

## A Short Commentary on Causes, Physiopathology and Treatment of Acne

Christiana Williams

### INTRODUCTION

Skin diseases are often considered less important or even ignored as compared to diseases related to other organs. Acne is a skin condition characterized by red pimples on the skin, especially on the face, due to inflamed or infected sebaceous glands and prevalent chiefly among adolescents but also occurs in adults as well [1]. Acne is caused by a combination of various physiological as well as environmental factors. People suffering from acne usually exhibit psychological problems such as anxiety, depression, low self-esteem, frustration, anger. The psychological disturbances in the patients are mainly because of the disappointment with the treatment results. Acne also affects young adults between the age of 18 to 24 years [2].

### FACTORS RESPONSIBLE FOR THE PHYSIOPATHOLOGY OF ACNE

Four major factors that are responsible for the physiopathology of acne are [3]:

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

### PHYSIOPATHOLOGY OF ACNE

The outbreak of acne involves different other factors resulting in increased sebum production. As a result, dead skin cells accumulate inside these pores and clog them. Bacteria (especially *Propionibacterium acnes*) infect these clogged pores causing inflammation and different types of acne lesions [1]. These factors consist of quantitative and qualitative adjustments of sebum during pubescence (dysseborrhea), triggered by internal factors (hormonal or genetic factors) or external factors such as comedogenic cosmetics, aggressive cleansers or medications, which may stimulate the components associated with the physiopathology of acne.

### TYPES OF ACNE

Acne can be inflammatory and/or non-inflammatory. Non-inflammatory acne comprises only comedones, whereas, inflammatory acne consists of comedones, pustules, papules, with or without nodules [3].

The severity of acne can be determined according to the lesion site, type and number of lesions formed, development of scars, etc. Based on the severity, acne can be classified as:

- **Mild acne:** characterized by comedones, a few inflammatory lesions or both
- **Moderate acne:** characterized by more inflammatory lesions with nodules, mild scarring
- **Severe acne:** characterized by widespread lesions, nodules, or both along with scarring; also includes moderate acne that has not been settled with 6 months of treatment

### TREATMENT METHODOLOGY

Acne treatment usually aims to reduce severity and recurrences and also to improve appearance. The treatment methodology relies upon the severity of acne, treatment preferences, patient's age, and adherence, and reaction to the past treatments. Different acne treatments target different stages of the pathogenesis of acne-from balancing androgens to decreasing sebum production to forestalling follicular occlusion, reducing *P. acnes* proliferation, and decreasing inflammation [4].

One of the strong recommendations on acne treatment is to avoid the use of topical and systemic antibiotics as it can cause resistance to not only *P. acnes* but also of other skin microorganisms. However, moderate to moderate-severe acne can be managed with the topical combination of a retinoid and benzoyl peroxide (BPO) in a fixed combination under daily practice conditions. This is because retinoids correct the disturbances of keratinization and also have direct inflammatory effect and BPO is the strongest antimicrobial agent to date with no association with the development of resistance [5].

**Correspondence to:** Christiana Williams, E-mail: dermatolgyres@medicinejournals.com

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## CONCLUSION

Rebalancing the natural microbiome of the skin by re-establishing the natural skin barrier, constraining the multiplication of *P. acnes* on the skin using antibacterials which do not cause an obstruction and controlling the amount and nature of sebum produced will be the fundamental acne treatment challenges in the future.

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