

Reviews in Dermatology: Current Advances and Future Directions

Emmanouil Karampinis ^{1,2,*} , Efterpi Zafiriou ¹  and Angeliki-Victoria Roussaki-Schulze ¹

¹ Department of Dermatology, Faculty of Medicine, School of Health Sciences, University General Hospital of Larissa, University of Thessaly, 41110 Larissa, Greece; zafevi@o365.uth.gr (E.Z.); roussaki@otenet.gr (A.-V.R.-S.)

² 2nd Department of Dermatology and Venereology, “Attikon” General University Hospital, Medical School, National and Kapodistrian University of Athens, 12462 Athens, Greece

* Correspondence: ekarampinis@uth.gr

1. Introduction

In academic research, reviews serve as a foundational tool for mapping and organizing existing knowledge, evaluating scientific progress in specific domains, and guiding future investigations. Within this landscape, systematic reviews offer a structured methodology for synthesizing evidence around a targeted research question, providing valuable insights for health policies, organizations, clinicians, researchers, and the general public [1]. While this organized approach is always up-to-date, the phrase “systematic reviews” was largely driven by the foundational work of Cochrane and Chalmers [2]. A critical component of this methodology is “meta-analysis”, which is a term to describe the statistical pooling of data from multiple individual studies to integrate their conclusions. The Cochrane Collaboration played an important role in this field by introducing standardized frameworks and criteria [1]. Today, the systemic review ecosystem is supported by advanced quality control infrastructure, including PROSPERO, an international registry for prospective systematic reviews, quality assessment frameworks like GRADE, and specific standards such as the PRISMA guidelines, which guide how review outcomes should be documented [2].

In contrast, a literature review is defined more broadly. Rather than acting as a chapter or a standard research proposal background, a robust literature review serves several critical academic functions. It demonstrates current state-of-the-art knowledge, establishes what is already understood, highlights real-world implications of the research problem, bridges the gap between theory and practice, and provides future directions. Generally, the authors who undergo the process of drafting a literature review have mastered the underlying structure of their discipline and developed mature data analysis of the topic [3]. Additionally, narrative reviews tend to be broader, incorporating a diverse range of study designs to offer a comprehensive summary and critical evaluation of a field [4].

In dermatology, the breadth and variety of cutaneous conditions and their corresponding treatments can be overwhelming for clinicians in search of clear, practical guidance. Dermatology review articles can serve as an essential resource, equipping practitioners with a comprehensive understanding of available diagnostic and therapeutic options and enabling them to individualize their approach to patient care. Given that dermatology exists at the intersection of numerous medical disciplines, well-written reviews play a vital role in closing knowledge gaps and presenting a more integrated perspective on patient management. In this sense, review articles are indispensable tools for navigating the multifaceted challenges that dermatological practice presents.



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2. Special Issue Considerations

This Special Issue published in Dermato (https://www.mdpi.com/journal/dermato/special_issues/2OUO3VG4PH, accessed on 05 June 2026) features seven systematic reviews and twelve narrative literature reviews addressing contemporary dermatological themes and clinical dilemmas encountered in daily practice. The breadth of these publications reflects the diverse spectrum of diseases investigated (Table 1).

Table 1. Key characteristics of the studies published in this Special Issue.

Study	Topic	Design	Population/Focus	Key Findings	Future Directions
Cecere et al. (2026) [5]	JAK inhibitors in difficult atopic dermatitis (AD) areas	Narrative review	AD with head/neck, hands, genital, intertriginous involvement	JAK inhibitors can lead to rapid itch relief and improved control in refractory sites.	Standardized regional outcome measures and biomarker-driven patient stratification can be the future in AD treatment approaches.
Curbelo-Paz et al. (2026) [6]	Gut microbiome and skin disorders	Narrative review	Dermatology patients	Gut–skin–exposome axis strongly influences inflammation.	Holistic, systems-based approach in managing inflammatory skin diseases should be updated.
Lauletta et al. (2026) [7]	Ritlecitinib in alopecia areata	Narrative review	Alopecia areata patients	Ritlecitinib shows consistent effectiveness and acceptable safety in both clinical trials and real-world settings.	Large-scale, prospective, and long-term real-world studies on ritlecitinib on alopecia areata.
Santaniello et al. (2026) [8]	Aging in psoriasis	Literature review	Elderly psoriasis patients	“Inflammatory Noise Floor” hypothesis is introduced. Elderly patients can have delayed early response but eventual “catch-up”.	Future research should prioritize transcriptomic profiling and biomarker validation to confirm “Inflammatory Noise Floor” hypothesis.
Mijaljica et al. (2026) [9]	Skin barrier in aging skin	Narrative review	Elderly patients	Aging contributes to a variety of structural–functional alterations such as barrier dysfunction, dryness, etc.	It is important to integrate regular skincare routines into aged-care settings.
Bai & Mukovozov (2026) [10]	Skin microbiome in Hidranetits Supporativa (HS)	Narrative review	HS patients	Dysbiosis contributes to HS inflammation.	Integration of advanced sequencing technologies with careful clinical phenotyping and treatment stratification will be critical for defining the true contribution of dysbiosis to HS pathogenesis.
Maden (2026) [11]	Rosacea and small intestine bacterial overgrowth/gut microbiota	Narrative review	Rosacea patients	Strong association between gut dysbiosis and rosacea severity.	Longitudinal and interventional studies are needed to promote research advancement and facilitate the development of targeted therapeutic interventions for a rosacea- personalized approach.
Döll-Boscardin et al. (2026) [12]	Metformin applications in Dermatology	Narrative review	Patients with variable dermatologic diseases (acne, photoaging, melasma, etc.)	Metformin has anti-inflammatory, metabolic, and anti-oxidative effects on dermatoses.	More studies on the routine dermatological practice of metformin are needed.

Table 1. Cont.

Study	Topic	Design	Population/Focus	Key Findings	Future Directions
Zavaleta-Monestel et al. (2026) [13]	AGEP (Acute generalised exanthematous pustulosis)	Narrative review	Drug-triggered AGEP cases	AGEP has distinct clinical features, immunological pathways, pharmacovigilance signals, and diagnostic tool assessments.	Incorporating immunogenomic analyses can create new AGEP diagnostic tools.
Xavier-Souza et al. (2025) [14]	Skin microbioma & diagnostics/therapeutics	Narrative review	Dermatology patients	Distinct microbial profiles have been identified as correlating with specific skin conditions.	Future investigations should prioritize longitudinal and intervention-based studies to clarify causal associations and assess the therapeutic potential of microbiome-targeted interventions. Furthermore, establishing standardized protocols for microbiome sample collection, sequencing, and data analysis is crucial for facilitating its broader implementation in clinical practice.
Sadur et al. (2025) [15]	Sleep–skin axis	Narrative review	Inflammatory dermatoses patients	Circadian disruption worsens inflammatory skin disease. Treatments such as melatonin and L-theanine supplementations can be considered beneficial in controlling systemic inflammation.	More research on incorporating sleep-focused interventions into traditional dermatological treatments is essential.
Aksoy et al. (2024) [16]	AI in dermatology imaging	Technology review	Dermoscopy/Reflectance Confocal microscopy (RCM)-based diagnostics	AI improves diagnostic accuracy and efficiency.	Apart from diagnostics, AI-RCM integration should be applied for progression, treatment responses, and tailored personalized patient management strategies.
Moltó-Balado et al. (2026) [17]	Biotin for hair growth	Systematic review	Alopecia patients	Studies showed mixed findings on biotin deficiency in hair loss populations, whereas controlled studies in telogen effluvium found no significant differences in serum biotin versus controls.	Better-quality studies on the role of biotin in hair loss patients.
Quagliotto et al. (2026) [18]	Narrowband UVB (nb-UVB) therapy vs. Psoralen + UVA (PUVA) or Psoralen + UVB treatments in individuals with vitiligo.	Systematic review	Vitiligo patients	Nb-UVB, either alone or combined with psoralen, produced better repigmentation outcomes compared to PUVA.	The standardization of evaluation methods is essential to improve comparability between different studies and protocols.

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Study	Topic	Design	Population/Focus	Key Findings	Future Directions
Alshehri et al. (2026) [19]	Merkel cell carcinoma (MCC) in situ	Systematic review	In situ and recipient MCC cases	MCC early subtypes can be rare, but contrary to MCC, have good prognosis. Local surgical excision is usually curative.	Better knowledge for dermatopathologists and dermatologists on those MCC subtype characteristics is essential.
Gambichler et al. (2025) [20]	Melanoma of unknown primary vs. melanoma of known primary survival	Meta-analysis	Metastatic melanoma and melanoma patients	Both melanoma patients demonstrated similar survival under modern therapies.	Prospective studies with standardized and consistent reporting are required to confirm these findings and better define the factors that affect treatment outcomes in melanoma patients.
Teodoro et al. (2025) [21]	Excimer vs. nb-UVB vitiligo	Systematic review	Vitiligo patients	Targeted excimer therapies are more effective for localized disease compared to NB-UVB.	The standardization of evaluation methods is essential to improve comparability between different studies and protocols.
Costa et al. (2024) [22]	NB-UVB effectiveness in vitiligo	Systematic review	Vitiligo patients	Narrowband UVB (NB-UVB) phototherapy is associated with substantial repigmentation in patients with vitiligo and generally has a favorable safety profile, with fewer adverse effects than many alternative treatment options.	The standardization of evaluation methods is essential to improve comparability between different studies and protocols.
Conte et al. (2024) [23]	Genital lichen sclerosis (LS) therapy approach	Systematic review	Genital LS patients—majority were women	Topical steroids remain gold-standard. Steroid-sparing agents and/or procedural adjuncts have been demonstrated to have a beneficial role.	Specific guidelines for steroid-sparing agents in LS are needed.

2.1. Challenging Patients: Refractory Disease and Hard-to-Treat Populations

Managing psoriasis in the expanding geriatric population (over 65 years) introduces distinct therapeutic timelines and safety considerations. Real-world data analyzed in this review reveal that while elderly patients achieve therapeutic parity with younger cohorts by week 52, their initial response to IL-17 and IL-23 inhibitors is characteristically delayed. This slower onset of action is accompanied by lower early-stage PASI90 scores and elevated rates of discontinuation driven by adverse events. To explain this temporal lag, the authors introduce a novel, theoretical framework termed the “Inflammatory Noise Floor” hypothesis. This model integrates real-world clinical data with emerging mechanistic concepts of cellular aging, cellular senescence, and immunosenescence. Concurrently, age-related immune changes—marked by the accumulation of exhausted {CD8} T-cells and compromised regulatory T-cell function—prevent the skin’s adaptive immune system from re-equilibrating efficiently [8].

In Cecere and Lauletta’s review, the authors focused on another challenging patient subtype, atopic dermatitis patients with lesions on demanding anatomical sites. The critical methodological limitation identified across the current literature is the highly

inconsistent definition of “difficult-to-treat” anatomical zones in atopic dermatitis patients. Most evaluated cohorts fail to utilize standardized regional scoring systems, and the underlying pathophysiological mechanisms driving region-specific therapeutic resistance remain poorly elucidated.

Despite these limitations, the real-world evidence of that review, synthesized herein, demonstrates that JAK inhibitors, specifically abrocitinib, baricitinib, and upadacitinib, deliver substantial clinical efficacy within anatomically challenging and sensitive areas, such as the head, neck, hands, genitalia, and intertriginous regions. In addition to reducing objective clinical severity indices, these agents provide rapid, sustained relief from pruritus. This prompt antipruritic effect serves as a critical therapeutic milestone, disrupting the chronic itch–scratch cycle and facilitating epithelial barrier restoration in highly vulnerable tissues. While heterogeneous study designs and disparate regional endpoints preclude direct head-to-head comparisons between individual JAK inhibitors, the compiled data validate their utility as high-value interventions for region-dominant or biologic-refractory phenotypes. Their capacity for broad-spectrum cytokine modulation appears uniquely suited to address the complex, overlapping inflammatory pathways and environmental triggers characteristic of these distinct anatomical sites [5].

2.2. Microbiome Considerations: From Dysbiosis to Therapeutic Target

Four reviews in this collection converge on a shared biological premise, that the disruption of microbial ecology at the skin surface or in the gut is not only a secondary finding in inflammatory dermatoses but a meaningful contributor to their pathogenesis, creating the gut–skin–exposome axis.

The intricate relationship between the gut microbiome, cutaneous physiology, and environmental influences—conceptually unified as the gut–skin–exposome axis—represents a promising frontier in the pathogenesis and management of inflammatory dermatoses [24]. As emerging data continue to show that intestinal microbial imbalances promote systemic and cutaneous inflammation, and conversely, how cutaneous and environmental factors reciprocally modulate gut microbial architecture, the necessity for a transition toward an integrated, systems-based dermatological model becomes indisputable. While the paradigm of the exposome has already been widely investigated across prominent conditions such as psoriasis, atopic dermatitis, acne, and systemic lupus erythematosus (SLE), the review of Curbelo-Paz et al. expands on those frameworks. Specifically, it explores the precise molecular mechanisms bridging gut dysbiosis and these common inflammatory phenotypes while providing actionable clinical pearls designed to help dermatologists effectively navigate this complex interplay in daily practice [6].

In the review of Bai et al., the skin microbiome in *Hidranitits suppurativa* (HS) was examined. HS is associated with a distinct alteration in the skin microbiome. HS lesions harbor polymicrobial burden enriched in staphylococci and anaerobic bacteria, accompanied by loss of microbial diversity and depletion of beneficial commensal. This dysbiotic state is not simply incidental but likely contributes to sustained inflammation and helps explain the partial efficacy of antimicrobial therapies. However, whether microbial alterations serve primarily as a cause, a consequence, or an amplifier of HS remains incompletely resolved [10].

The review of Maden was about small intestine bacterial overgrowth and microbiome in rosacea. The current review suggests that alterations in the gut microbiome are intrinsically linked to the cutaneous inflammatory cascades observed in patients with rosacea. Building upon this, emerging evidence points toward a significant association between heightened intestinal dysbiosis and the severity of systemic and dermatological inflammation. Given this profound gastrointestinal–cutaneous interplay, targeted interventions

such as rifaximin therapy and probiotic supplementation have been proposed to restore a homeostatic microbial architecture within the gut. Therefore, these microbial modulation strategies offer a promising therapeutic avenue [11].

Lastly, the literature review of Souza increasingly highlights a growing interest in actively modulating the cutaneous microbiome via the topical delivery of bioactive ingredients. Incorporating prebiotics, probiotics, and postbiotics into advanced dermo-cosmetic vehicles represents an innovative approach to reinforcing skin homeostasis. Within this therapeutic ecosystem, postbiotics have emerged as highly valuable candidates for topical dermatological formulations. Their rising prominence is driven by their exceptional chemical stability, pristine local safety profile, and direct immunomodulatory properties, which overcome the viability and storage challenges traditionally associated with live probiotic cultures [14].

2.3. Vitiligo Phototherapy Revisited: Precision over Tradition

Three systematic reviews dedicated to vitiligo repigmentation make a collective argument for phototherapy not as a monolithic treatment category but as a spectrum of modalities with meaningfully distinct efficacy profiles. Modern vitiligo management spans a range from topical immunosuppression and surgical grafting to advanced light-based therapies. Three systematic reviews in this issue [18,21,22] critically evaluate the comparative efficacy of these phototherapeutic pipelines. Data aggregated from randomized controlled trials confirm that Narrowband UVB (NB-UVB), administered either as a monotherapy or synergistically combined with psoralen (NB-UVB), achieved vastly superior repigmentation, accelerated clinical response times, and enhanced cosmetic color matching compared to traditional Psoralen plus UVA (PUVA) regimens. This combination proved especially capable of improving Vitiligo Area Scoring Index (VASI) scores, even within anatomical regions typically deprived of natural sunlight exposure. Concurrently, a second and third systematic review addresses clinical ambiguity surrounding localized, newer-generation devices. The findings demonstrate that the 308 nm monochromatic excimer lamp outperforms conventional full-body NB-UVB in localized repigmentation while delivering therapeutic efficacy comparable to the high-cost 308 nm excimer laser. While the excimer lamp maintains an excellent, minimal-adverse-effect safety profile, the authors note that heterogeneous treatment protocols across the literature require clinicians to interpret these comparative outcomes with cautious optimism.

2.4. Medications in Dermatology and Drug Reactions

2.4.1. Jak Inhibitors in Alopecia Areata

Alopecia areata (AA) is a complex, immune-mediated, non-scarring form of hair loss affecting the scalp, eyebrows, eyelashes, and body hair, for which ritlecitinib—an oral kinase inhibitor that selectively targets Janus kinase 3 (JAK3) and the TEC kinase family—has emerged as a promising therapeutic option. While the efficacy and safety of ritlecitinib in adolescents and adults with moderate-to-severe AA have been robustly established through the ALLEGRO clinical trial program, comprising phase 2b/3 randomized controlled trials (RCTs) and long-term extension studies, conclusions derived strictly from controlled environments may not fully mirror outcomes in routine clinical practice [25].

Addressing this real-world gap, the literature review of Lauletta et al., based on 14 studies, indicated that ritlecitinib is both effective and well-tolerated in broader patient demographics, including adolescents and younger pediatric cohorts, with multiple reports documenting substantial hair regrowth and favorable safety profiles. Real-world studies reported clinically meaningful hair regrowth across diverse populations, including response rates increased over time, with a proportion of patients achieving SALT $\leq$ 20

or $\geq 80\%$ improvement. From a safety standpoint, ritlecitinib demonstrates a consistently favorable tolerability profile across both clinical trials and real-world applications; the majority of reported adverse events are mild to moderate in severity, typically presenting as acne, folliculitis, upper respiratory tract infections, headaches, or transient laboratory abnormalities [7].

2.4.2. Lichen Sclerosus Treatment

The systematic review of Conte et al., evaluating 31 randomized controlled trials (RCTs) across 1507 patients, confirmed that while high-potency topical corticosteroids remain the gold standard for LS, emerging modalities offer superior or valuable adjunctive efficacy. Topical steroids outperformed topical calcineurin inhibitors, hormonal therapies, vitamin E oil, and emollients. Notably, CO₂ and Nd:YAG laser therapies, as well as the intradermal injection of polydeoxyribonucleotide combined with steroids, demonstrated greater efficacy than corticosteroid monotherapy. Other successful interventions included platelet-rich plasma (PRP), acitretin, human fibroblast lysate cream, silk undergarments, and surgery. Although the Cochrane risk-of-bias tool revealed limitations such as moderate-to-high bias risks and protocol heterogeneity, the findings underscore that while steroids are highly effective, procedural adjuncts and steroid-sparing agents provide definitive clinical benefits [23].

Both the systematic review on genital LS and the recently published German S3 guideline (DDG/DGGG, EuroGuiDerm-based) are fully aligned in recognizing ultrapotent or potent topical corticosteroids combined with emollients as the first-line standard of care for genital LS across all ages and sexes, emphasizing their central role in symptom control and disease stabilization. They also agree that topical calcineurin inhibitors represent a valid second-line option, particularly in patients who do not adequately respond to or cannot tolerate corticosteroids, although their use is generally reserved for refractory cases. In addition, both sources support the use of phototherapy as a therapeutic option for extragenital LS, acknowledging its potential benefit while recognizing that evidence is less robust compared with topical corticosteroids and therefore positioning it as an adjunct rather than a primary treatments [26].

2.4.3. Topical Metformin for Dermatology Conditions

The pharmacological scope of metformin, traditionally utilized as a cornerstone biguanide therapy for type 2 diabetes, is rapidly expanding into innovative dermatological applications. At the molecular level, metformin operates by activating adenosine monophosphate-activated protein kinase (AMPK), a master regulator of cellular energy homeostasis. This activation triggers a cascade of downstream anti-inflammatory, antioxidant, and lipid-modulating effects.

Emerging preclinical and early clinical evidence gathered in this issue demonstrates that topical metformin acts directly on essential cutaneous pathways. Its therapeutic footprint spans a diverse array of dermatological conditions, showing promise in mitigating melasma (via the inhibition of melanogenesis), slowing photoaging, accelerating wound healing, and downregulating the immune-metabolic pathways involved in psoriasis, acne, and hair loss. A comparative synthesis of the literature reveals a wide variety of topical metformin formulations engineered for these specific skin conditions. While its systemic safety profile is globally recognized, its topical application boasts excellent localized tolerability. Reported side effects are mild and self-limiting, consisting primarily of transient erythema, pruritus, or localized irritation [12].

2.4.4. Drug Reactions

The review of Monestel et al. focuses on acute generalized exanthematous pustulosis (AGEP), which is a severe, drug-precipitated skin reaction. Driven by a T-cell-mediated type IVd hypersensitivity response, it is clinically identified by a sudden eruption of sterile pustules, fever, and neutrophilia. While traditional beta-lactam antibiotics are still the primary responsible medications, newer triggers frequently include hydroxychloroquine, psychotropic medications, vaccines, and advanced oncology treatments like targeted therapies and immune checkpoint inhibitors. At the molecular level, its immunopathogenesis mirrors pustular psoriasis due to a shared reliance on IL-36 pathway activation, CXCL8/IL-8-driven neutrophil recruitment, and occasional IL36RN mutations. Ultimately, confirming an AGEP diagnosis requires a multi-faceted approach—combining drug latency periods, tissue morphology, histopathology, and biomolecular markers with standardized evaluation tools like the EuroSCAR scoring system [13].

2.5. Skin Cancer and AI Diagnostics

Within the domain of cutaneous oncology and diagnostics, this Special Issue contains three studies: one focusing on Merkel cell carcinoma (MCC) subtypes and one on melanoma subtypes' overall survival prognosis, as well as one on AI diagnostics.

Because MCC lacks defining clinical features and frequently mimics benign lesions, diagnosis relies strictly on a constellation of immunohistochemical markers. One review evaluates “incipient MCC”, which is a descriptive category identifying in situ MCC alongside early, focal dermal microinvasion. As a rare, aggressive neuroendocrine malignancy, in situ MCC subtypes predominantly target the face, neck, and upper limbs of elderly male patients, relying heavily on specific immunohistological profiles for accurate diagnosis. Crucially, localized surgical excision of these incipient lesions is curative, yielding an excellent clinical prognosis [19].

Melanoma of Unknown Primary describes a scenario where metastatic disease is detected in the lymph nodes or visceral organs without an identifiable cutaneous or mucosal origin site, whereas Melanoma of Known Primary represents the standard clinical presentation originating from a visible, documented primary skin lesion. In the melanoma study, based on nine studies, Gambichler et al. aimed to compare the overall survival outcomes of patients with Melanoma Unknown Primary and Melanoma Known Primary under novel therapies. The results suggest that patients in the first category exhibited a comparable prognosis to those in the second category. The pooled data showed that patients exhibited comparable outcome survival when treated with these therapies. This is consistent with previous studies suggesting that patients with primary melanoma tend to have a relatively favorable prognosis, particularly when matched for stage and metastatic burden [20]. Additionally, a comparative study that followed one year after publication confirmed the overall survival findings and added that the oncogenic pattern of melanoma of unknown origin showed an ultraviolet mutation signature, suggesting an origin in sun-exposed areas [27].

The intersection of advanced artificial intelligence (AI) and high-resolution non-invasive imaging is driving a transformative shift toward precise, data-driven skin cancer diagnostics and dermatology [28]. Reflectance Confocal Microscopy (RCM) has established itself as an invaluable asset in modern dermatology, delivering highly detailed, non-invasive visualization of skin tissue at a cellular resolution. However, the traditional workflow relies on manual RCM image analysis, which is inherently time-consuming and prone to inter-observer variability [16].

The review of Aksoy et al. highlights how incorporating machine learning (ML) and deep learning (DL) architectures, particularly Convolutional Neural Networks (CNNs), can revolutionize this workflow. By automating the extraction, identification, and classifi-

cation of complex cellular patterns, AI enhances both diagnostic accuracy and operational efficiency. The clinical inputs feeding these AI diagnostic systems are of paramount importance in modern dermatology, directly shaping the precision of the output. This automated synergy not only ensures greater diagnostic consistency across clinical settings but also significantly alleviates the cognitive burden and diagnostic strain placed on healthcare professionals, ultimately facilitating superior patient stratification and highly tailored treatment strategies [16].

2.6. Lifestyle and Supplementation

This part includes vitamin deficiency correction, sleep improvement and skin quality focus. Recognizing that optimal dermatological outcomes extend beyond prescription pharmacology, a dedicated part of this Special Issue includes vitamin deficiency correction, sleep improvement, and a strict focus on skin quality. Through this holistic lens, the aggregated reviews explore how correcting systemic nutritional gaps, protecting the skin's independent circadian rhythms, and utilizing evidence-based barrier care collectively reinforce tissue resilience [29].

Aging causes structural and functional decline of the skin barrier, which represents a critical clinical challenge. Over time, this progressive deterioration leaves the cutaneous barrier highly vulnerable, manifesting as severe dryness, heightened sensitivity, and an elevated susceptibility to mechanical trauma and infections. Within the geriatric population, this vulnerability is characterized by an array of well-documented structural and functional alterations. Aging skin undergoes significant thinning alongside a marked reduction in natural moisturizing factors and essential lipid content. This depletion accelerates transepidermal water loss, shifts the skin surface pH, and disrupts microbiome diversity. Collectively, these changes yield fragile, xerotic, and pruritic tissue with a severely diminished capacity for self-repair and wound healing [30]. To mitigate these risks, the authors suggest proactive, early identification of barrier compromise to allow for timely preventive care. Utilizing an evidence-based approach to skincare—specifically through the deployment of targeted cleansing, intensive moisturization, and topically applied barrier protectants—clinicians can structurally reinforce aging skin. This strategic dermatological care significantly reduces the incidence of prevalent geriatric complications, including skin tears, bruising, lower-leg ulcers, pressure injuries, and moisture-associated skin damage [9].

Apart from AA and Jak inhibitor use, this Special Issue also included a review on vitamin status of hair loss patients and specifically biotin (vitamin B7). Although its clinical utility in treating alopecia remains unproven, biotin is widely marketed as an over-the-counter dietary supplement for hair, skin, and nail vitality. The review of Moltó-Balado et al., which included 10 studies, concluded that the available evidence does not support routine biotin supplementation for alopecia in the absence of deficiency. It may be considered in scenarios of proven risk/deficiency, as part of a comprehensive assessment. Given that vitamins and minerals are essential for normal hair follicle development and proper immune cell regulation, correcting documented micronutrient deficiencies serves as a valuable adjunctive strategy alongside primary, alopecia-specific therapies [17].

In addition to lifestyle considerations, sleep quality has emerged as a crucial clinical parameter that must be integrated into the holistic management of patients with inflammatory dermatoses. As synthesized in this Special Issue's dedicated review of Sadur et al., sleep deprivation profoundly compromises skin regeneration by disrupting essential nocturnal physiological pathways, including collagen synthesis, cellular repair kinetics, growth factor secretion, keratinocyte proliferation, wound healing, and epithelial permeability. Restricting sleep by even 25% to 50% of the standard 8 h baseline triggers a significant upregulation of circulating pro-inflammatory biomarkers—most notably interleukin-6

(IL6) and tumor necrosis factor-alpha (TNF α)—thereby disrupting systemic immunological equilibrium and exacerbating inflammatory skin conditions. To counteract this pathogenic cascade, the review highlights promising sleep-targeted therapeutic interventions, such as exogenous melatonin supplementation and L-theanine, as viable adjunctive modalities to improve clinical outcomes in this patient population [15].

3. Conclusions

The reviews assembled in this Special Issue collectively illustrate the remarkable transformation currently underway in dermatology. While traditionally viewed as a specialty centered on the diagnosis and treatment of skin diseases, dermatology is increasingly evolving into a discipline that integrates immunology, microbiology, digital technologies, translational science, and personalized medicine. The breadth of topics covered, from JAK inhibitors and biologic therapies to microbiome research, artificial intelligence, skin aging, and evidence-based management of rare disorders, reflects both the complexity and dynamism of modern dermatologic practice.

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