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## Original Research Article

# Double Jeopardy-A dyadic case reports of Acne vulgaris with COVID 19 and its psychosocial turbulence

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## ABSTRACT

Acne vulgaris is among the commonest inflammatory skin diseases affecting pilosebaceous units whereas COVID 19 pandemic is taking its toll on humanity and both effecting psychological aspects in a manner that inspite of the huge number of physical recoveries a holistic rehabilitation of the sufferer is contemplated.

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## 1. Introduction

Acne is among the commonest inflammatory skin diseases affecting pilosebaceous units. It occurs primarily in puberty and affects adolescents at the age of 14-19 years. But, recent epidemiological studies have also shown its increasing incidence among adults and Adult Onset Acne or AOA has gained momentum. Clinically the disease is presented with comedones, papules, pustules, nodules and scars in some cases. Seborrhic areas like face, chest and back are most commonly affected sites. We present in our paper a detailed account of two separate cases on Acne vulgaris, Body acne followed by a brief review of literature on the wide spectrum of this common dermatological disorder. COVID-19 on the other hand shows variable effects on the different sections of society. Patients with Acne vulgaris, known psychiatric patients as well as general population showing different psychological problems associated with COVID 19.

## 2. Case 1

A 23 year old female patient presented with pustules, papules and milia in the lower third of the face, mostly

in the cheek and jawline. She complained of having these inflammatory lesions for the past 1 month. She had tried several fairness creams without any productive resolution. She gave a past medical history of acne flares in her adolescence. However she didn't give any history of PCOS or showed any signs of hirutism. She was diagnosed with Persistent Acne and was started with one month of medical therapy that included Benzoyl peroxide (5 % solution ) application on effected area 3 times daily, Doxycycline 100 mg once daily and Tretinoin gel (0.025%) application once daily application. Patient was hospitalized due to Covid 19 infection with high fever and bodyache,. But her oxygen saturation was 99%. She was having high D-dimer, ferritin, LDH level but other blood pictures were within normal limit. She received low molecular weight heparin for 7 days. Doxycycline 100mg twice daily for 5 days and Paracetamol and Ivermectin (12mg) as per protocol. After recovering, on her follow up visit a month later marked clearance of the acne lesions were observed but she started complaining about different post covid complications like amenorrhoea, bodyache and inability to concentrate.

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### 3. Case 2

A 27 year old male patient visited the tertiary care hospital with wide spread acne on his chest and back. The inflammatory lesions ranged from, papules to nodular ones. He gave no history of adolescent acne vulgaris infections. He complained of his excessive sweating in the present weather condition as he was an athlete by profession. His was then prescribed oral Isotretinoin 20 mg daily and benzoyl peroxide 2.5% as body wash.

He was asked to continue treatment for 3 months. But during this time he became asymptomatic COVID 19 positive when he came in close contact to symptomatic COVID 19 positive patient. He recovered completely without any treatment. Then he started complaining about different post covid complications but, his lesions due to acne vulgaris were markedly reduced.



**Fig. 1:** Female with grade 3 Acne vulgaris



**Fig. 2:** Male patient having body acne.

### 4. Discussion

We presented here 2 distinct cases of Acne vulgaris infection. The first one was a simple case of acne vulgaris infection in an immunocompetent, otherwise healthy woman of 23 years age. She had classical manifestations of pustules and papules in the malar area of her face and with the correct treatment the lesions of acne vulgaris resolved. In our second case report, we presented a 27 year old man with body acne.

Acne is a common skin problem that develops when your pores get clogged by oil and dead skin debris. This results in pimples, blackheads, and whiteheads, especially on the face, neck, chest, back, upper arms, and shoulders. The lesions maybe inflammatory or noninflammatory. Around 80% of adults and adolescent combined suffers from acne in their lifetime.<sup>1</sup> Acne vulgaris (AV) is a disease of the pilosebaceous unit that causes noninflammatory lesions (open and closed comedones), inflammatory lesions (papules, pustules, and nodules), and varying degrees of scarring. AV is an extremely common condition with a lifetime prevalence of approximately 85% and occurs mostly during adolescence.<sup>2</sup>

The main risk factors behind the occurrence of acne vulgaris infection includes emotional stress, excessive sweating, occlusion of skin pores by greasy products, menstrual cycles, and pregnancies. Along with these conditions with increased androgen production like PCOS, or Cushing syndrome stimulates increased sebum production and increases the propensity of Acne vulgaris in the individuals.

Certain drugs also results in acne most important of which includes corticosteroids, anticonvulsants like phenytoin, antidepressants, the antipsychotics olanzapine and lithium, and antituberculosis drugs like INH.<sup>3</sup>

Four key pathogenic processes lead to the formation of acne lesions: blockage or outlet obstruction of the pilosebaceous units, alteration of follicular keratinization that leads to comedones; increased and altered sebum production under androgen control; follicular colonization by *Propionibacterium acnes*; and complex inflammatory mechanisms that involve both innate and acquired immunity.<sup>2</sup> The inflammatory lesions results when the sebum leaks from the comedones into dermis, and influx of proinflammatory cells and release of inflammatory cytokines in response to the *Propionibacterium acnes* that proliferates in the clogged up follicle. Androgens trigger the sebaceous glands for more sebum secretions by acting through the androgen receptors present.

Corticosteroids interestingly increase toll-like receptor 2 expressions in human keratinocytes which are stimulated by *Propionibacterium acnes* or proinflammatory cytokines and leads to acne.<sup>4</sup>

The manifestations of acne vulgaris ranges vastly from minor comedones to cystic lesions depending on the severity

of the inflammation. Briefly the various types of eruptions are as follows:

1. Whiteheads (closed plugged pores).
2. Blackheads (open plugged pores).
3. Small red, tender bumps (papules).
4. Pimples (pustules), which are papules with pus at their tips.
5. Large, solid, painful lumps beneath the surface of the skin (nodules).
6. Painful, pus-filled lumps beneath the surface of the skin (cystic lesions).

These types of lesions are graded categorically based on their number and extend using various scales. The Global Acne Grading System (GAGS) provides one such approach to determine the severity of acne.<sup>5</sup>

The pharmacological options for management of acne includes oral formulations like isotretinoin, doxycycline, azithromycin, topical formulations like adapalene, tretinoin, clindamycin, benzoyl peroxide, nadifloxacin, and different fixed dose combinations. These drugs are used in various concentrations and doses depending on the severity of the infection.

Thus acne vulgaris, a common dermatological disorder has various associated psychosocial impacts on the society. Its vast prevalence necessitates its proper treatment with reduced recurrence and flare ups and so a clean hygienic lifestyle and adherence to treatment regimens serves the basis of curing this disease.

COVID-19 on the other hand shows variable effects on the different sections of society. Not only patients with Acne vulgaris, known psychiatric patients apart from general adult population.<sup>6</sup>

The manifestations may range from panic, anxiety, obsessive behavior, hoarding, paranoia, depression even psychosis and post traumatic stress disorder (PTSD).<sup>7</sup> The WHO has released advisories to cope with the psychosocial epidemic which goes hand in hand with the viral pandemic.

The mainstay of management is an empathetic counseling support to patients and families, along with a healthy lifestyle modification advice involving diet plans, exercise and avoidance of substance dependence.<sup>8,9</sup>

## 5. Conclusion

A comprehensive holistic approach is necessary to deal with this dual problem. Apart from medical therapy, diet and lifestyle advice, counseling, and rehabilitation socially

should become part and parcel of management of Acne vulgaris with COVID 19.

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## 7. Conflict of Interest

The authors declare they have no conflict of interest.

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