

# COVID-19 Infection Cause Moderate-Severe Psoriasis Flare Up

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**Abstract** — COVID-19 virus pandemic is reaching its peak in Europe after first reported at Wuhan province in China about 6 months ago. It has been associated with many different presentations, signs, and symptoms affecting the skin. However, this report is first to confirm the direct link between the virus and flare up of moderate-severe psoriasis. Further observations will be needed in order to make judgment on the type, severity and the measures to take in order to combat the escalation of severity and course of psoriasis and possibly psoriatic arthritis.

**Index Terms** — COVID-19, Psoriasis, viral infection.

## I. INTRODUCTION

COVID-19 is a newly discovered global pandemic first identified in the Wuhan province in China in November 2019. It is caused by SARS-COV-2 coronavirus, which previously identified to associate with animals not humans. It affects mainly adults targeting the respiratory track causing symptoms like sneezing, cough, shortness of breath, increase in temperature leading to pneumonia, severe acute respiratory syndrome and multi-organ failures and subsequently death in some vulnerable patients. Recent reports showed that till May 22nd it affected about 5.2 million worldwide with an estimated death of 335,000 [1]. The endemic is already causing a catastrophic effect on the world economies yet alone further fear growing for the effect the general nation's health, and psycho-social impact on different nations.

Psoriasis is a chronic, non-infectious, inflammatory skin disease of unknown aetiology. It can affect 0.91% of the USA population while it is 8.5% in Norway [2]. Many factors can contribute in provoking and flare up of the condition eg infection [3], genetics and stress [4]. There are many sub-type of psoriasis most common are the Plaque and guttate types.

It is thought to be an immune-mediated inflammatory disease with an involvement of T-lymphocytes, macrophages, and neutrophils, an inflammatory process leading to the proliferation of the keratinocytes cells. This can be influenced by the Cytokines [5], [6], and possible role for Neuropeptides [7], [8].

Infection can cause flare up of psoriasis. Guttate psoriasis is commonly provoked by group A Streptococci, group C and G also provoke the disease [9], [10]. Other virus Staphylococcus aureus was found to be significantly higher

colonisation in psoriatic skin [11]. On the other hand, fungal infection was also found to contribute to flare up of psoriasis in particular Malassezia [12] and Candida Albicans [13]. Furthermore, families of Human endogenous retroviruses (HERVs) have been found to present in psoriatic plaques (lesion), skin when compared to non-psoriatic normal skin (non-lesion) [14]. On the other hand, Psoriasis does not appear to be associated with an increased risk of hepatitis B, hepatitis C, or human immunodeficiency virus (HIV) infection [15].

In the current climate of the endemic COVID-19, one of my patients a fit male adult 44 years with almost clear and stable psoriasis caught the COVID-19 to become extremely unwell with severe symptoms at the peak for 4 days. During this period, he developed an accelerated and fast recurrence of widespread psoriasis plaques (Fig. 1).



a)



b)

Fig. 1. Psoriasis plaques.

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## II. DISCUSSION

As we are still learning more about the COVID-19 virus, however, it seems that it has a direct effect in the flare up of psoriasis, which is a T-cell mediated disease. The direct effect of COVID-19 on T-cell immunity may lead to the stimulation of keratinocyte proliferation and modulate various immune functions. Reactions leading to the flare up of psoriasis were fast and within a short period. It will be interesting to study further the link between the COVID-19 virus infections and flare up or even provoking psoriasis. Furthermore, the type of psoriasis it can exacerbate and the response of psoriasis to the antiviral treatment yet to be discovered. Hydroxychloroquine is a treatment which is currently trialed in the treatment of COVID-19. This medication is reported to exacerbate psoriasis [16]. The patient in this report has not received this medication. It is also worth to observe the behavior and response of psoriasis toward the antiviral medication given to COVID-19 patients in the future. A possible similar scenario is like those psoriatic patients who are infected with AIDS. Psoriasis then resolved once receiving the anti-viral therapy [17].

## III. CONCLUSION

COVID-19 infection can provoke psoriasis plaques. Further observations needed on cohort of patients to reach a conclusion about severity, behaviour, and responses to treatment of psoriasis and the virus.

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