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DIAGNOSTIC DIFFICULTIES AND CURRENT MANAGEMENT STRATEGIES IN VULVAR DERMATOSES: A LITERATURE REVIEW

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ABSTRACT

Chronic vulvar dermatoses represent a heterogeneous group of inflammatory conditions that often present with overlapping and nonspecific clinical features, making accurate diagnosis and management challenging. Disorders such as vulvar psoriasis, lichen simplex chronicus, lichen planus, and allergic contact dermatitis frequently manifest with pruritus, erythema, and lichenification, leading to delayed recognition and misdiagnosis. Histopathological examination remains an important diagnostic tool, particularly in atypical or treatment-resistant cases. Despite increasing interest in vulvar dermatoses, their etiology and pathophysiology remain incompletely understood. Evidence-based diagnostic and therapeutic guidelines are limited. While numerous studies have addressed psoriasis in general, data specifically focusing on anogenital involvement and its treatment remain limited. Emerging topical and systemic therapies offer new treatment possibilities; however, comparative studies evaluating their efficacy in vulvar diseases are lacking. Management should be individualized and multidisciplinary, with particular attention to symptom control, quality of life and sexual well-being. Further clinical research is essential to optimize the diagnostic strategies and therapeutic algorithms for vulvar dermatoses.

KEYWORDS

Vulvar Dermatoses; Chronic Vulvar Disorders; Diagnosis And Treatment; Lichen Sclerosus; Contact Dermatitis; Vulvar Psoriasis

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Introduction

Vulvar dermatoses remain an important yet insufficiently recognized clinical problem at the interface of gynecology and dermatology. Skin lesions affecting the vulvar area are among the most common reasons women seek care in gynecological, dermatological, and venereological outpatient clinics. However, the true prevalence of these conditions remains underestimated, partly due to patients' embarrassment, low awareness of symptoms, non-specific symptoms and frequent misdiagnoses.

Many cases of vulvar dermatoses remain undiagnosed for a prolonged period, which may lead to disease progression, scarring, anatomical changes and sexual dysfunctions. Chronic disorders of the vulvar region are associated with substantial deterioration in quality of life, sexual functioning, and psychological well-being, particularly among premenopausal women. Commonly reported symptoms include dyspareunia, chronic pruritus, pain, burning sensation, and decreased libido. In a study conducted in Nepal, it was shown that the most commonly reported symptom among patients suffering from vulvar dermatoses was pruritus. It was also noted that, due to embarrassment, many patients avoid seeking medical advice, which often results in self-medication with over-the-counter drugs [1]. The characteristics of pruritus may provide important clues regarding its underlying etiology. Acute, sudden-onset pruritus may suggest an infectious cause, whereas chronic pruritus is more commonly associated with long-standing conditions, such as lichen simplex chronicus [2]. In addition, chronic vulvar inflammation present in vulvar dermatoses is associated with an increased risk of vulvar squamous cell carcinoma, which underscores the importance of appropriate and thorough diagnostic evaluation of these conditions.

In recent years (2022–2025), there has been a marked increase in interest in vulvar dermatoses, particularly lichen sclerosus, resulting in new interventional studies, protocols for randomized clinical trials, and updated management guidelines for vulvar dermatoses. Research on novel immunomodulatory drugs, regenerative therapies such as laser therapy and systemic treatments for refractory cases has rapidly expanded in recent years. New studies aim to understand the etiology and pathophysiology of these conditions more

precisely. Increasing evidence points to the role of vulvar microbiome disturbances, autoimmune mechanisms, and epidermal barrier dysfunction in the pathogenesis of these diseases.

In the daily practice of gynecologist and dermatologist, the diagnosis of vulvar dermatoses remains a clinical challenge due to the non-specific appearance of skin lesions and the coexistence of infections, contact allergies, and atrophic changes related to menopause. Sometimes, especially in difficult cases, collaboration between dermatologists and gynecologists is crucial.

In relation to rapid development of knowledge and continually evolving changes in diagnostic and therapeutic approaches, a comprehensive review of vulvar dermatoses incorporating current scientific data is warranted. This paper aims to present the current state of knowledge on the most important vulvar dermatoses, including their etiology, pathogenesis, clinical presentation and, in particular, diagnostic methods and modern treatment strategies published in recent ten years.

Materials and Methods

This study presents a review of the literature on vulvar dermatoses, with particular emphasis on current data related to diagnostics and treatment strategies. The literature search was conducted using the PubMed and Google Scholar databases. This provided access to full-text articles. Only free full-text publications were included in this analysis.

The review covered studies published between 2015 and 2025, including review articles, clinical studies, guidelines and case reports, addressing non-microbiological vulvar dermatoses. This review focuses on diseases such as lichen sclerosus, lichen planus, vulvar psoriasis, lichen simplex chronicus, and contact and atopic dermatitis.

Publications focused exclusively on dermatoses of microbiological etiology, articles fully devoted to the pediatric population and those limited to male patients were excluded from the analysis.

Lichen Sclerosus

Lichen sclerosus is a chronic inflammatory skin disorder. Etiology and pathogenesis of this disease remain incompletely understood. It has been suggested that risk factors for the disease include genetic predisposition, recurrent trauma to the urogenital area, hormonal changes and the use of certain medications. A prospective case-control study investigating the composition of the anogenital microbiome in patients with lichen sclerosus demonstrated changed microbiological profile compared to that of healthy women. In samples collected from the patients, the study authors observed a reduced number of bacteria from the genera Lactobacillus, Finegoldia, Lawsonella, Staphylococcus, Cutibacterium and unidentified genus from the family Actinomycetaceae. In contrast, the increased number of bacteria from the genera Ezakiella and Porphyromonas was noted [3]. These findings suggest a potential role for microbiome dysbiosis in the pathogenesis of this disease. In a study evaluating the association between vulvar lichen sclerosus and autoimmune diseases, the frequent coexistence of thyroid disease, the presence of parietal cell antibodies and vitamin B12 deficiency was demonstrated. The authors suggested that basic screening tests for autoimmune disorders may be warranted in patients with VLS [4].

Lichen sclerosus is characterized by the development of porcelain-white, indurated patches, most commonly located in the genital and perianal regions. The affected skin is fragile and prone to fissures. Pathological changes lead to loss of elasticity and tissue atrophy [5]. If the disease is advanced, it may lead to the formation of adhesions and anatomical distortion of the vulva. Patients with lichen sclerosus experience intense pruritus, burning sensation and pain. Dyspareunia is frequently reported.

The highest incidence of lichen sclerosus occurs in two periods: the prepubertal and postmenopausal [6]. This disease is associated with an increased risk of vulvar squamous cell carcinoma; therefore, early diagnosis and appropriate treatment are essential.

Diagnostics

The characteristic clinical presentation of lichen sclerosus usually allows an experienced clinician to establish a diagnosis without the need for additional investigations. Typical anogenital skin lesions accompanied by intense pruritus are the classic disease presentation. Dermoscopy remains a useful tool in the diagnostic process. Characteristic features of lichen sclerosus observed during examination include whitish or white-yellowish patches on an atrophic skin background, reduced vascular density andthe presence of irregular linear or dotted vessels [6]. In cases where the clinical picture is ambiguous, histopathological examination of a skin biopsy is recommended to confirm the diagnosis. Biopsy should be performed before initiating treatment with topical corticosteroids. If therapy has already been started before the biopsy, a treatment-free interval of

at least four weeks should be observed prior to the biopsy. Some authors have recommended routine biopsies to confirm the clinical diagnosis [7].

If the clinical findings and histopathological results are discordant, re-evaluation of the patient is indicated, including the consideration of obtaining an additional biopsy specimen to verify the diagnosis [7].

According to the study on the co-occurrence of vulvar lichen sclerosus with certain autoimmune diseases, it is advisable to measure parameters such as TSH, intrinsic factor and parietal cell antibodies, and vitamin B12 [4]. On the co-occurrence of vulvar lichen sclerosus with certain autoimmune diseases, it is advisable to measure parameters such as TSH, intrinsic factor and parietal cell antibodies, and vitamin B12 [4].

Treatment

Currently treatment of lichen sclerosus is primarily based on the use of topical pharmacotherapy. First-line treatment consists of topical corticosteroids, which have well-documented efficacy in controlling disease symptoms, alleviating inflammation, and preventing the progression of skin lesions. The main goals of steroid therapy are to reduce pruritus, pain, and burning sensations, as well as to protect against the development of scarring.

Current guidelines, including those of ACOG and the British Association of Dermatologists, recommend the use of medium- or high-potency corticosteroids (e.g., clobetasol propionate, mometasone furoate) as first-line treatment for lichen sclerosus [8, 9]. The duration of therapy and the dosing regimen require further investigation. Regular follow-up of patients during treatment is recommended to evaluate therapeutic efficacy. Follow-up visits also allow for the early detection of atypical or suspicious lesions that may require a biopsy. In addition to standard management, an increasing number of publications have addressed novel therapies that may serve as adjuncts to basic treatment or as alternative options.

In the most recent narrative review on lichen sclerosus, it was emphasized that topical calcineurin inhibitors, tacrolimus and pimecrolimus, may represent a therapeutic option as a second-line treatment in patients who do not respond to standard corticosteroid therapy or who do not tolerate steroids. However, their clinical efficacy appears to be slightly lower than that of corticosteroids and requires further study [6].

Another emerging approach is laser therapy for treating vulvar lichen sclerosus. Existing studies indicate that its use reduces symptoms and improves histological outcomes as well as patients' quality of life. The results also show that it is safe and well tolerated. However, according to the available scientific evidence, laser therapy should not be used as first-line monotherapy, but rather in combination with topical corticosteroid treatment [10]. In a retrospective study evaluating fractional CO_2 laser therapy as a second-line treatment in patients with lichen sclerosus resistant to first-line therapy, improvements in clinical symptoms and anatomical changes compared with baseline values were observed. After a series of treatments, symptoms such as vulvar pain and dryness were reduced, while patients' quality of life improved. The procedures were well tolerated, and no serious adverse effects were reported [11]. Moreover, one study suggested that postmenopausal women were more satisfied with laser treatment outcomes than premenopausal women, both in terms of subjective symptom improvement and overall satisfaction with the therapy. These results may be related to differences in disease burden perception and treatment expectations between the age groups [12].

Platelet-rich plasma (PRP) has been attracting increasing interest in various fields of medicine, including as a potential treatment for lichen sclerosus, particularly in cases resistant to standard therapeutic approaches. Available reports, including case reports [13] and small clinical series [14], suggest possible improvements in quality of life and subjective reduction of symptom severity attributed to the regenerative properties of PRP. However, current studies have not provided clear and objective evidence confirming the efficacy of this therapy. Therefore, additional randomized trials are necessary to accurately evaluate the effectiveness of this therapy.

The literature also includes reports of individual clinical cases using high-intensity focused ultrasound (HIFU) as an innovative treatment modality for vulvar lichen sclerosus in patients with disease resistant to standard therapies. In the described case of a postmenopausal woman, the use of HIFU led to gradual regression of skin lesions, improvement in skin appearance, and alleviation of symptoms such as discomfort, pain, and pruritus. Although the results of this case are promising and suggest that HIFU may be a potential alternative for patients unresponsive to topical steroid therapy, the evidence is currently limited to isolated case reports and requires confirmation in larger, controlled studies [15].

Another therapeutic method under investigation for the treatment of vulvar lichen sclerosus is lipotransfer using autologous adipose tissue, sometimes enriched with stem cells. Available reports, including small patient cohorts and retrospective analyses, indicate potential improvements in the clinical appearance of lesions, reduction of fibrosis and inflammation, alleviation of subjective symptoms, and improvement in

quality of life [16]. One case report described a 42-year-old patient suffering from ulceration and hyperkeratosis in the course of lichen sclerosus, who did not respond to standard treatment. In this case, a nanofat graft was applied - an alternative method involving the preparation of nanofat from the patient's own adipose tissue, containing a high concentration of regenerative cells and growth factors. The graft was administered to the vulvar and perianal areas, as well as to the ulcerated lesion. At the one-year follow-up, significant improvement was observed, with complete healing of the ulcer. The remaining skin changes were largely asymptomatic, with only occasional pruritus reported [17]. Owing to the limited number of studies and the lack of randomized controlled trials, the efficacy and safety of this method require further confirmation in studies with higher methodological quality.

Both systemic treatment and surgical interventions for lichen sclerosus are reserved for severe, extensive, or treatment-resistant cases. Systemic therapy, reserved for severe and refractory disease, includes the use of pulsed high-dose corticosteroids in combination with low-dose methotrexate and systemic retinoids. Surgical intervention should be considered only when symptoms persist despite appropriate conservative treatment [6].

Lichen Planus

Lichen planus (LP) is a chronic inflammatory disease of the skin and mucous membranes with an incompletely understood etiology. The disease may affect the skin, hair, nails, and mucous membranes, with one of the more common forms being mucosal lichen planus, which involves the oral cavity and genital organs. In women, vulvar and vaginal involvement often coexist with the oral form and typically follows a chronic and relapsing course. Vulvar lichen planus presents in three main clinical variants: classic, hypertrophic, and erosive.

The disease presents with painful or pruritic erosions, sometimes accompanied by lacy whitish lesions, and in the long term may lead to the development of atrophic or hyperkeratotic changes [18]. The most common genital form in women is the erosive variant, which primarily affects the labia minora, clitoris [5] and vaginal introitus. The chronic course of this form may result in scarring and anatomical complications, such as vaginal stenosis or adhesions [19]. These changes are accompanied by pain, pruritus, as well as urinary and sexual dysfunction.

An increasing body of evidence indicates an immunological basis for lichen planus related to T-lymphocyte activation, and the disease is often associated with other autoimmune disorders. One proposed pathogenesis theory of lichen planus involves the participation of memory T lymphocytes that are initially activated in response to viral infections and may exhibit cross-reactivity with other antigens, such as medications or contact allergens. This mechanism may lead to epidermal damage and provides a possible explanation for the observed association between exogenous factors, including viral infections and drug exposure, and the development of lichen planus [20].

Diagnostics

The correct diagnosis of anogenital lichen planus is most often based on clinical presentation. In a review by Simonetta et al., a set of clinical and histopathological criteria was proposed to facilitate the diagnosis of erosive vulvar lichen planus. These criteria include the presence of painful, well-demarcated erosions within the vaginal introitus, features of chronic inflammation accompanied by scarring, and characteristic histopathological findings such as damage to the basal layer and band-like lymphocytic infiltrate. The authors also emphasized the importance of subjective symptoms and the coexistence of lesions at other mucosal locations in the diagnostic process [18]. However, one case report describes a 56-year-old patient who presented with pruritus, vulvar erythema, and vaginal discharge. These symptoms had been recurring on and off for approximately 10 years, without other clinical features typical of lichen planus. Further diagnostic evaluation revealed concomitant candidiasis, as well as a diagnosis of lichen planus. This case highlights that any suspicious or atypical lesion should undergo thorough diagnostic evaluation, regardless of the presence or absence of characteristic subjective symptoms, due to the significant consequences of untreated lichen planus [19].

According to the recommendations of the American College of Obstetricians and Gynecologists, classic vulvar lichen planus is characterized by whitish, reticular lesions known as Wickham striae, whereas the hypertrophic form presents with thick hyperkeratotic lesions. In erosive lichen planus, painful erythematous erosions involving the vaginal introitus and labia minora are observed; in a chronic course, these may lead to scarring, adhesions, narrowing, or even complete obliteration of the vaginal lumen [8].

Due to the frequent coexistence of oral lesions, evaluation of the oral mucosa is also recommended in patients with erosive lichen planus, with dental or periodontal consultation as necessary. The differential

diagnosis should include other autoimmune blistering dermatoses, such as mucous membrane pemphigoid, bullous pemphigoid, and pemphigus vulgaris.

In cases where the clinical presentation does not allow for a definitive diagnosis or when differentiation from other blistering diseases is required, histopathological examination of a biopsy specimen from the affected mucosa is indicated. In selected diagnostic situations, direct immunofluorescence testing may be helpful [8].

Treatment

The cornerstone of treatment for vulvar lichen planus is the use of high-potency topical corticosteroids, which effectively relieve pruritus, pain, and burning sensations and inhibit the progression of the disease. In clinical practice, monotherapy with steroids is rarely sufficient, particularly in cases of the erosive form of the disease [18].

In patients who do not respond to standard topical therapy, calcineurin inhibitors, such as tacrolimus and pimecrolimus, may be considered, as they have shown beneficial effects in selected case reports.

For patients with disease refractory to first-line treatment, systemic therapy is employed and may include pulsed corticosteroids, methotrexate, mycophenolate mofetil, cyclosporine, retinoids, and, in exceptional cases, biological agents. The use of Janus kinase (JAK) inhibitors, such as tofacitinib, has also been described in patients with refractory disease, with small case series reporting significant clinical improvement [21].

Available data suggest that methotrexate may lead to improvement in patients with refractory erosive vulvar lichen planus (ELPV). However, it may cause adverse effects such as fatigue or gastrointestinal complaints, making therapy with this drug burdensome and its outcomes insufficiently satisfactory [22]. Therefore, further studies on the use of this drug in the treatment of lichen planus are necessary.

Additionally, in selected cases, vaginal dilators may be used to manage vaginal introitus stenosis [18].

Despite the wide range of therapeutic options, there is currently a lack of large randomized clinical trials that would allow for a clear hierarchy of the effectiveness of individual treatments. Consequently, therapeutic decisions are largely based on clinical experience and individualized patient assessments [18].

Vulvar psoriasis

Psoriasis is a chronic, immune-mediated inflammatory disease with a genetic basis. This disease can affect various areas of the body, including the anogenital region. In women, it is referred to as vulvar psoriasis. This represents a distinct form of psoriasis that may occur either as an isolated localization or as part of a generalized disease.

The pathogenesis of vulvar psoriasis involves disturbances in both the physical and immunological skin barriers. There is excessive proliferation and abnormal differentiation of keratinocytes, which leads to disruption of the epidermal structure and, consequently, dysfunction of the skin barrier. Intercellular junctions and lipid composition of the stratum corneum are also altered, resulting in increased transepidermal water loss and reduced skin protection. Skin immune cells secrete proinflammatory cytokines that stimulate keratinocytes to further proliferate and produce autoantigens, thereby amplifying and sustaining the inflammatory state. All of this contributes to the chronic nature of the disease. Moreover, it is assumed that certain alleles and epigenetic modifications, which may influence epidermal proliferation, play an important role in the pathogenesis of psoriasis Alterations in the skin and gut microbiome, infections, mechanical skin trauma, and the use of certain medications may contribute to the initiation or exacerbation of lesions in genetically predisposed individuals [23].

The disease may present in an atypical manner, which can complicate diagnosis and lead to misdiagnosis as other anogenital dermatoses. In female patients, psoriatic lesions of the vulva usually occur symmetrically and may present as moist, grayish plaques or smooth, shiny, intensely erythematous areas without scaling. Classic silvery, scaly psoriatic plaques may also be present on the external areas of the labia majora [24]. According to studies, the most commonly reported symptom is vulvar pruritus, which occurs in most patients. Less frequent but significantly impairing to quality of life are symptoms such as burning, pain, and a sensation of discomfort [25].

Diagnostics

The diagnosis is usually made by an experienced physician based on the clinical appearance of vulvar lesions, however, due to the atypical presentation of the disease, there is a risk of misdiagnosis.

Dermoscopy can be used as an additional diagnostic tool. The dermoscopic appearance largely corresponds to psoriatic lesions in other areas of the body, with some differences due to the characteristics of the anogenital region. Typical findings include a regular and uniform distribution of dotted vessels on an

erythematous background, reflecting dilated capillaries in the dermal papillae. The presence of tortuous vessels suggests increased vascularity of the lesion and an active inflammatory process. Fine, silvery, or whitish scales may also be observed, although their amount may be limited by moisture and friction in the anogenital area [26].

A biopsy is recommended in nonspecific cases when other diagnostic methods do not provide a definitive diagnosis.

Treatment

The treatment of vulvar psoriasis requires an individualized approach because of the particular sensitivity and distinct physiology of the genital skin compared with other body areas. Increased epidermal permeability enhances the effects of topical agents on the skin. Available studies emphasize that, despite an increased risk of adverse effects, topical glucocorticoids remain the most commonly used and best-documented therapeutic option [27].

In addition to standard topical corticosteroid therapy, vulvar psoriasis can be treated with a limited number of alternative topical options. The off-label use of calcineurin inhibitors, such as tacrolimus, or vitamin D analogs may be considered in selected patients, particularly during the maintenance phase of treatment. However, their clinical efficacy is lower than that of corticosteroids [27-29]. In recent years, attention has been drawn to new topical anti-inflammatory agents with favorable safety profiles. This group includes phosphodiesterase-4 inhibitors and novel modulators of inflammatory pathways, which have demonstrated improvement in skin lesions with good local tolerability in clinical studies [27-29].

The use of topical retinoids and regenerative therapies, such as ultraviolet (UV) treatment or laser therapy, is not recommended [27, 29].

Patients with refractory cases may require systemic treatment. Available data, derived mainly from case reports, clinical series and a limited number of controlled studies, suggest that improvement may be achieved with conventional systemic agents such as methotrexate, dapsone or mycophenolate mofetil. However, their use may be associated with the occurrence of adverse effects. In recent years, targeted therapies have gained importance. The most robust evidence for the efficacy in the treatment of moderate to severe genital psoriasis has been demonstrated for IL-17 inhibitors, especially ixekizumab, which in clinical trials resulted in rapid and sustained improvement in symptoms, quality of life, and sexual functioning [27]. Other biologic agents represent promising therapeutic options, but require further studies specifically focused on anogenital skin involvement. Currently, the choice of systemic therapy should be individualized and based on the overall clinical picture of the disease.

Lichen Simplex Chronicus

Vulvar lichen simplex chronicus is an acquired chronic dermatosis. It may present as a primary condition or develop secondarily to an underlying disease. It is characterized by persistent pruritus and skin lesions resulting from mechanical damage caused by repetitive “itch–scratch” cycles. This condition primarily affects adult women, although it may occur at any age [30, 31]. It leads to lichenified lesions, erythema or skin scaling. Chronic scratching results in erosions, ulcers or damage to pubic hair [18, 29].

The etiology of this disease remains unknown. The pathogenesis of the disease is not fully understood, and the number of studies addressing it is limited. It is assumed that the condition develops as a chronic inflammatory process of the skin initiated by an immune response. During the immune response, there is excessive expression of IL-4 and IL-13, which stimulate the production of proinflammatory cytokines [32].

Diagnostics

Diagnosis is usually based on the patient’s medical history and physical examination. The disease typically affects the hair-bearing skin of the labia majora. Characteristic skin findings, such as lichenified lesions, erythema, hyperpigmentation, or excoriations, facilitate diagnosis [33]. An important step in the diagnostic process is the exclusion of other conditions that may produce similar symptoms or serve as underlying causes of secondary lichen simplex chronicus. For this purpose, a biopsy may be useful, allowing histological confirmation or exclusion of a suspected diagnosis.

A study on the use of high-frequency ultrasound (HFUS) in patients with vulvar dermatoses demonstrated that it can reveal structural skin changes occurring in chronic lichen simplex. These features include thickening of the epidermis and dermis, as well as an increased proportion of blood vessels in the examined area. Therefore, HFUS represents a promising, non-invasive adjunctive method for evaluating skin lesions, which may support diagnosis and monitoring of treatment response in vulvar dermatoses [34].

Dermoscopy may reveal an increased number of tortuous vessels on a whitish background, as well as lichenification [35].

One case report describing a 20-year-old patient with recurrent lichen simplex chronicus suggests that histopathological evaluation, including hematoxylin and eosin staining, as well as immunohistochemical and immunofluorescence studies, may play an important role in determining the underlying etiology. In this case, these methods enabled the identification of chronic bacterial folliculitis of the vulvar region, which led to pruritus, subsequent scratching and ultimately the development of lichen simplex chronicus [36].

Treatment

In the management of lichen simplex chronicus (LSC), patient education regarding factors that may exacerbate the disease is crucial. It should be emphasized that excessive stress, use of certain cosmetics, or wearing underwear made of synthetic, non-breathable materials may intensify unpleasant symptoms, particularly pruritus [30, 37].

In cases where lichen simplex chronicus is secondary, identification and treatment of the underlying primary condition are the cornerstones of therapy. If symptoms persist despite effective treatment of the primary disease, therapy specifically directed at LSC should be initiated.

First-line treatment remains the topical application of corticosteroid-containing ointment. Antihistamines can be used to control pruritus [18].

In steroid-resistant cases, patients with steroid intolerance, or during long-term therapy, calcineurin inhibitors such as tacrolimus and pimecrolimus may be employed.

In recent years, new and promising topical treatment options for LSC have emerged, particularly for patients who are refractory to standard therapy. The off-label topical use of Janus kinase (JAK) inhibitors, such as tofacitinib, has demonstrated efficacy in reducing chronic pruritus. Phosphodiesterase-4 inhibitors may represent another therapeutic alternative; however, no studies have evaluated their use in the treatment of LSC. A novel TRPV3 inhibitor is also in the early phase of clinical trials and has shown good tolerability and reduced pruritus. The development of new topical therapies may significantly expand the treatment options for LSC in the future [34].

Phototherapy is not recommended for the anogenital area. In the presence of infection, appropriate antibiotic therapy is indicated [38]. Emollients are recommended to restore the epidermal barrier and reduce pruritus.

Systemic therapy includes gabapentin and pregabalin for managing neuropathic pruritus. Antidepressants are also used in clinical practice because they may alleviate nocturnal pruritus. Selective serotonin reuptake inhibitors (SSRIs) are used in patients with established compulsive scratching behavior.

Current research is ongoing on the use of methotrexate, cyclosporine, and biological therapies for the treatment of LSC [39].

The literature also includes isolated studies evaluating the use of high-intensity focused ultrasound (HIFU) for the treatment of vulvar lichen simplex chronicus. Available data suggest that this method may reduce symptom severity, particularly pruritus, with an acceptable safety profile for patients. Treatment efficacy was assessed based on subjective symptom improvement and recurrence rates. However, it should be emphasized that current reports are based on a limited number of clinical studies, which preclude a definitive assessment of HIFU efficacy. Further well-designed randomized trials are necessary to determine the effectiveness of this method for treating vulvar lichen simplex chronicus [33].

Available data suggest that lichen simplex chronicus is more responsive to procedural treatments than other lichenoid dermatoses of the vulva. In studies evaluating the efficacy of CO_2 laser therapy, patients with LSC achieved significantly greater subjective improvement in symptoms, both in early and long-term follow-ups, compared with patients with lichen sclerosus. These findings indicate that CO_2 laser therapy may be a valuable therapeutic option for the management of LSC refractory to standard treatments, particularly in patients with predominant pruritus and marked impairment of quality of life [40].

Contact Dermatitis of the Vulva

Allergic contact dermatitis of the vulva represents a significant problem in the diagnosis of chronic anogenital complaints. A substantial proportion of patients with chronic vulvar symptoms exhibit allergic contact dermatitis features. In a prospective study, 87 patients presenting with vulvar pruritus were identified, with contact dermatitis being the most common cause of acute onset [2]. The susceptibility of the vulvar skin to allergic reactions results from its anatomical structure and local environmental conditions, including increased tissue permeability, constant exposure to moisture and physiological secretions, and mechanical factors such as friction. The use of numerous hygienic and over-the-counter therapeutic products, often applied

to already irritated skin, promotes the development of contact hypersensitivity. Their excessive use, commonly observed among patients with vulvar symptoms, may further exacerbate sensitization [41].

In one study, the authors classified vulvar allergic reactions into those associated with sexual contact and those unrelated to sexual activity. Factors triggering sexually related reactions included latex, spermicides, and substances contained in condoms and lubricants, whereas non-sexually related reactions were attributed to components of detergents, soaps, intimate hygiene products, and cosmetics [42].

Diagnostics

The nonspecific nature of clinical symptoms and the large number of potential allergens to which vulvar skin may be exposed make accurate diagnosis challenging. Symptoms such as erythema, pruritus, and burning are common to many anogenital dermatoses, which contribute to diagnostic delays and misdiagnosis. Furthermore, identification of the etiological factor is often difficult due to simultaneous exposure to multiple irritant and allergenic substances, both exogenous and related to hygiene practices or topical treatments.

The diagnosis of vulvar contact dermatitis requires a comprehensive clinical assessment, including a detailed medical history and physical examination. Particular attention should be paid to a history of dermatoses that have failed to respond to standard therapy, as this may suggest underlying contact allergy. Patch testing constitutes an important adjunct to the diagnostic process, enabling identification of potential allergens responsible for the clinical symptoms [36].

Treatment

Treatment is primarily based on the elimination of irritant factors and allergens. Patient education regarding appropriate anogenital care and the use of cosmetics, lubricants, and hygiene products with suitable formulations is crucial. To alleviate symptoms, the use of topical corticosteroid ointments is recommended. Antihistamines and tricyclic antidepressants may help reduce pruritus [5].

Discussion

This systematic review has several limitations that should be acknowledged. First, the literature search was restricted to the PubMed and Google Scholar database and to articles available as free full-text publications. As a result, relevant studies indexed in other databases or published in subscription-based journals may have been missed. Moreover, the available literature on vulvar dermatoses is characterized by substantial heterogeneity. Some of the included publications consist of single case reports, small case series or observational studies, which limits the strength of the evidence and the generalizability of the findings. Another important limitation is the lack of standardized diagnostic criteria, outcome measures, and disease severity scoring systems specific to vulvar involvement, which complicates cross-study comparisons and interpretation of therapeutic efficacy. Moreover, for certain conditions, especially anogenital psoriasis, recent high-quality studies focusing specifically on vulvar involvement remain scarce. This may have affected the completeness of the evidence base and highlights the need for well-designed, prospective clinical trials dedicated to vulvar dermatoses.

Conclusions

The conclusions drawn from the literature review indicate that chronic vulvar dermatoses are characterized by a substantial overlap of clinical symptoms, which significantly complicates their differentiation and makes skin biopsy a key element of the diagnostic process, particularly in atypical or treatment resisant cases. Despite numerous studies, the etiology and pathophysiology of many of these diseases have not yet been clearly defined, which may limit the development of new therapies and effective treatment. The literature reveals a lack of up-to-date studies on vulvar lichen planus and a limited number of publications focusing on psoriasis of the anogenital region, particularly with regard to systemic treatment. Although new therapeutic options are emerging, data on their effectiveness in treating vulvar lesions remain limited, and the absence of comparative studies with standard therapies makes it difficult to clearly define their place in treatment algorithms.

In clinical practice, therapeutic decisions should be individualized and take into account not only the severity of skin lesions and treatment tolerance, but also the impact of the disease on quality of life, sexual functioning, and the psychological well-being of patients. Despite the growing interest in vulvar dermatoses, there is still a lack of clearly defined guidelines for the diagnosis and management of individual disease entities.

The treatment of chronic vulvar dermatoses remains a therapeutic challenge and requires an interdisciplinary approach. Further clinical studies and the development of unified diagnostic criteria and management protocols are necessary to enable more effective treatment and a real improvement in patients' quality of life.

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