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ORIGINAL ARTICLE

Psoriasis and Covid-19: A Precise Survey and Metaanalysis

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ABSTRACT

Introduction: Psoriasis influences around 2% of the grown-up populace. Systemic treatments for direct to serious psoriasis have been connected to an expanded chance of upper respiratory viral tract disease. It is undetermined in the event that having psoriasis itself, having comorbidities related with psoriasis, or efficient medications for psoriasis clarify this relationship with COVID-19. Method: This precise survey incorporates looking the Google Scholar, PubMed and Web of Science databases utilizing the catchphrases psoriasis, coronavirus and COVID-19. The look was supplemented by manual looking of reference records of included articles. The look was upgraded in December 2019. Result: the current writing may give a few clues for security contemplations. Ordinary immunosuppressive treatments like anti-tumor corruption and cyclosporine and methotrexate calculate specialists ought to not be favored due to expanded hazard of contamination, particularly in regions of high-risk. Due to the side impact of hypertension, which has been detailed to be related with defenselessness to serious COVID-19 utilize of cyclosporine might posture extra hazard. Conclusion: the present writing has given no final prove that increment in biologics the chance of COVID-19, extraction of these operators ought to be saved with COVID-19 side effects for patients. The approach of treatment ought to be modified, seeing the points of interest and drawbacks for each case independently.

Keywords: Psoriasis, COVID-19, Coronavirus

INTRODUCTION

According to the World Health Organization (WHO), In December 2019, a previously unknown coronavirus identified as extreme intense respiratory disease was discovered in Wuhan, China, named as coronavirus-2 (SARS-CoV-2) causing viral pneumonia. [1] The WHO announced on 11 Walk 2020 that the worldwide plague of Coronavirus illness 2019 (COVID-19) contamination was spreading; this was also the date on which the Turkish Ministry of Health confirmed the first instance of COVID-19 sickness. (1), (2), (3). On Walk 2020, the COVID-19 outbreak was proclaimed by the World Health Organization, which claimed thousands of lives, to be widespread. [4] The epidemic has been connected to the advancement of a number of disorders, including psoriasis, and psoriasis is not immune to its effects. (5) and (6) a chronic inflammatory disease, Psoriasis, with a recurrence prevalence of 2% to 3% worldwide. Patients with psoriasis over 65, as well as those on normal immunosuppressive regimens and biologic experts, are more likely to acquire intractable illnesses [6, 7]. The other purpose was to use COVID-19 to compare rates between individuals who received immunosuppressive or organic medication with those who did not.

MATERIAL AND METHODS

Psoriasis, coronavirus, and COVID-19 were all searched in Google Scholar, PubMed, and Web of Science for this study's metaanalysis. The author reviews three articles after finishing the final screening. The articles are summarised in Table 1.

The Affect of Widespread on the Course of Psoriasis: Access to healthcare services was restricted for patients with psoriasis in a number of nations. Drugs for selected patients were saved by several hospitals. [3] The number of cases of psoriasis were increased since dermatology care administrations were unavailable to those who needed it the most. Several doctors issued "stay at home" orders in attempt to prevent the illness from spreading, which resulted in fewer patients needing outpatient care. [7] An enthusiastic stretch is another number that might lead to the beginning and worsening of psoriasis.

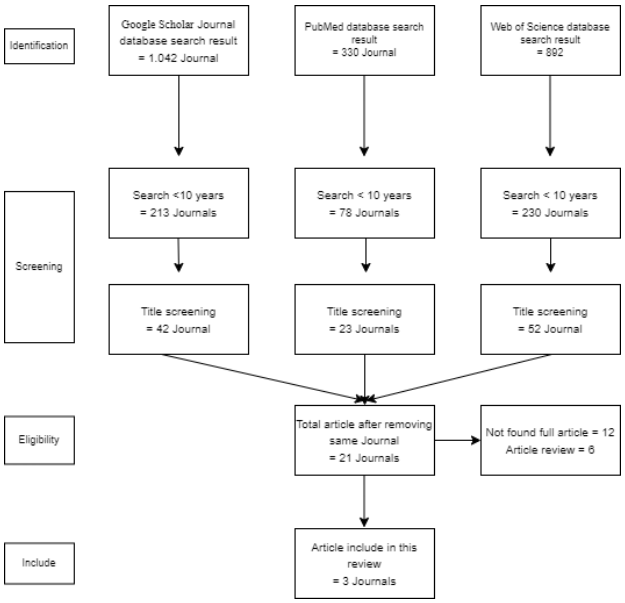

Diagram 1: Flow Chart for Screening Systematic Review

According to Kutlu and Metin, the COVID-19-induced surge in psoriasis cases will lead to an increase in

dermatological consultations. [9] 43.7 percent of 926 COVID-19 patients reported moderate-to-severe reduction in psoriasis severity following a subsequent web-based evaluation of the association of open-air movement restriction and pay insecurity with patient-reported results. It was discovered that open-air action confinement was strongly associated to psoriasis, strain, and a sense of discontent and discouragement. Anxiety and melancholy were found to be associated with psoriasis and stretch marks as well. [10] Excessive cytokine production may cause hyperinflammation in patients with COVID-19. Irritation biomarkers such ferritin and C-reactive protein were discovered to be considerably higher in those with COVID-19. [11] Psoriasis sufferers who took COVID 19 saw their condition improve, according to Ozaras et al. According to the creators, COVID 19's hyperinflammation condition may aggravate psoriasis. [12]

Table 1: Summarize Association Psoriasis and Covid-19

Author	Origin	Method	Period	Result	Outcome
Ozaras R	Infection Department, Medilife Hospital, Istanbul, Turkey	Case report	2020	Psoriasis is an immune-mediated hereditary skin malady. It is set up than different variables can trigger psoriasis in hereditarily inclined people or worsen the mala dy when its in remission.	Covid-19 patients may show highlights of hyperinflammation. Biomarkers of aggravation (CRP, ferritin), cytokines, cardiac and muscle harm, liver and kidney work, and coagulation parameters are altogether hoisted in patients with extreme Covid-19.
Ömer Kutlu	Department of Dermatology and Venereology, School of Medicine, U°ak University, U°ak, Turkey.	Case report	2020	A 71-year-old lady with no skin injuries was conceded to the widespread clinic with the conclusion of COVID-19. The understanding had a history of psoriasis that has been enacted sometimes since childhood. The understanding was begun orally oseltamivir 2 ×75 mg and hydroxychloroquine on 2 × 400 mg on the primary day at that point 2 ×200 mg. On the fourth day of treatment, the understanding had an worsening of silver-scaled psoriatic plaques spread rapidly all over the body isolated from the encompassing tissue with sharp borders. This is often the primary case of compounding of psoriasis amid COVID-19 disease in a understanding accepting this quiet. At long last, contaminations are known to trigger psoriasis, particularly the pustular form.	The worsening of psoriasis in this understanding can be clarified by a few conditions. To begin with, it is well known that hydroxychloroquine is an inhibitor of the epidermal trans-glutaminase, cause to the collection of the epidermal cells. In expansion, hydroxychloroquine advances IL-17 generation through p38-dependent IL-23 discharge coming about in keratinocyte development and differentiation. In this manner, hydroxychloroquine treatment, which was begun as a tall dosage on the primary day, perhaps the most calculate that worsens psoriasis in this understanding. To date, we did not discover any reports that oseltamivir may influence psoriasis. To be beneath quarantine and learn the conclusion of COVID-19, which could be a deadly malady in more seasoned patients may have contributed to the activating of psoriasis by expanding a push burden in this quiet. At long last, contaminations are known to trigger psoriasis, particularly the pustular form.
Ayse Serap Karadag	Department of Dermatology, Istanbul Medeniyet University, Faculty of Medicine, Goztepe Research and Training Hospital, Istanbul, Turkey.	Literature Review	2020	Immunosuppressive and immunomodulatory treatments are i mperative in dermatology, but signs are impacted by SARS-CoV-2. We are going center on skin disarranges such as immune system connective tissue disarranges, neutrophilic dermatoses, and vasculitis. Immunomodulators such as colchicine and antimalarials can effortlessly be favored taking their beneficial effects on COVID-19 into thought additionally given their wide range of activity. Among the ordinary treatments, methotrexate, azathioprine, and mycophenolate mofetil increment the chance of contamination, and in this way their utilize is prescribed as it were when essential and at moo dosages.	The disease dangers postured by the medicines we utilize would be directing for us. Treatment rules have been distributed for psoriasis, pemphigus and atopic dermatitis, in any case more prove is required in regard of seldom watched dermatomyositis, lupus erythematosus, scleroderma, neutrophilic dermatoses and vasculitis. Colchicine and antimalarials may have advantageous impacts on COVID-19; these drugs can be effortlessly favored over others due to their wide spectrums of activity. Methotrexate, azathioprine, and mycophenolate mofetil from among the routine medicines may increment the hazard of contamination. On the other hand, utilize of cyclosporine does not appear to be appropriate because it may lead to hypertension, which inclines the patients to COVID-19.

Management Therapy of Psoriasis within the Period of COVID-19: No higher risk was seen for patients on acitretin for viral or respiratory infections in their group, according to Dommasch and colleagues. [20] It has been suggested that the human herpes virus may be inhibited by the use of retinoids. [21] Cyclosporine and methotrexate have been related to a higher risk of infection. Methotrexate-treated psoriasis patients have an estimated recurrence of pneumonia of 0.8%. [22] In a sense, cyclosporine elevates the chance of acquiring an infection of the respiratory tract. People are at higher risk of developing a severe COVID-19 infection with high blood pressure, as should be emphasised. [23] Cyclosporine significantly inhibits the reproduction of the MERS-coronavirus in vitro, but its effects on the human body remain unknown. [24]

Psoriasis Management Therapy During the COVID-19 Period: It has been cut down to the participation of the persistent and the treating physician, taking into consideration the advantages and disadvantages of each condition. [Page 25 and 26]

Psoriasis and Anti-IL Therapies: Immune-mediated processes are decreased by biologics, such as cytokines. Several manufacturers have not suggested the discontinuation of tumour corruption figure alpha (TNF) inhibitors and anti-IL biologics due to "possible moderate risk" in the event of mild viral symptoms. [27] Cutaneous disorders in patient's places with great disease frequency should avoid TNF inhibitors, according to other investigators, who also recommend quitting all natural specialists in the case of a COVID-19 instance. [28]

A significant increase was not observed in the risk of actual disease when these biologic systemic medicines were put side-by-side with nonbiologic systemic medications or methotrexate on its own. [29] No substantial difference was identified between biologics and other systemic medications when it came to a patient's risk of infection. [30] 9 out of 27 people with psoriasis who had been taking biologics saw their condition improve when they stopped taking their medication. The 488 individuals who survived treatment with COVID-19 had no COVID-19-related side effects, demonstrating that biologics are safe for psoriasis sufferers. [31] In a cross-sectional, questionnaire-based study an investigation by the creators discovered that COVID-19 information prevents discontinuation of biologics. According to the findings of the study's authors, COVID-19 should be informed by skin doctors to patients. [32]

Twenty-three psoriatic individuals were found to have COVID-19 side effects but refused to discontinue taking their biologics, researchers found. Patients who continued to receive medicine did not show signs of worsening suspected COVID-19 symptoms, according to the study. [33] Guselkumab was shown to have an extreme type of COVID-19 in a case study of four COVID-19 patients with psoriasis on natural medicines, according to the researchers. Another patient, who was taking ustekinumab, an IL-12/23 inhibitor, appeared to be exhibiting more subtle signs. In the other two cases, there were no indicators. According to the creators, natural remedies might play a role in the initiation and progress of infection. [34] According to Benhadeu and colleagues' study, however, patients who had had guselkumab injections for their psoriasis saw a progression of COVID-19 side effects. [35] Psoriasis patient who was using the IL-23 inhibitor guselkumab developed COVID-19, according to Messina et al. [36] The IL-17 inhibitor ixekizumab was administered to Balestri et al., who documented who became infected. After contact with a COVID-positive persistent, the quiet tested positive for SARS-CoV-2. Despite the fact that he followed the prescribed treatment regimen exactly, the patient reported no signs or symptoms of the persisting condition. [37] Infection with COVID-19 may benefit from the inhibition of the IL-17/23 pathway, hence ixekizumab is being tested as a treatment. [36] In a research having 1193 patients of psoriasis who were taking biologics and tiny particles, the researchers discovered that those who tested positive for COVID-19 while using biologics were more likely to be

hospitalised. 38] In a multicenter analysis of 206 psoriasis patients taking biologics, the researchers found no evidence of increase in the risk of hospitalisation or death associated with the use of COVID-19. [39] There has been no solid proof that natural experts increase the chance of COVID-19 in the current writing. Preventive therapy withdrawal would be avoided and saved for COVID-19 indications in patients in this way. Patients who have had contact with a confirmed case of COVID-19 may also be advised to stop taking biologics. Unnecessary biologic withdrawal can result in psoriasis worsening, increased disease burden, poor life quality, and higher costs of healthcare. COVID-19 did not appear to cause an increase in hospitalization or death in 980 persons with psoriasis who were using biologics. [40] Finally, researchers found no significant recurrence of COVID-19 or related symptoms in a telephone consultation study of 168 persons with psoriasis who were using biologics. [41]

CONCLUSION

A range of illnesses, including psoriasis, have been made worse as a result of the widespread usage of COVID 19. Psoriasis exacerbations were triggered by patients' incapacity to access adequate healthcare administrations and their heavy burden of responsibility. Psoriasis patients need to be assessed thoroughly, and we feel that elective healthcare devices like phone interviews and teledermatology should be available when appropriate. Psychosocial support for patients and their families may also help slow the advancement of the condition. According to the author, TNF inhibitors, Methotrexate and cyclosporine should be avoided in high-risk areas. Patients who meet the criteria for COVID-19 should only see these specialists due to the lack of proof that enhancement in the risk of COVID-19 is due to biologics.

REFERENCES

1. . Kizilyel O, Akdeniz N, Metin MS, Elmas OF. Investigation of oxidant and antioxidant levels in patients with psoriasis. Turk J Med Sci. 2019; 49(4): 1085-1088.
2. Gran F, Kerstan A, Serfling E, Goebeler M, Muhammad K. Current developments in the immunology of psoriasis. Yale J Biol Med. 2020; 93(1): 97- 110.
3. Atzori L, Mugheddu C, Addis G, et al. Psoriasis health care in the time of the coronavirus pandemic: insights from dedicated centers in Sardinia (Italy). J Eur Acad Dermatol Venereol. 2020; 34(6): e247- e248
4. World Health Organization Naming the coronavirus disease (covid-19) and the virus that causes it.
5. Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. JAMA. 2020; 323(13): 1239- 1242.
6. Abdelmaksoud A, Goldust M, Vestita M. Comment on "COVID-19 and psoriasis: Is it time to limit treatment with immunosuppressants? A call for action". Dermatol Ther. 2020;e13360. 33(4).
7. Ebrahimi A, Sayad B, Rahimi Z. COVID-19 and psoriasis: biologic treatment and challenges. J Dermatolog Treat. 2020; 1- 5.
8. Sathyanarayana Rao TS, Basavaraj KH, Das K. Psychosomatic paradigms in psoriasis: psoriasis, stress and mental health. Indian J Psychiatry. 2013; 55(4): 313- 315.
9. Kutlu Ö, Metin A. Dermatological diseases presented before COVID-19: are patients with psoriasis and superficial fungal infections more vulnerable to the COVID-19? Dermatol Ther. 2020;e13509
10. Kuang Y, Shen M, Wang Q, et al. Association of outdoor activity restriction and income loss with patient-reported outcomes of psoriasis during the COVID-19 pandemic: a web-based survey. J Am Acad Dermatol. 2020;S0190-9622(20)30846-
11. Henry BM, de Oliveira MHS, Benoit S, Plebani M, Lippi G. Hematologic, biochemical and immune biomarker abnormalities associated with severe illness and mortality in coronavirus disease 2019 (COVID-19): a meta-analysis. Clin Chem Lab Med. 2020; 58: 1021- 1028.
12. Ozaras R, Berk A, Ucar DH, Duman H, Kaya F, Mutlu H. Covid-19 and exacerbation of psoriasis. Dermatol
13. Balak DM, Hajdarbegovic E. Drug-induced psoriasis: clinical perspectives. Psoriasis (Auckl). 2017; 7: 87- 94.
14. U.S. Food and Drug Administration; 2020 https://www.fda.gov/media/136534/download. Accessed April 2, 2020.Google Scholar
15. Said A, Bock S, Lajqi T, Muller G, Weindl G. Chloroquine promotes IL-17 production by CD4+ T cells via p38-dependent IL-23 release by monocyte-derived Langerhans-like cells. J Immunol. 2014; 193(12): 6135- 6143.
16. Sachdeva M, Mufti A, Maliyar K, Lytvyn Y, Yeung J. Hydroxychloroquine effects on psoriasis: a systematic review and a cautionary note for COVID-19 treatment. J Am Acad Dermatol. 2020;S0190-9622(20)30942-7.
17. Megarbane B, Scherrmann JM. Hydroxychloroquine and azithromycin to treat patients with COVID-19: both friends and foes? J Clin Pharmacol. 2020; 60: 808- 814.
18. Saxena VN, Dogra J. Long-term oral azithromycin in chronic plaque psoriasis: a controlled trial. Eur J Dermatol. 2010; 20(3): 329- 333.
19. Huang SW, Chen YJ, Wang ST, et al. Azithromycin impairs TLR7 signaling in dendritic cells and improves the severity of imiquimod-induced psoriasis-like skin inflammation in mice. J Dermatol Sci. 2016; 84(1): 59- 70.
20. Dommasch ED, Kim SC, Lee MP, Gagne JJ. Risk of serious infection in patients receiving systemic medications for the treatment of psoriasis. JAMA Dermatol. 2019; 155: 1142.
21. Caselli E, Galvan M, Santoni F, et al. Retinoic acid analogues inhibit human herpesvirus 8 replication. Antivir Ther. 2008; 13(2): 199- 209.
22. West J, Ogston S, Foerster J. Safety and efficacy of methotrexate in psoriasis: a meta-analysis of published trials. PLoS One. 2016; 11(5):e0153740.
23. Karadag AS, Aslan Kayiran M, Lotti T, Wollina U. Immunosuppressive and immunomodulator therapy for rare or uncommon skin disorders in pandemic days. Dermatol Ther. 2020;e13686
24. de Wilde AH, Raj VS, Oudshoorn D, et al. MERS-coronavirus replication induces severe in vitro cytopathology and is strongly inhibited by cyclosporin A or interferon-alpha treatment. J Gen Virol. 2013; 94(8): 1749- 1760.
25. American Academy of Dermatology Association. Managing your practice through the COVID-19 outbreak. https://www.aad.org/member/practice/managing/coronavirus. Accessed May 27, 2020. Google Scholar
26. International Psoriasis Council. Statement on the coronavirus (COVID-19) outbreak. https://www.psoriasiscouncil.org/blog/Statement-on-COVID-

19-and-Psoriasis.htm. Accessed May 27, 2020. Google Scholar
27. Price KN, Frew JW, Hsiao JL, Shi VY. COVID-19 and immunomodulator/immunosuppressant use in dermatology. J Am Acad Dermatol. 2020; 82(5): e173- e175.
28. Conforti C, Giuffrida R, Dianzani C, Di Meo N, Zalaudek I. COVID-19 and psoriasis: is it time to limit treatment with immunosuppressants? A call for action. Dermatol Ther. 2020;e13298.
29. Yiu ZZN, Smith CH, Ashcroft DM, et al. Risk of serious infection in patients with psoriasis receiving biologic therapies: a prospective cohort study from the British Association of Dermatologists Biologic Interventions Register (BADBIR). J Invest Dermatol. 2018; 138(3): 534- 541.
30. Kalb RE, Fiorentino DF, Lebwohl MG, et al. Risk of serious infection with biologic and systemic treatment of psoriasis: results from the Psoriasis Longitudinal Assessment and Registry (PSOLAR). JAMA Dermatol. 2015; 151(9): 961- 969.
31. Burlando M, Carmisciano L, Cozzani E, Parodi A. A survey of psoriasis patients on biologics during COVID-19: a single Centre experience. J Dermatolog Treat. 2020; 1.
32. Bragazzi NL, Riccò M, Pacifico A, et al. COVID-19 knowledge prevents biologics discontinuation: data from an Italian multi-center survey during RED-ZONE declaration. Dermatol Ther. 2020;e13508.
33. Carugno A, Gambini DM, Raponi F, et al. COVID-19 and biologics for psoriasis: a high-epidemic area experience - Bergamo, Lombardy, Italy. J Am Acad Dermatol. 2020; 83: 292- 294.
34. Conti A, Lasagni C, Bigi L, Pellacani G. Evolution of COVID-19 infection in 4 psoriatic patients treated with biological drugs. J Eur Acad Dermatol Venereol. 2020.
35. Benhadou F, Del Marmol V. Improvement of SARS-CoV2 symptoms following Guselkumab injection in a psoriatic patient. J Eur Acad Dermatol Venereol. 2020. https://doi.org/10.1111/jdv.16590 [published online ahead of print, 2020 May 7]. Wiley Online LibraryWeb of Science®Google Scholar
36. Messina F, Piaserico S. SARS-CoV-2 infection in a psoriatic patient treated with IL-23 inhibitor. J Eur Acad Dermatol Venereol. 2020; 34(6): e254- e255.
37. Balestri R, Rech G, Girardelli CR. SARS-CoV-2 infection in a psoriatic patient treated with IL-17 inhibitor. J Eur Acad Dermatol Venereol. 2020.
38. Damiani G, Pacifico A, Bragazzi NL, Malagoli P. Biologics increase the risk of SARS-CoV-2 infection and hospitalization, but not ICU admission and death: real-life data from a large cohort during red-zone declaration. Dermatol Ther. 2020;e13475
39. Gisondi P, Facheris P, Dapavo P, et al. The impact of COVID-19 pandemic on patients with chronic plaque psoriasis being treated with biologic therapy: the northern Italy experience. Br J Dermatol. 2020.
40. Gisondi P, Zaza G, Del Giglio M, Rossi M, Iacono V, Girolomoni G. Risk of hospitalization and death from COVID-19 infection in patients with chronic plaque psoriasis receiving a biologic treatment and renal transplant recipients in maintenance immunosuppressive treatment. J Am Acad Dermatol. 2020; 83: 285- 287
41. Megna M, Ruggiero A, Marasca C, Fabbrocini G. Biologics for psoriasis patients in the COVID-19 era: more evidence, less fears. J Dermatolog Treat. 2020; 31(4): 328- 329.