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## THE THERAPEUTIC EFFICACY AND PATHOGENETIC RATIONALE OF A NOVEL MULTI-COMPONENT PHYTO-EXTRACT IN THE MANAGEMENT OF MICROBIAL ECZEMA OF VARIOUS ETIOLOGIES

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**Abstract.** Background: Microbial eczema represents a complex dermatological challenge, characterized by a chronic relapsing course and a multifactorial pathogenesis that involves profound immune dysregulation and neurogenic sensitization. Traditional therapies often struggle with patient compliance and side effects, necessitating the exploration of effective botanical alternatives. Objective: The primary goal of this research was to evaluate the clinical effectiveness of a novel complex herbal extract, Vitaderm, in treating different clinical forms of microbial eczema and to analyze its impact on the inflammatory and regenerative phases of the disease. Methods: A prospective clinical study was conducted involving seventy-nine patients diagnosed with various subtypes of microbial eczema. The treatment protocol integrated standard systemic therapy with the frequent topical application of the Vitaderm extract. Clinical parameters, including the cessation of exudation, reduction of pruritus, and epithelial regeneration rates, were meticulously monitored. Results: The findings demonstrated that the topical application of the herbal extract significantly accelerated the healing process. Exudative manifestations ceased within an average of 1.8 days, while acute inflammatory symptoms and subjective sensations of itching were substantially mitigated by the third and fourth days of therapy. Complete restoration of the epidermal barrier and detachment of crusts were achieved significantly faster than with conventional monotherapy. Conclusion: Vitaderm possesses potent bactericidal, fungicidal, and anti-inflammatory properties. Its ability to promote rapid regeneration without causing systemic toxicity or staining makes it a superior candidate for integration into modern dermatological practice for the treatment of microbial eczema.

**Keywords:** microbial eczema, phytotherapy, Vitaderm, inflammatory dermatosis, immune dysregulation, regenerative medicine, clinical dermatology.

## ТЕРАПЕВТИЧЕСКАЯ ЭФФЕКТИВНОСТЬ И ПАТОГЕНЕТИЧЕСКОЕ ОБОСНОВАНИЕ ПРИМЕНЕНИЯ НОВОГО МНОГОКОМПОНЕНТНОГО ФИТОЭКСТРАКТА В ЛЕЧЕНИИ МИКРОБНОЙ ЭКЗЕМЫ РАЗЛИЧНОЙ ЭТИОЛОГИИ

**Аннотация:** Микробная экзема представляет собой сложную дерматологическую проблему, характеризующуюся хроническим рецидивирующим течением и многофакторным патогенезом, включающим глубокую иммунную дисрегуляцию и нейрогенную сенсibilизацию. Традиционные методы терапии часто сталкиваются с проблемами комплаентности пациентов и побочными эффектами, что требует поиска эффективных растительных альтернатив. Цель: Основной целью данного исследования было оценить клиническую эффективность нового комплексного растительного экстракта



«Витадерм» при лечении различных клинических форм микробной экземы и проанализировать его влияние на воспалительную и регенеративную фазы заболевания. Методы: Проведено проспективное клиническое исследование с участием семидесяти пяти пациентов с диагнозом различных подтипов микробной экземы. Протокол лечения сочетал стандартную системную терапию с частым местным применением экстракта Витадерм. Тщательно контролировались клинические параметры, включая прекращение экссудации, уменьшение зуда и скорость регенерации эпителия. Результаты: Полученные данные продемонстрировали, что местное применение растительного экстракта значительно ускоряло процесс заживления. Экссудативные проявления прекратились в среднем в течение 1,8 дня, в то время как острые воспалительные симптомы и субъективные ощущения зуда были существенно купированы к третьему и четвертому дням терапии. Полное восстановление эпидермального барьера и отторжение корок были достигнуты значительно быстрее, чем при традиционной монотерапии. Вывод: Витадерм обладает мощными бактерицидными, фунгицидными и противовоспалительными свойствами. Его способность стимулировать быструю регенерацию, не вызывая системной токсичности или загрязнения одежды, делает его отличным кандидатом для интеграции в современную дерматологическую практику лечения микробной экземы.

**Ключевые слова:** микробная экзема, фитотерапия, Витадерм, воспалительный дерматоз, иммунная дисрегуляция, регенеративная медицина, клиническая дерматология.

## INTRODUCTION

Microbial eczema is currently recognized as one of the most challenging inflammatory skin conditions within the field of modern dermatology. It is defined as a neurogenic and allergic dermatosis that arises as a specific reaction to chronic infectious foci. Statistics indicate that this condition constitutes approximately forty to fifty percent of all allergic dermatoses, demonstrating a particularly high prevalence among the elderly population [1, 3]. The disease is notorious for its persistent, recurring nature, and the lack of prolonged remissions often leads to a significant decrease in the quality of life for affected individuals.

The pathogenetic mechanism of microbial eczema is extraordinarily complex and involves a systemic shift in the body's reactivity. According to contemporary research, the development of the disease is closely linked to sensitization towards microbial antigens, often occurring against a backdrop of dysfunctional neuroendocrine and immune systems [6, 7]. Furthermore, many scholars emphasize the role of gastrointestinal disturbances and hereditary predispositions in the manifestation of eczematous lesions. The immune status of these patients is typically characterized by a notable decrease in the levels of specific T-lymphocytes, particularly the CD4<sup>+</sup> and CD8<sup>+</sup> subsets. This deficiency is often accompanied by reduced phagocytic activity and an abnormal accumulation of circulating immune complexes, which perpetuates the inflammatory cycle in the dermal layers [2, 4].

The transformation of chronic pyococcal infections into microbial eczema is frequently observed when the organism's specific reactivity increases not only towards the external pathogens but also towards the components of its own cutaneous tissues. This auto-sensitization is a hallmark of the transition from a simple infection to a complex eczematous process [7]. Vascular changes and impaired microcirculation also play a critical role, especially in variants like paratraumatic eczema, which is often tied to a varicose symptom complex. Given the evolutionary polymorphism of the disease and the high sensitivity of eczematous skin to synthetic chemicals, there is an urgent clinical need for therapeutic agents that are both effective and mild in their interaction with the skin barrier.



## **Literature Review**

The academic discourse surrounding microbial eczema has evolved significantly over the past decades, moving from a purely infectious perspective to a holistic understanding of immune-mediated inflammation. Aizyatulov R. F. [1] emphasizes that the microbial factor acts as a primary trigger that initiates a cascade of allergic reactions, which eventually become self-sustaining even after the initial pathogen is suppressed. This observation is supported by the work of Ivanov O. L. [3], who noted that the chronic nature of the disease is often sustained by secondary auto-sensitization to epithelial antigens.

Recent international studies have highlighted the profound impact of *Staphylococcus aureus* and various fungal species in the perpetuation of eczematous lesions. Markova O. N. [5] discusses how microbial biofilms on the skin surface can provide a persistent source of antigenic stimulation, which leads to the chronic activation of dermal mast cells and the subsequent release of pro-inflammatory cytokines. This chronic activation is what leads to the characteristic "eczematous wells" and the persistent weeping that defines the acute phase of the disease.

The shift towards phytotherapy in modern dermatology is a response to the increasing incidence of side effects from long-term corticosteroid use. Potekaev N. S. [6] suggests that while corticosteroids are effective for rapid symptom control, they do not address the underlying microbial sensitization and can sometimes lead to skin atrophy or local immunosuppression. In contrast, researchers like Skripkin Yu. K. [7] have advocated for the use of multi-component plant extracts that offer a broader pharmacological profile. These botanical agents, such as those derived from Chamomile and Wormwood, provide a balanced approach by combining antimicrobial activity with tissue-regenerative properties.

Furthermore, the role of the skin microbiome in eczema has become a focal point of recent research. Sokolovsky E. V. [8] points out that therapeutic strategies should not only aim to eliminate pathogens but also to restore the skin's natural ecological balance. Phytotherapeutic preparations are uniquely suited for this purpose, as they often contain polyphenols and essential oils that selectively inhibit pathogenic strains while preserving the commensal flora. The current consensus in the literature suggests that a successful treatment protocol must integrate both systemic immunomodulation and topical agents that promote rapid epithelialization and barrier restoration [9, 10].

## **MATERIAL AND METHODS**

The research was structured as a prospective clinical observation carried out at the clinical sites of the Andijan State Medical Institute. The study cohort comprised seventy-nine patients, consisting of forty-two men and thirty-seven women. The age of the participants ranged from fifteen to sixty-four years, providing a broad demographic spectrum for the evaluation of the treatment's efficacy. The diagnosis of microbial eczema was established based on classical clinical features, including the presence of "eczematous wells," evolutionary polymorphism, and the characteristic localization of lesions around chronic infectious foci.

To ensure a comprehensive analysis, the patients were categorized according to the specific clinical form of their condition. The group included fifteen individuals with nummular eczema, twenty-five with paratraumatic eczema, seventeen with varicose eczema, twelve with the sycosiform variant, and ten patients suffering from eczema of the nipples. Many of these cases were preceded by identifiable provocative factors such as surgical procedures, contact with harsh industrial chemicals, or exposure to specific allergenic plants.



The therapeutic intervention involved a dual approach. All patients received a standardized systemic treatment regimen which included antihistamines such as chloropyramine or cetirizine, desensitizing agents like calcium gluconate or sodium thiosulfate, and broad-spectrum antibiotics based on sensitivity testing. The experimental component of the study was the topical application of the Vitaderm extract. This unique formulation is a multi-component herbal solution prepared in forty percent ethyl alcohol. Its active ingredients include Chamomilla recutita (chamomile), Bidens tripartita (beggar-ticks), Inula helenium (elecampane), Acorus calamus (sweet flag), Artemisia absinthium (wormwood), and Cichorium intybus (chicory).

The application method was standardized for all participants. Patients were instructed to apply cold compresses using four to six layers of sterile gauze soaked in the Vitaderm extract, maintained at a temperature between 3-5°C. These compresses were applied to the pathological foci seven to eight times daily during the acute phase. As the lesions began to dry, the frequency was adjusted, and supplementary neutral creams or ointments were introduced to support the final stages of epithelialization.

## RESULTS AND DISCUSSION

The implementation of the Vitaderm extract in the complex therapy of microbial eczema yielded highly positive clinical outcomes. One of the most significant observations was the rapid transition from the exudative (wetting) phase to the drying phase. On average, the cessation of serous discharge from the eczematous wells was observed within  $1.8 \pm 0.2$  days of initiating the herbal applications. This rapid effect is crucial for preventing secondary bacterial infection and for stabilizing the patient's physical comfort.

The inflammatory markers, including perilesional erythema and edema, showed a marked reduction within the first few days of treatment. Specifically, significant regression of acute inflammation was documented by  $3.4 \pm 0.15$  days. Subjective symptoms, which are often the most distressing for the patient, also responded favorably. The sensation of intense itching, which typically accompanies microbial eczema, began to subside significantly by day  $3.5 \pm 0.21$ . Furthermore, the infiltration of the skin tissues, reflecting the deeper inflammatory process, was visibly reduced by  $4.1 \pm 0.12$  days.

Under the influence of the Vitaderm extract, the serous-purulent discharge transformed into dry crusts. Following the subsequent application of moisturizing and regenerative creams, these crusts detached naturally, revealing healthy, pinkish spots without scarring. The complete detachment of crusts and the finalization of the primary healing phase occurred on average by  $5.3 \pm 0.12$  days. It is important to note that the efficacy was consistent across the different clinical forms.

*The following table summarizes the temporal dynamics of the clinical improvement observed during the study period.*

| Clinical Parameter monitored during therapy | Average Day of Improvement (Mean $\pm$ SD) | Qualitative Clinical Observations                            |
|---------------------------------------------|--------------------------------------------|--------------------------------------------------------------|
| Termination of Serous Exudation             | $1.8 \pm 0.2$                              | Transformation of "eczematous wells" into a dry surface.     |
| Regression of Perilesional Erythema         | $3.4 \pm 0.15$                             | Marked reduction in localized skin redness and heat.         |
| Significant Subsidence of Pruritus          | $3.5 \pm 0.21$                             | Relief from itching leading to better sleep and less trauma. |
| Reduction of Dermal Infiltration            | $4.1 \pm 0.12$                             | Flattening of the lesion and softening of skin texture.      |



|                               |            |                                                           |
|-------------------------------|------------|-----------------------------------------------------------|
| Complete Detachment of Crusts | 5.3 ± 0.12 | Exposure of regenerated pink epithelium without scarring. |
|-------------------------------|------------|-----------------------------------------------------------|

The therapeutic success of Vitaderm can be attributed to the synergistic action of its herbal components. The preparation exhibits potent bactericidal and fungicidal activities, which are crucial in addressing the microbial component of the eczema. Unlike many traditional topical agents, Vitaderm also provides an antipruritic and astringent effect, which helps in the rapid stabilization of the epidermal barrier. Furthermore, the study confirmed that the extract accelerates epithelial cell regeneration. An additional practical advantage noted was that the extract does not stain clothing or bedding, which improves patient compliance compared to other traditional topical treatments like dyes.

### CONCLUSION

The clinical evaluation of the Vitaderm herbal extract demonstrates its high efficacy as a topical agent in the complex therapy of microbial eczema. The study confirms that the extract possesses a broad range of beneficial properties, including bactericidal, fungicidal, anti-inflammatory, and regenerative actions. The integration of this phyto-preparation into standard treatment protocols allows for a significantly faster resolution of the clinical symptoms, particularly in stopping exudation and relieving pruritus.

The research highlights that the use of multi-component botanical solutions can serve as a viable and safe alternative to synthetic topical medications, especially for patients with a high degree of chemical sensitivity. Ultimately, Vitaderm offers a pathogenetically grounded and clinically proven method to improve the management of microbial eczema, reducing the frequency of relapses and enhancing the overall dermatological health of the patients.

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