MEDICAL SCIENCES

MODERN COMPREHENSIVE APPROACH IN THE TREATMENT OF ACNE AND POSTACNE

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Abstract

In recent years, with a better understanding of the pathogenesis of acne, new treatments have been developed. The availability of new treatment options that complement the existing protocol should help to successfully treat more patients with acne, ensure better tolerability and meet patient expectations. Successful treatment of acne requires careful selection of anti-acne products in accordance with the clinical picture and the individual needs of the patient.

Keywords: acne, post-acne, acne treatment

Acne (acne disease) is a chronic disease that begins with blockage of the sebaceous ducts (follicular hyperkeratosis) against the background of oily seborrhea in adolescence. Special attention should be paid to children 10-17 years old, when black dots, small "pimples" appear on the face of the nose, cheeks, chin. Many believe that it is age-old and will pass. On the contrary, stagnation of sebum in the sebaceous-hair duct is a favorable environment for the development of infection. If the procedures are not done in time and proper care is not established, an inflammatory process occurs and chronic acne develops. In recent decades, acne has a tendency to "aging" and manifests itself at any age - late acne. The disease is aggravated by excessive use of cosmetics - powders, blushes, tonal creams and irrational use of medications (cosmetic, medicinal acne). With improper and untimely treatment, post-acne elements develop at the site of inflamed elements: keloid, hypertrophic and normoatrophic scars, stagnant spots with hypo- and hyperpigmentation. That is why self-medication and violation of the regime, care and therapy proposed by the doctor are unacceptable.

Triggers for acne are: stress (75%), pregnancy (35%), premenstrual syndrome (70%), skin damage (53%), medicinal and contraceptive products (29%), cosmetics (21%), gastrointestinal pathologies intestines (3%) and others (3%).

Acne develops according to the following scheme:

- The sebaceous glands are enlarged with increased secretion of sebum, which is manifested by a greasy shine and enlarged pores.
- The upper layer of the skin thickens, blocking the exit ducts of the sebaceous glands. As a result, blackheads and millet grains are formed.
- An inflammatory reaction occurs, various purulent elements appear, red stagnant spots, hyperpigmentation.

Combing, steaming in a bath, massage, self-treatment, attempts to hide defects with the help of various cosmetics lead to the spread of acne over the entire surface of the skin.

The development of acne is facilitated by an increase in the pH of the skin to an alkaline environment, which leads to a decrease in the bactericidal properties of sebum and a sharp increase in the growth and reproduction of representatives of saprophytic and opportunistic microflora (Propionium Acnes, Staphylococcus epidermidis, S.aureus, Pityrosporum ovale). And in associations, they occur in 42%, which is one of the factors of the complex course of the disease. That is why treatment aimed at only one type of pathogen is ineffective.

The development of the disease is accompanied by the accumulation of sebum and a change in its composition, which begins to have a local irritating effect; the appearance of acutely inflamed, scaly, hyperemic spots and plaques (seborrheic dermatitis). Violation of the outflow of sebum leads to the formation of microcysts, the rupture of which causes an immune reaction. Analysis of the results of biopsies revealed that leukocytes, moving into the wall of the follicle, either destroy its epithelium, or, moving further to the surface between the wall of the follicle and the boil, form a pustule, forming a residual scar. At the same time, the inner surface of the follicle is either restored, without leading to clinical inflammation, or destroyed, which causes a focus of inflammation.

Clinically, the disease is manifested by polymorphic rashes in the form of papular and pustular elements (papular and pustular acne), milliums (millet, millium), closed and open comedones (black dot acne), follicular and perifollicular located abscesses, nodes, infiltrates and cysts (abscessing and spherical conglobate, phlegmanous acne). When abscessing acne merges and opens, fistulous tracts are formed, keloid scars are formed with inflammation and induration (keloid and induration acne), with necrotization of the elements of the rash (necrotic acne). Acne is localized more often on the face and upper body.

Etiopathogenesis of acne vulgaris is complex. The following factors play a major role in the development of the disease:

- Inactivity of the sebaceous glands
- Keratinization of the mouth and blockage of the sebaceous glands
- Activity of saprophytic skin microflora

- Inflammatory process.

In the ducts of the sebaceous glands, microcomedones are formed - sebaceous-corneal plugs, which are not clinically detected. Further, the accumulation of secretion and its pressure on the clogged follicle funnel leads to the formation of a cystic cavity in the lower part of the hair follicle funnel and the appearance of clinical signs of the disease in the form of closed comedones. The constant accumulation of sebaceous and horny masses inside the follicle and their pressure on the surrounding tissues ultimately leads to atrophy of the sebaceous gland, as well as to the expansion of the mouth of the hair follicle. This is how open comedones are formed.

According to modern ideas, bacteria are not the direct cause of the disease, they only provoke local inflammatory processes. Saprophytic microorganisms such as lipophilic fungi of the genus Pytirosporum, Staphylococcus epidermidis and Propionibacterium acnes are constantly present on the skin and hair follicles. Propionibacterium acnes - Gram-positive immobile lipophilic rods, which are facultative anaerobes, play the greatest role in the development of inflammation in acne. Clogging of the mouth of the hair follicle and accumulation of sebum inside it create prerequisites for the reproduction of these microorganisms inside the funnel of the hair follicle. The constant reproduction of P. acnes in the follicle, which is detected at the stage of microcomedones, leads to an increase in the activity of metabolic processes, and the result is the release of inflammatory mediators.

Most of the frequencies of acne diseases belong to the categories of acne comedonica and acne papulopustulosa. All other types occur much less frequently.

There are 4 degrees of severity of acne:

- One or two areas of the face are affected. Open and closed comedones are observed, with a significant preponderance of open comedones. There are isolated superficial papules and pustules.
- Several areas of the face and body are affected. A large number of open and closed comedones. Single papules and pustules.
- Against the background of open and closed comedones, a large number of deep pustules and papules are diagnosed. Widespread hyperemia of the affected areas with a pronounced inflammatory reaction. There are post-acne phenomena: scars, stagnant spots, hyperpigmentation.
- There are large (more than 5 mm in diameter) bluish-purple painful infiltrates, conglobate elements (several large nodes located next to each other, connected by fistulous passages), large cysts, which allow the formation of coarse atrophic scars.

Based on his practical experience, acne is often associated with pathology of internal organs. Problems with the stomach and intestines (ulcer, gastritis and colitis), as well as constipation lead to exacerbation of the disease, the appearance of new acne elements on the face. Acne on the face in the area of the nose, chin and cheeks can be associated with a violation of the functions of the gonads (more often in women with adnexitis). The disease is aggravated by taking hot, spicy food, alcoholic beverages. Acne appears on the back, chest, and face when there is a lack of female sex hormones estrogen in the body of women and when there is an excess of male sex hormones. Acne rash also occurs with long-term use of drugs containing iodine, bromine, corticosteroids, as well as with professional contamination of the skin, for example, resin, tar, oil, chlorine compounds, etc. The term "acne disease" appeared among specialists not so long ago. He testifies that the appearance of acne is the appearance of rashes on the skin, but also a change in the state of the entire body. Acne is also often described in the literature in athletes and bodybuilders who take anabolic drugs.

The choice of treatment method is determined by the individual characteristics of the body, including the characteristics of the structure of the skin and sebaceous glands, the function of the endocrine glands, the state of general and local cellular immunity, the presence of concomitant diseases, as well as the adverse effects of the external environment. For example, in the initial stage of the disease, when comedones with a small number of inflammatory elements prevail, in the form of nodules and pustules located on the face, in most cases, local treatment gives the expected effect. It should be emphasized that to achieve a noticeable improvement in the condition of the skin, the duration of regular therapy is at least 4-8 weeks. The reason for the majority of treatment failures is irregular use of drugs, too short a treatment period, or poor drug tolerance. It should be taken into account that at the beginning of the treatment, exacerbation of the disease is possible, which is related to the dynamics of the disease process and the mechanism of action and side effects of the use of drugs. But this should not interrupt the treatment, because the achieved temporary improvement of the condition of the skin may be replaced by a new exacerbation.

The most effective modern methods of treatment remove only the acute form of the process, reaching in the case of stable remission in 61% of patients after the end of the first course of treatment and 85% - with repeated courses, and other patients lead to the development of resistance (resistance) to therapy. Such a situation indicates a clear lack of chemotherapeutic efficacy of the ongoing treatment associated with polymicrobial infectious inflammation. The use of traditional antibiotics gives the proper effect, because they are aimed at selective interaction mostly only with individual biochemical structures of the microbe. Therefore, in acne, it is important to choose an antimicrobial agent that contains several chemically and physically compatible antiseptics, which, when combined, can mutually enhance activity and expand the spectrum of antimicrobial action.

In acne and post-acne, skin structures undergo irreversible changes, and they cannot be brought back to normal without radical dermatosurgical methods that change the architecture of skin capillaries and skin structures. You should know that laser dermabrasion during post-acne is unacceptable, because after laser treatment, an exacerbation occurs in 68% of patients 2-3 years after the operation.

The best results can be achieved only with a comprehensive approach to the problem of acne by a dermatologist, gastroenterologist and cosmetologist.

The treatment will consist of three stages, which allows you to cure any form of acne disease:

Complex sanitation of the skin with powerful antibacterial protection, which is fundamentally different from traditional cosmetic cleaning. During the first 1-5 remediation procedures, purulent inflammatory elements are allowed (for comparison: traditional treatment, including retinoids, gives a positive result only after six months to a year).

Special complex procedures aimed at normalizing the activity of the sebaceous glands and skin pH, including on reducing vascular permeability.

Procedures aimed at changing the structure of the skin, leveling the relief of the skin and removing traces of acne - elements of postacne. At the same time, mechanical rotary circular dermabrasion (method of I.B. Hlybokova) is used - without pain, swelling, with a short rehabilitation period, which allows to significantly increase the cosmetic effect.

The complex of procedures includes hardware physiotherapeutic methods of treatment: ultratonotherapy, d,arsanvalization, galvanotherapy, phonophoresis, iontophoresis, microcurrent therapy, cryotherapy, oxygen therapy, cryotherapy, phototherapy, desincrustation; mesotherapy; ozone therapy, etc. The following are used in parallel: antibiotic therapy, treatment of dysbacteriosis and associated diseases, vitamin therapy, elimination of trace element deficiency, retinoid therapy. Home care and treatment are of great importance in the treatment of acne. They are selected individually.

Methods, means and procedures are selected and performed by the doctor individually. Treatment is highly effective, economically available, can be limited to any stage (according to the capabilities and wishes of the patient) and is not limited to the time of year.

Conclusions. There are many drugs for the treatment of acne, but the most effective treatment regimen is a combination of certain drugs, selected for a particular patient.

References:

1. Simpson NB, Cunliffe WJ. Disorders of the sebaceous glands. In: Burns T, Breathnach S, Cox N, Griffiths C, editors. Rook's Text book of Dermatology. 7th ed. Vol. 43. Blackwell Science; 2004. pp. 43.1–43.75.

2. Gollnick HP, Zouboulis CC, Akamatsu H, Kurokawa I, Schulte A. Pathogenesis and pathognesis-related treatment of acne. J Dermatol. 1991;18:489–99.

3. Leyden JJ. New understanding of the pathogenesis of acne. J Am Acad Dermatol. 1995;32:515–25.

4. Plewig G, Kligman AM. Acne and Rosacea. 3rd ed. New York: Springer-Verlag; 2000.]

5. Cunliffe WJ, Gollnick HP. Acne: Diagnosis and management. 1st ed. London: Martin Dunitz Ltd; 2001.

6. Packman AM, Brown RH, Dunlap FE, Kraus SJ, Webster GF. Treatment of acne vulgaris: Combination of 3% erythromycin and 5% benzoyl peroxide in a gel compared to clindamycin phosphate lotion. Int J Dermatol. 1996;35:209–11.

7. Yang DJ, Quan LT, Hsu S. Topical antibacterial agents. In: Wolverton SE, editor. comprehensive dermatologic drug therapy. 2nd ed. Philadelphia: Saunders Elsevier; 2007. pp. 525–46.

8. Fyrand O, Jakobsen HB. Water-based versus alcohol-based benzoyl peroxide preparations in the treatment of acne vulgaris. Dermatologica. 1986;172:263–7.

9. Mills OH, Jr, Kligman AM, Pochi P, Comite H. Comparing 2.5%, 5% and 10% benzoyl peroxide on inflammatory acne vulgaris. Int J Dermatol. 1986;25:664–7.

10. Bojor RA, Cunliffe WJ, Holland KT. The short term treatment of acne vulgaris with benzoyl peroxide: Effects on the surface and follicular cutaneous microflora. Br J Dermatol. 1995;132:204–8.

11. Eady EA, Cove JH, Joanes DN, Cunliffe WJ. Topical antibiotics for the treatment of acne vulgaris: A critical evaluation of the literature on their clinical benefit and comparative efficacy. J Dermatol Treat. 1990;1:215–26.

12. Krishnan G. Comparison of two concentrations of tretinoin solution in the topical treatment of acne vulgaris. Practitioner. 1976;216:106–9.

13. Shalita A, Weiss JS, Chalker DK, Ellis CN, Greenspan A, Katz HI, et al. A comparison of the efficacy and safety of adapalene gel 0.1% and tretinoin gel 0.025% in the treatment of acne vulgaris: A multicentric trial. J Am Acad Dermatol. 1996;34:482–5.]

14. Leyden JJ, Shalita A, Thiboutot D, Washenik K, Webster G. Topical tretinoin in inflammatory acne: A retrospective, investigator-blinded, vehicle-controlled, photographic assessment. Clin Ther. 2005;27:216–24.