

**PATHOGENETIC ASPECTS OF THE DEVELOPMENT OF LICHEN RED
PLANUS**

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Annotation: In the article, the authors analyzed the world literature on the problem of etiology and pathogenesis of lichen planus. Particular attention is paid to revealing the mechanisms of development and course of this pathology. The authors conclude that the etiology of lichen planus remains unclear, although there are various reports of immune dysregulation, infectious nature, environmental and genetic factors in the development of the disease.

**ПАТОГЕНЕТИЧЕСКИЕ АСПЕКТЫ РАЗВИТИЯ КРАСНОГО ПЛОСКОГО
ЛИШАЯ**

Аннотация: В статье авторами проведен анализ мировой литературы на проблему этиологии и патогенеза красного плоского лишая. Особое внимание уделено раскрытию механизмов развития и течения данной патологии. Авторами делается вывод о том, что этиология красного плоского лишая остается неясной, хотя имеются различные сообщения об иммунной дисрегуляции, инфекционной природе, экологических и генетических факторах развития заболевания.

LICHEN QIZIL PLANUSI RIVOJLANISHINING PATOGENETIK JIXATLARI

Annotatsiya: Maqolada mualliflar liken planusining etiologiyasi va patogenezini muammosi bo'yicha jahon adabiyotini tahlil qildilar. Ushbu patologiyaning rivojlanish mexanizmlari va kechishini aniqlashga alohida e'tibor beriladi. Mualliflarning xulosasiga ko'ra, liken planusining etiologiyasi noaniq bo'lib qolmoqda, garchi kasallikning rivojlanishida immunitetning buzilishi, yuqumli tabiat, atrof-muhit va genetik omillar haqida turli xil xabarlar mavjud.

Lichen planus (LP), or lichen planus, is a relatively rare dermatosis affecting 1% of the world's population. The disease can occur in both children and adults, but is most common between 30 and 60 years of age. Women get sick more often than men. Moreover, according to various authors, the average age is 40±4 years. As statistical data show, LP mainly occurs in adults, but nevertheless, the scientific literature describes cases of lesions in children (10–11%) [1]. Among many publications, the frequent occurrence of LP in Indian children attracts attention [2]. However, it should be noted that the incidence of this disease is high in the African American population (72%) compared to the general population (21%) [3]. Previously, it was believed that LP has a neurogenic theory of origin [4]. At that time, the term “lichen” was used abroad, and after translation into Russian - “lichen”. It is important to emphasize that neither the clinical manifestations nor the etiopathogenesis of the disease have anything to do with fungal dermatoses of the skin. The above scientific works present

the results of a comprehensive study of CRL, based on diagnosis and differential diagnosis with similar dermatoses.

The etiology of LP remains unclear, although there are various reports on immune dysregulation, infectious nature, environmental and genetic factors in the development of the disease [5]. The world literature presents opinions on the impact of stress as a provoking factor on the development of LP and on impairments of cognitive functions and psychological status in the latter [6]. According to many authors, LP occurs and worsens as a result of uncontrolled use of various medications [7]. At the same time, LP can occur as an overlap syndrome (in combination or as a secondary manifestation of the underlying disease). Among such diseases in the literature, hepatitis C and primary biliary cirrhosis are noted [8]. It should be noted that the latter disease is more often combined with oral cavity LP, namely with its erosive form. According to 16 data from a number of authors, LP can occur after vaccination against hepatitis B [10], as a result of previous viral and bacterial infections, and also as a complication after exposure to metal ions and taking medications from a home medicine cabinet [9]. In contrast to toxic reactions, manifestations of the LP type occur approximately on the 100th day after the toxic substance begins to enter the body. An autoimmune theory of the origin of LP is supported by evidence of a combination of other autoimmune pathologies in the family history in 17% of cases [11].

The immunopathogenesis of LP is associated with a T-cell autoimmune reaction. The inflammatory cells involved in this process consist of T helper cells, T cytotoxic lymphocytes, natural killer cells and dendritic cells [12]. Activation of T cells is a central link in the pathogenesis of LP. Their accumulations at the level of the epidermal-dermal junction lead to apoptosis of basal keratinocytes [13]. Theoretically, the latter could be induced by CXCR3 and CCR5 signaling pathways initiated by both T cells and keratinocytes [1]. In the early stages of the disease, T cells are predominantly located at the level of the epidermis and epidermodermal junction [2]. In the pathogenesis of the disease, the role of clones of autoreactive T cells is suggested, which have a direct effect on keratinocytes, which leads to impaired apoptosis of epidermal cells. In the latter case, keratinocytes and Langerhans cells recognize drug-antigen complexes as foreign [4]. The autoimmune theory of the disease is logical, on the one hand, due to the participation of a large pool of T lymphocytes in the skin biopsy, and on the other, due to the frequent combination of LP with other pathologies of the body [8]. It should be noted that CD8+ T- (cytotoxic) lymphocytes predominate among T cells. The latter are closely located with mononuclear cells - histiocytes. The question always remains open for us: why is the infiltrate of lymphocytes and histiocytes located in the lichenoid infiltrate close to the epidermis, supposedly squeezing and pressing it tightly? We believe that the answer to this question should be sought in long-term antigenic persistence in keratinocyte cells. It is likely that there is a large number of antigens from viruses of various origins, which induce activation of CD4+ and CD8+ T-lymphocytes, and also contributes to the release of both pro-inflammatory and post-inflammatory cytokines of various levels [10]. Among these pro-inflammatory and anti-inflammatory cytokines are interleukins (IL)-1, -2, -4, -6, -10 and -31. They promote increased expression of molecules called ICAM-1 (intercellular adhesion molecules) on antigen-presenting cells such as Langerhans cells, histiocytes and dendritic cells. This mechanism indirectly, through the major histocompatibility complex, affects keratinocytes, which leads to an acceleration of apoptosis of the latter [11]. Lesions show overexpression of CCR5-related chemokines as well as the target chemokines CXCR3 [12].

This correlation suggests that self-control mechanisms and induction of keratinocytes themselves are involved in T cell migration. In addition, Langerhans cells can be induced by CCR6-mediated chemokines [13]. Activated T cells stimulate a T helper type 1 (Th1) response, leading to the removal of keratinocytes by immune cells [11]. Type 1 T helper cells are regulated and activated through type 2 toll-like receptors [1]. NK (natural killer) cells can also be detected in skin biopsies of patients with LP [8]. They may be involved in pathogen E18 disease through cytotoxic activation and are capable of releasing proinflammatory cytokines [7]. One of the main pathogenetic mechanisms in LP is an increase in keratinocyte apoptosis with a decrease in T-cell apoptosis [5]. Activated cytotoxic T cells can regulate Fas ligands and induce apoptosis of keratinocytes at the level of the stratum spinosum of the epidermis [8]. NK cells and cytotoxic T cells can also induce cell apoptosis through the granzyme B/perforin pathway. According to some authors, these apoptotic cells are capable of reflecting disease activity [9]. The works of A. Ragaz and AB Ackerman report that in the early stages of the disease the number of Langerhans cells increases [7]. Everyone knows that the latter are powerful antigen-presenting cells and present foreign antigen to T cells . The works of a number of authors indicate that Langerhans cells are most often detected in LP of the oral cavity [5]. According to a number of authors, in the pathogenesis of patients with LP there is a violation of the mechanisms of immunosuppression through lymphocyte growth factors [4].

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