

молочної залози, аденокарциноми легень, сечового міхура та карциноми яєчників.

На сьогодні однією з важливих проблем терапії раку є подолання мінімальної залишкової хвороби, викликаной дисемінацією пухлинних клітин та утворенням не виявлених клінічним способом мікрометастазів. Метастази, які утворюються після хірургічного видалення первинної пухлини, у 90% випадків стають причиною смерті онкологічних хворих. Вчені Інституту експериментальної патології, онкології та радіобіології ім. Р.Є. Кавецького НАН України виявили зв'язки між рівнями активності желатиназ у кістковому мозку і стадіями захворювання, рівнем метастазування та наявністю дисемінованих пухлинних клітин у кісткового мозку хворих на РШ. Тому є актуальним продовження дослідження ролі ММП в утворенні та перебігу мікрометастазів після видалення первинної пухлини для розробки перспективної методики прогнозування перебігу мінімальної залишкової хвороби, створення якої дасть можливість індивідуалізованого підходу до протипухлинної терапії та покращить показники виживаності онкологічних хворих.

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CLINICAL MANIFESTATIONS OF FACE SKIN DEMODECOSIS AND THERAPY METHODS

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Purpose. Analyze and summarize scientific literature data on the etiology, pathogenesis and pharmacotherapy of dermatological diseases complicated by tick-demicides.

Materials and methods. The following materials were used as materials for the study: National List of Drugs Registered on the Territory of Ukraine, Compendium of 2018 (ed. V. N. Konovalenko) and literary sources of scientific and scientific journals.

Results. Using data from the scientific literature and clinical protocols for the treatment of complications caused by demodicosis, methods of treatment (anti-inflammatory, antiparasitic therapy and the use of agents that reduce sebum secretion) to be used in the development of a drug for the treatment of demodicosis of the facial skin were studied.

Conclusions. Studies have shown the relevance of the creation of a new drug for the treatment of complications caused by demodicosis of the skin.

Key words: *demodecosis, drug development, clinical treatment.*

Introduction. Demodicosis is a widespread, invasive disease demodecosis caused by pathological mite reproduction a kind of demodex that lives in the skin all

the time. Demodex ticks are conditionally pathogenic parasites, since for a long-time small amount of them can parasitize on human skin, preferably on the face and not show any symptoms and pathological changes in the skin. But under favorable conditions under which parasites multiply rapidly and increase their size activity, there are clinical manifestations of demodicosis in the form of different skin inflammations. Depending on the preference of one or the other symptoms are distinguished - erythematous, pustular, papular and combined forms of demodicosis. The presence of the Demodex tick exacerbates the course of a number of dermatological diseases, e.g. rosacea. In addition to the usual manifestations of rosacea, are observed micropapules and follicular micro-pustules containing them piners. Treatment of demodicosis - the task is not easy, because the disease- It often occurs against the background of lowering immunity as well combined with other diseases. That is why the treatment includes both systemic and local therapy. The main place acaricidal (antiparasitic) therapy, although not is always effective. Application is effective metronidazole, birch tar, benzyl benzoate. Scheme treatment for demodicosis includes preparations containing salicylic acid, resorcinol. Given that rosacea characterized by vascular damage is justified use a condition of troxerutin that exhibits venotonizing, angioprotective, anti-edema, antioxidant and anti-fuel action. Increase in the incidence of dermatological diseases, complicated by demodex, prevalence on the domestic pharmaceutical the market of foreign production of drugs determines the relevance of creation complex medicines, including antiparasitic action taking into account all links of pathogenesis and clinical manifestations of these pathological processes [12].

The purpose of this work is to analyze and summarize the scientific literature data on the etiology, pathogenesis and pharmacotherapy of dermatological diseases, complicated by demodicosis ticks.

Methods. Nowadays the problem of treatment and rehabilitation of patients with demodicosis, rosacea, periodic dermatitis, acne is quite urgent, as there is an increase in morbidity among people of working age, increasing the requirements for appearance as a factor that plays an important role in professional personality success in society. As a result of the chronic course of the inflammatory process, skin defects are formed that are resistant to most methods of external therapy and cosmetic correction. Today, demodicosis is considered as a factorial disease, the development of which, in addition to invasion and sensitization by tick-demicides, is promoted by endogenous and exogenous factors such as endocrine and immune disorders, chronic infections in the body, diseases of the gastrointestinal tract, vascular reactions, long-term reactions, long-acting factors. Toxic effects on humans due to enzymatic toxicity of saliva of *D. folliculorum* and *D. Brevis*, its antigenic activity, as well as mechanical damage to the epithelium of the skin by the oral organs of parasites during

eating [10]. Enzymatic toxicity of tick saliva is confirmed by the detection of pathological changes in the skin-follicular complex of the skin, and its antigenic activity by the emergence of allergic reactions, which confirms the destruction of patients with cellular (skin) and humoral immunity. To date, the most studied in terms of their toxic effect on humans is *Demodex* (D.) *folliculorum*, which lives in hair follicles, and *Demodex brevis* in the sebaceous, meibomian and Zeiss glands - the parasites of all racial groups. Like other representatives of this genus, both types of demodicides have almost completely lost their resemblance to typical ascaris, greatly simplified and sufficiently small in size (length up to 200-440 microns, width 40-45 microns) and fusiform resemble more miniature worms. than ticks. In both species there is no excretory system, its function is performed by the intestine, the integument and the reproductive system (in females). Also lacking the respiratory system, respiration is probably carried out by anaerobic type, due to the absorption of fats and glycogen. There are no democicides and organs of osmoregulation, but the reproductive and digestive systems are more or less well developed. Toxic secretion of salivary glands in the human body democits are injected with the help of the oral apparatus of the prickly type. The peculiarity of the functioning of the oral apparatus of these mites is that its chelicerae have become chute stilettos, adapted to pierce the cover of the victim and inject saliva into the affected area and transport it to the intestine where the food is aspirated. After chelicerae penetrate under the covers of the animal through translational movements, they close and form inside a hollow tube (cannula), resembling the needle of a syringe. Through this tube-barrel, the parasite first injects the secretion of the salivary glands, under the action of which is the primary digestion of the food substrate, and only then sucks in the partially processed food [7].

A clinical sign of the presence of a tick is the formation of follicular papules of pink color with a conical apex. With the subsequent clinical course of the disease, lesions are formed in the lesions, papules, vesicles, or pustules and scales. In the formation of pustular rash, mites play both a direct and indirect role, since, by creeping into the skin surface and penetrating into the follicles, pathogens can be penetrated into the follicles and sebaceous glands.

Results. The multifactorial development of dermatoses causes the use of complex methods of therapy and requires examination and, if necessary, treatment by specialists (therapist, gastroenterologist, endocrinologist, neurologist, gynecologist, etc.) to reduce hyperemia, infiltration and elements of rash prescribe antiparasitic agents, desensitization therapy, vascular drugs, vitamin therapy, external agents and carry out treatment concomitant pathology, mainly digestive organs.

According to the literature, the treatment of demodicosis should be a stepwise one and include symptomatic drugs, anti-inflammatory, antibacterial, desensitizing

and antiparasitic agents, as well as treatment of comorbidities and preventive measures.

Treatment of demodicosis is divided into the following stages: 1) symptomatic hyposensitizing and anti-inflammatory therapy; 2) antiparasitic therapy; 3) the use of drugs of self-regulatory action (reduce sebaceous excretion) and affect the condition of the vascular wall and vascular regulation.

Priority in the treatment of demodicosis is the topical application of acaridids: treatment of face skin by the Demianovich method, benzyl benzoate preparations, 5-10% sulfur ointment, 1-5% metronidazole preparations [5].

Permethrin drugs that act on nerve cell membranes, bind to their lipid structures, disrupt the sodium channels that regulate membrane polarization are also used as antiparasitic agents. As a result, there is a slowdown in membrane repolarization and parasite paralysis. Pyrethroid molecules are able to penetrate the cuticle of the mite and concentrate in the hemolymph [8].

In the first stage, the elimination of corticosteroid drugs with subsequent relief of dermatitis, which is observed in more than 80% of patients 3-5 days after their withdrawal, is required. Clinically, "cancellation dermatitis" is manifested as erythema, which is accompanied by pronounced edema and fever in lesions and multiple increases in the number of rashes and lesion area. "Dermatitis cancellation" is accompanied by sharp burning, burning and itching followed by a sensation of tightening of the skin [2,4].

This stage shows a hypoallergenic and balanced vegetarian diet and antihistamines. Topical application of agents that help to constrict blood vessels and relieve symptoms: cold lotions 1-2% solution of boric, salicylic acid or 1-2% solution of resorcinol, infusions of medicinal plants (chamomile, herbs, sage or marshmallow root), irrigation with thermal water, the use of indifferent and hydrating rolling and photose-curing agents [6,12].

At the second stage of treatment is carried out depending on the severity of clinical manifestations. Locally used alternating lotions of infusions of herbs (chamomile, sage) with pastes with 2-5% ointment of naphthalane and birch tar and indifferent creams. In the case of combining perioral dermatitis with demodicosis, acaricidal agents are prescribed

Systemic therapy involves the use of immunomodulators, antihistamines, sedatives and antibacterial drugs (tetracycline, metronidazole in medium doses) [1,3]. The most effective is the pathogenetic treatment of periodic dermatitis by metronidazole. The therapeutic effect of metronidazole in perioral dermatitis is probably due to its bacteriostatic effect against the conditionally pathogenic microflora of the skin, including gram-negative rods.

Priority for the prevention of perioral dermatitis is the refusal of the use of local corticosteroid drugs in the treatment of any dermatological diseases (rosacea, vulgar acne, seborrheic dermatitis), especially in people at risk (patients with chronic lesions, chronic disease exacerbation stage) [11].

Conclusion. Studies have shown the relevance of the creation of a new drug for the treatment of complications caused by demodicosis of the skin.

References:

1. Давыдова И. Б. Местное применение метронидазола в терапии акне и акнеиформных дерматозов / И. Б. Давыдова, Н. А. Чхатвал, М. А. Королева // Клиническая дерматология и венерология. – 2008. – № 5. – С. 73–75.
2. Дмитрук С. И. Фармацевтическая и медицинская косметология / С. И. Дмитрук. – М. : МИА, 2007. – 184 с.
3. Метронидазол в терапии розацеа и периорального дерматита / Р. С. Бабаянц, А. В. Ильинская, С. А. Громова и др. // Вестник дерматологии. – 1983. – № 1. – С. 13–17.
4. Коган Б. Г. Діагностика і терапія розацеа, демодекозу, дерматиту періорального з урахуванням спільних чинників виникнення, патогенезу та особливостей клінічного перебігу дерматозів : автореф. дис. ... д-ра мед. на-ук: спец. 14.01.20 «Шкірні та венеричні хвороби» / Б. Г. Коган. – К., 2006. – 44 с.
5. Половко Н. П. Комплексний підхід до лікування дерматологічних захворювань, ускладнених демодексом / Н. П. Половко, В. Є. Юрченко // Клінічна фармація : 20 років в Україні: матеріали Національного конгресу, Харків, 21–22 берез. 2013 р./ М-во охорони здоров'я України ; М-во освіти і науки України ; НАН України та ін. – Х., 2013 С. 289.
6. Чубар О. В. Клініко–патогенетичне обґрунтування нових підходів до комплексного лікування хворих на рожеві вугри : автореф. дис. канд. мед. наук: спец. 14.01.20 «Шкірні та венеричні хвороби» / О. В. Чубар. Х., 2006. – 20 с. 105
7. Handbook of Pharmaceutical Excipients / ed. by R. C. Rowe. – 7th ed. – London : Pharmaceutical Press, 2012. – 1064 p.
8. Kogan, B. Improved acaricide therapy for rosacea, demodicosis and dermatitis perioral / B. Kogan, V. Stepanenko, V. Gorgol // Journ. of the Europ. Acad. of Dermatol. and Venereol. – 2004. – Vol. 18, Suppl. 2. – P. 165.
9. Kogan, B. G. Rosacea, demodecosis, perioral dermatitis: rational approach to their treatment / B. G. Kogan, V. I. Stepanenko, A. V. Pavlychin // Journ. of the Europ. Acad. of Dermatol. and Venereol. – 2004. – Vol. 18, Suppl. 1. – P. 65.
10. Nultinff, W. B. Pathogenesis associated with hair follicle mites (Demodex spp.) / W. B. Nultinff, A. C. Geer // Br. J. Dermatol. – 2006. – Vol. 9, № 4. – P. 34–38.

11. The impact of rosacea on quality of life: effects of demographic and clinical characteristics and various treatment modalities / B. Aksoy et al. // Br. J. Dermatol. – 2010. – Vol. 163, № 4. – P. 719–725.
12. Logan R. A. Climatic factors and rosacea / R. A. Logan // Acne and related disorders / R. A. Logan, W. A. Griffiths; ed. by R. Marks, G. Plewing. – L. : Dunitz, 1989. – P. 311–315.

КЛІНІЧНІ ПРОЯВИ ДЕМОДЕКОЗУ ШКІРИ ОБЛИЧЧЯ ТА МЕТОДИ ТЕРАПІЇ

Коноваленко І. С., Джамалова А.

Мета – провести аналіз та узагальнення даних наукової літератури щодо етіології, патогенезу та фармакотерапії дерматологічних захворювань, ускладнених кліщами-демодицидами.

Матеріали та методи. В якості матеріалів дослідження були використані: Національний перелік препаратів, що зареєстровані на території України, Компендіум 2018 року (ред. В. Н. Коваленко) та літературні джерела наукових та науково-практичних журналів.

Результати. Використовуючи дані наукової літератури та клінічні протоколи терапії ускладнень, що викликані демодекозом, було вивчено методи лікування (протизапальна, антипаразитарна терапія та застосування засобів, які зменшують виділення себуму), які будуть використані при розробці лікарського засобу для лікування проявів демодекозу шкіри обличчя.

Висновки. Проведені дослідження виявили актуальність створення нового лікарського засобу для терапії ускладнень, що викликані демодекозом шкіри обличчя.

КЛИНИЧЕСКИЕ ПРОЯВЛЕНИЯ ДЕМОДЕКОЗА КОЖИ ЛИЦА И МЕТОДЫ ТЕРАПИИ

Коноваленко И. С., Джамалова А.

Цель – провести анализ и обобщение данных научной литературы по этиологии, патогенезу и фармакотерапии дерматологических заболеваний, осложненных клещом–демоидом.

Материалы и методы. В качестве материалов исследования были использованы: Национальный перечень препаратов, зарегистрированных на территории Украины, Компендиум 2018 (ред. В. Н. Коваленко) и литературные источники научных и научно-практических журналов.

Результаты. Используя данные научной литературы и клинические протоколы терапии осложнений, вызванных демодекозом, было изучено методы лечения (противовоспалительная, антипаразитарная терапия и применение