Oliviero, M., Cognetta, A., Rigel, D. S., Marghoob, A., Rivers, J., Johr, R., … Tsao, H. (2008). The diagnostic performance of expert dermoscopists vs a computer-vision system on small-diameter melanomas. *Archives of Dermatology*, *144*(4). https://doi.org/10.1001/archderm.144.4.476
11. Fujisawa, Y., Otomo, Y., Ogata, Y., Nakamura, Y., Fujita, R., Ishitsuka, Y., Watanabe, R., Okiyama, N., Ohara, K., & Fujimoto, M. (2019). Deep-learning-based, computer-aided classifier developed with a small dataset of clinical images surpasses board-certified dermatologists in skin tumour diagnosis. *British Journal of Dermatology*, *180*(2), 373–381. https://doi.org/10.1111/bjd.16924
12. Gao, Y., Xu, C., & Yan, Q. (2025). Genetic analyses reveal association between rosacea and cardiovascular diseases. *Scientific Reports*, *15*(1), 6657. https://doi.org/10.1038/s41598-025-91240-4
13. Ge, L., Li, Y., Wu, Y., Fan, Z., & Song, Z. (2022). Differential diagnosis of rosacea using machine learning and dermoscopy. *Clinical, Cosmetic and Investigational Dermatology*, *15*, 1465–1473. https://doi.org/10.2147/CCID.S373534
14. George, Y. M., Aldeen, M., & Garnavi, R. (2017). Automatic psoriasis lesion segmentation in two-dimensional skin images using multiscale superpixel clustering. *Journal of Medical Imaging*, *4*(04), 1–14. https://doi.org/10.1117/1.JMI.4.4.044004
15. Guimarães, P., Batista, A., Zieger, M., Kaatz, M., & Koenig, K. (2020). Artificial intelligence in multiphoton tomography: Atopic dermatitis diagnosis. *Scientific Reports*, *10*(1), 7968. https://doi.org/10.1038/s41598-020-64937-x
16. He, H., Bissonnette, R., Wu, J., Diaz, A., Saint-Cyr Proulx, E., Maari, C., Jack, C., Louis, M., Estrada, Y., Krueger, J. G., Zhang, N., Pavel, A. B., & Guttman-Yassky, E. (2021). Tape strips detect distinct immune and barrier profiles in atopic dermatitis and psoriasis. *Journal of Allergy and Clinical Immunology*, *147*(1), 199–212. https://doi.org/10.1016/j.jaci.2020.05.048
17. Jiang, Z., Li, J., Kong, N., Kim, J.-H., Kim, B.-S., Lee, M.-J., Park, Y. M., Lee, S.-Y., Hong, S.-J., & Sul, J. H. (2022). Accurate diagnosis of atopic dermatitis by combining transcriptome and microbiota data with supervised machine learning. *Scientific Reports*, *12*(1), 290. https://doi.org/10.1038/s41598-021-04373-7
18. Kalidindi, S. (2024). The role of artificial intelligence in the diagnosis of melanoma. *Cureus*. https://doi.org/10.7759/cureus.69818
19. Kubrak, A., Zimny-Zając, A., Makuch, S., Pawelec, Ł., Jankowska-Polańska, B., Tański, W., Szepietowski, J. C., & Agrawal, S. (2025). Epidemiology of skin diseases in Poland: Analysis of prevalence and risk factors: A cross-sectional study. *Dermatology and Therapy*, *15*(8), 2179–2199. https://doi.org/10.1007/s13555-025-01464-5
20. Li, M., Wang, J., Liu, Q., Liu, Y., Mi, W., Li, W., & Li, J. (2025). Beyond the dichotomy: Understanding the overlap between atopic dermatitis and psoriasis. *Frontiers in Immunology*, *16*, 1541776. https://doi.org/10.3389/fimmu.2025.1541776
21. Madhvapathy, S. R., Wang, H., Kong, J., Zhang, M., Lee, J. Y., Park, J. B., Jang, H., Xie, Z., Cao, J., Avila, R., Wei, C., D'Angelo, V., Zhu, J., Chung, H. U., Coughlin, S., Patel, M., Winograd, J., Lim, J., Banks, A., … Rogers, J. A. (2020). Reliable, low-cost, fully integrated hydration sensors for monitoring and diagnosis of inflammatory skin diseases in any environment. *Science Advances*, *6*(49), eabd7146. https://doi.org/10.1126/sciadv.abd7146
22. Mao, R., & Li, J. (2024). Construction of a molecular diagnostic system for neurogenic rosacea by combining transcriptome sequencing and machine learning. *BMC Medical Genomics*, *17*(1), 232. https://doi.org/10.1186/s12920-024-02008-0
23. Ponikowska, M., Vellone, E., Czapla, M., & Uchmanowicz, I. (2025). Challenges psoriasis and its impact on quality of life: Challenges in treatment and management. *Psoriasis: Targets and Therapy*, *15*, 175–183. https://doi.org/10.2147/PTT.S519420
24. Salinas, M. P., Sepúlveda, J., Hidalgo, L., Peirano, D., Morel, M., Uribe, P., Rotemberg, V., Briones, J., Mery, D., & Navarrete-Dechent, C. (2024). A systematic review and meta-analysis of artificial intelligence versus clinicians for skin cancer diagnosis. *Npj Digital Medicine*, *7*(1), 125. https://doi.org/10.1038/s41746-024-01103-x
25. Scharschmidt, T. C., Yost, J. M., Truong, S. V., Steinhoff, M., Wang, K. C., & Berger, T. G. (2010). Neurogenic rosacea: A distinct clinical subtype requiring a modified approach to treatment. *Archives of Dermatology*, *147*(1), 123. https://doi.org/10.1001/archdermatol.2010.413
26. Wu, W., Chen, G., Zhang, Z., He, M., Li, H., & Yan, F. (2023). Construction and verification of atopic dermatitis diagnostic model based on pyroptosis related biological markers using machine learning methods. *BMC Medical Genomics*, *16*(1), 138. https://doi.org/10.1186/s12920-023-01552-5
27. Zhang, S., Chang, M., Zheng, L., Wang, C., Zhao, R., Song, S., Hao, J., Zhang, L., Wang, C., & Li, X. (2024). Deep analysis of skin molecular heterogeneities and their significance on the precise treatment of patients with psoriasis. *Frontiers in Immunology*, *15*, 1326502. https://doi.org/10.3389/fimmu.2024.1326502