

Acne's causes, physiopathology, and treatment

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Introduction

When compared to disorders affecting other organs, skin illnesses are frequently overlooked or even dismissed. Acne is a skin ailment marked by red pimples on the skin, particularly on the face, caused by inflamed or irritated sebaceous glands. It is most common in teenagers but can also affect adults [1]. Acne is brought on by a number of physiological and environmental causes. Anxiety, despair, low self-esteem, frustration, and rage are common among acne sufferers. Disappointment with the therapy results is the primary cause of psychological disorders in patients. Acne has a negative impact on one's self-esteem [2].

Acne's Physiopathology and the Factors Involved

There are four key elements that contribute to the physiopathology of acne [3]:

- Inflammatory response
- Colonization with *Propionibacterium acnes*
- Increased sebum production
- Hypercornification of the pilosebaceous duct

Physiopathology of Acne

Acne is caused by a number of various reasons, all of which result in increased sebum production. As a result, dead skin cells build up within these pores, clogging them. Bacteria (particularly *Propionibacterium acnes*) infect the clogged pores, causing inflammation and various acne lesions [1]. These factors include changes in the quantity and quality of sebum during pubescence (dysseborrhea), which can be triggered by internal factors (hormonal or genetic factors) or external factors (comedogenic cosmetics, aggressive cleansers, or medications), all of which can stimulate the components linked to acne physiopathology.

Types of Acne

Inflammatory and non-inflammatory acne are two types of acne. Noninflammatory acne is characterised by comedones

exclusively, whereas inflammatory acne is characterised by comedones, pustules, papules, and nodules [3].

Acne severity is evaluated by the location of the lesion, the type and quantity of lesions developed, the appearance of scars, and other factors. Acne can be divided into the following categories depending on its severity.

Comedones, a few inflammatory lesions, or both describe mild acne. Moderate acne is distinguished by inflammatory lesions with nodules and minor scarring. Severe acne is defined by extensive lesions, nodules, or both, as well as scarring; it also includes moderate acne that hasn't cleared up after six months of treatment.

Treatment Methodology

Acne treatment normally seeks to lessen the severity of the condition and its recurrences, as well as to enhance its appearance. The treatment approach is determined by the severity of the acne, the patient's preferences, age, adherence, and response to previous treatments. Treatments for acne range from balancing androgens to reducing sebum production to preventing follicular occlusion, minimizing *P. acnes* growth, and lowering inflammation [4].

Avoiding the use of topical and systemic antibiotics, which can promote resistance to not just *P. acnes* but also other skin germs, is one of the strongest acne treatment suggestions. Under daily practise conditions, mild to moderate-severe acne can be treated with a topical combination of retinoid and benzoyl peroxide (BPO) in a set combination. This is because retinoids address keratinization abnormalities while simultaneously having a direct inflammatory action, and BPO is the most powerful antibacterial drug to date with no link to resistance formation [5].

Conclusion

The fundamental acne treatment challenges in the future will be rebalancing the natural microbiome of the skin by reestablishing the natural skin barrier, constraining the multiplication of *P. acnes* on the skin using antibacterial that do not cause obstruction, and controlling the amount and nature of sebum produced.

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