

# Tentative New Terminology: Initial Comedonal Phase Preceding Acute Inflammatory Phase of Acne Vulgaris—Importance of Early Treatment

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## Abstract

We report a case of a 12-year-old female with closed and open comedo without inflammatory lesions at the first visit. She had been treated with topical adapalene once daily, and closed and open comedo subsided without inflammatory lesions one month after the treatment without any side effects induced by adapalene. The recurrence of comedo had not been observed afterwards. In the Japanese Dermatological Association (JDA) guidelines for the treatment of acne vulgaris, comedonal phase has not been stated. Then we propose the tentative new terminology of a comedonal phase and emphasize its importance in the early initial treatment for comedo to prevent the development of the acute inflammatory phase such as red papules and pustules and formation of acne scars.

## Keywords

Comedonal Phase, New Terminology, Early Initial Treatment

## 1. Case Report

A 12-year-old female was affected with closed and open comedones on the foreheads since a few months ago (**Figure 1**). Before the first visit, she had not been treated with any medical treatment, OTC drugs and cosmetics. At the first visit, she was diagnosed with acne vulgaris. She had been treated with topical adapalene once a day, and closed and open comedo subsided without inflammatory lesions one month after the treatment without any side effects induced by topical adapalene.



**Figure 1.** Initial comedonal phase of 12-year-old female in adolescent: closed and open comedo was observed on the forehead.

Acne begins as microcomedones that subsequently progress to closed or open comedones. They then develop into inflammatory lesions (red papules and pustules), resulting in the formation of atrophic and hypertrophic scars [1].

In the Japanese Dermatological Association (JDA) guidelines for the treatment of acne vulgaris published in 2018 [2], acne treatment is divided into the inflammatory and maintenance phases. The acute inflammatory phase is defined as predominant inflammatory acne lesions accompanied by comedones. This phase, which requires effective treatment of the inflammation, usually lasts for a maximum of 3 months. The maintenance phase follows the inflammatory phase and is mainly characterized by comedones or micro comedones that appear during and after the recession of the inflammatory acne lesions.

However, the duration of the comedonal phase (comedones without inflammatory lesions) has not been noticed in the treatment of acne vulgaris in JDA guidelines.

We agree with these two defined phases. However, we propose that the comedonal phase which exists only comedo without inflammatory lesions (**Figure 1**) precedes the acute inflammatory phase. Informed consent was obtained from the patient for reproduction of the clinical findings for publication. Acne usually begins in adolescence most frequently as comedones in the T-zone, which includes the forehead and dorsum of the nose [3]. In adult acne, inflammatory lesions are usually observed in the U-zone, the submandibular area called the face line [3].

According to JDA guidelines, acne in the acute inflammatory phase should be treated with topical benzoyl peroxide (BPO) or adapalene formulations and topical and systemic antimicrobials [2]. During the maintenance phase, patients should be treated with adapalene or BPO [2]. The formation of acne scars is the most important sequela.

Early and effective therapy is necessary to prevent acne scarring during the

acute inflammatory phase [2]. Unfortunately, we speculate that many patients with acne in the comedonal phase of adolescence have been overlooked and remain untreated. Therefore, we propose the recognition of a comedonal phase and emphasize its importance in the early initial treatment to prevent the development of the acute inflammatory phase and formation of acne scars.

The antimicrobial resistance of *Cutibacterium acnes* (*C. acnes*) is increasingly emerging in Japan [4] as well as the US and Europe [5]. Therefore, identifying strategies to prevent it is important.

We recommend that BPO and adapalene be aggressively used in the comedonal phase as soon as possible to prevent progression to the acute inflammatory phase, which results in the formation of post-inflammatory hyperpigmentation and atrophic scarring. We also recommend that topical and systemic antimicrobials be avoided in comedonal phase to prevent the development of antimicrobial resistance of *C. acnes*.

Intensive initial treatment of acne in the comedonal phase is important to prevent the development of an acute inflammatory phase and acne scarring.

Further accumulation such as case reports is necessary to confirm the clinical evidence or clinical studies that demonstrate the importance of early initial treatment for comedo in comedonal stage in adolescent. Treatment in the comedonal phase in adolescents is important for preventing the acute inflammatory phase.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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