CASE REPORT

Erythrodermic Psoriasis and Hepatitis C Infection Treated with Pegylated Interferon and Anti-TNFα (Etanercept) Therapy

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Abstract

Treatment of psoriasis and its variants with concomitant hepatitis C virus (HCV) infection is complex. The treatment options are limited because the immunosuppressive drugs used for managing severe psoriasis are mostly associated with end-organ damage particularly hepatotoxicity. On the other hand, Interferon therapy has the potential to exacerbate psoriasis and psoriatic arthropathy. There is emerging data regarding the use of etanercept, a TNFα inhibitor in such cases. Though its cost and availability limits its use; but when combined with Interferon therapy and ribavirin for HCV, it has shown good results. Here, we report a case of 28-year male, suffering from erythrodermic psoriasis with arthropathy and concomitant HCV infection, who was successfully treated with etanercept and pegylated interferon and ribavirin. Pegylated interferon was given for 6 months and etanercept for 8 months. At the end of the therapy, not only the patient's polymervese chain reaction (PCR) for HCV became undetectable, but his erytherodermic state also improved.

Key Words: *Psoriasis. Erythrodermic psoriasis. Psoriatic arthropathy. Hepatitis-C virus infection. Etanercept.*

INTRODUCTION

Psoriasis is a chronic disfiguring skin condition. It has multiple variants; among which, erythrodermic variant is related to most of the metabolic complications as well as mortality.[1] Pakistan is among the countries with highest burden of hepatitis C virus (HCV) because of its chronicity.[2] This has led to a challenging scenario for dermatologists as psoriasis with concomitant infection with HCV is increasing. The treatment of psoriasis and its variants is mainly based on immunosuppressive drugs in severe cases, which in most of the cases are hepatotoxic leading to end organ damage. On the other hand, interferon therapy for HCV is associated with exacerbation of psoriasis. In such cases, TNFα inhibitors like etanercept have shown promising results when given in combination with interferon therapy.

CASE REPORT

A 28-year male, clinically diagnosed case of erythrodermic psoriasis and psoriatic arthropathy since childhood, presented to our ward in January 2013 with a relapse of severe erythroderma (Figure 1), joint pains and high grade fever (102°F). He had a history of multiple admissions in different hospitals during the past 10 years where he was advised topical and systemic immunosuppressive agents resulting in mild relief only. His initial laboratory investigation including complete blood count (CBC), blood sugar, liver and renal function tests, urinalysis, cultures and chest radiographs, were within normal limits except for a positive HCV serology on ICT and ELISA. PCR showed significant titers and a genotype type 3. Besides the conventional therapy for erythroderma, we started him on oral retinoid therapy, which let to mild improvement in skin symptoms, while joint symptoms remained the same. A decision to start biologic therapy TNFα inhibitors, such as etanercept concomitant with interferon and ribavirin was made at this moment diseases. Etanercept was started initially at a dose of 50 mg, subcutaneous (s/c) injections twice weekly for 12 weeks. After 15 days of etanercept therapy, on improvement of his erythroderma and joint

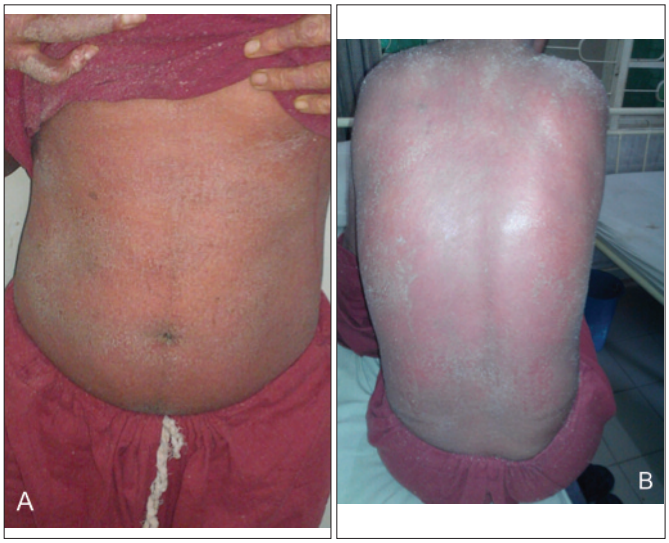

Figure 1: Erythroderma before treatment. **(A)** Front side. **(B)** Back side.

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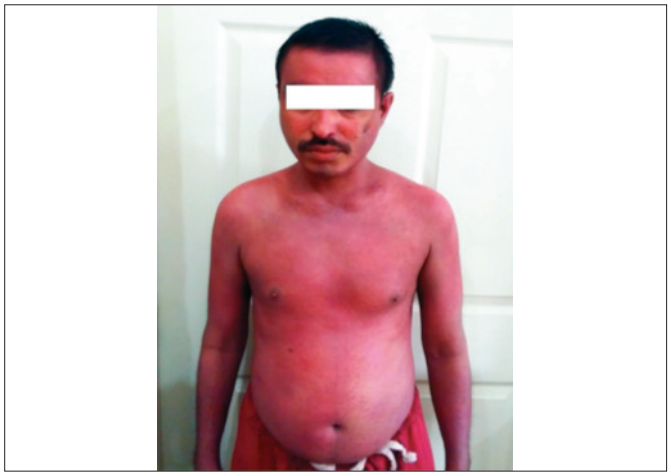

Figure 2: Improvement of skin condition after treatment.

pains, injection α-interferon 1.2 million units s/c thrice weekly along with tablet ribavirin were added. Unfortunately, just after few doses of the interferon therapy, his erythroderma again started getting worse for which he was shifted on pegylated interferon once weekly dosage with ribavirin while etanercept was continued at the same doses. After 1 week, erythroderma and joint pain settled to great extent (Figure 2). Repeat PCR after 12 weeks of pegylated interferon therapy turned out to be negative, but the therapy was continued for 3 more months as advised by the hepatology clinic. Etanercept was continued for 5 additional months, but in a reduced dose of 50 mg once weekly.

During these 8 months of therapy for erythroderma and HCV infection, all routine laboratory tests of the patient remained normal. No serious complications were noted except for 2 episodes of localized folliculitis and furunculosis and a single episode of upper respiratory tract infection that responded to antibiotics. Patient is still in follow-up with the dermatology department and hepatitis clinic; his PCR repeated 3 months after completion of therapy was negative.

DISCUSSION

Psoriasis is a chronic disabling disease with a relapsing course affecting skin and joints.[1] Prevalence of psoriasis varies between 0.09%[3] and 11.4%.[4] In most developed countries, prevalence is between 1.5% and 5%.[5] Besides the classical plaque type, its morphology can range from guttate to pustular psoriasis and generalized erythema and scaling (erythrodermic psoriasis), which is a rare but the most severe type.[6] Erythroderma may impair thermoregulatory capacity of the skin, leading to hypothermia, high output cardiac failure, and metabolic changes including hypoalbuminaemia, and anaemia due to loss of iron, vitamin B12, and folate.

Worldwide, 2.2% of the population has HCV infection. It has become a major health issue in developing countries, including Pakistan that has the second highest prevalence rate of HCV ranging from 4.5% to 8%.[2] HCV-related liver disease can progress in an insidious manner over several decades. The advanced forms of the disease are liver cirrhosis and hepato-cellular carcinoma.[7]

Multiple studies have noted an association between HCV infection and psoriasis, but it is not known whether psoriasis is a result of treatment modalities for HCV or a result of HCV alone.[8,9] Beside that, systemic therapies available for psoriasis, which cannot be treated with conservative options, such as topical agents and/or phototherapy, with the exception of acitretin, can not only worsen or reactivate a chronic infection like HCV but can also add on to the target organ damage specially liver; thus increasing the risk of worsening an already compromised liver as a consequence of HCV infection. This fact has made the treatment of patients with psoriasis and concomitant HCV infection challenging.

Biologic agents have the advantage of less toxicity and end-organ damage.[10] There are observations indicating the safe use of TNFα inhibitors (etanercept, adalimumab, infliximab) in patients with psoriasis (particularly erythrodermic variety),[11,12] and concomitant HCV infection.[13-16]

Even though new interferon-free direct acting agents (DAA) are available for the treatment of chronic HCV, but the access to these is limited because of high costs. Thus, treatment of chronic HCV with peg-INF-α is still considered in such cases.

In this case, patient presented with erythrodermic variety of psoriasis along with HCV infection, which is a challenging scenario for a dermatologist to manage. A combination therapy of TNFα inhibitor, etanercept, along with pegylated interferon and ribavirin resulted in adequate control of both the diseases in this case. Etanercept and other biologic agents are emerging drugs in the field of dermatology due to their safety profile and therapeutic effects, but their cost and availability hinders their use in a country like ours where health resources are limited.

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