A CASE STUDY ON LICHEN PLANUS WITH METHOTREXATE TOXICITY

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ABSTRACT:

Lichen planus, originating from the Greek term "leichen" signifying "tree moss," and the Latin term "planus" indicating "flat," distinctively characterizes the smooth surface of the cutaneous lesions.[1]A 47-year-old male patient presented to the dermatology outpatient department with a 15-day history of pruritic skin lesions across his body & he was diagnosed with the lichen planus. The treatment plan included initiating Methotrexate therapy with Tab. Folirax (Methotrexate) 7.5 mg twice daily on Friday and 5 mg once daily on Saturday for two weeks, along with Tab. Folvite (Folic acid) 5 mg once daily on Thursday and Sunday for two weeks. Additionally, Tab. Pan (Pantoprazole) once daily on Friday and Saturday, Tab. Teczine 5 mg at bedtime for ten days to alleviate itching, and Humollient LLP lotion applied twice daily for two weeks were prescribed. Follow-up in two weeks with CBC and LFT reports was advised. Within four days, the patient returned with complaints of increased lesions, a burning sensation over lesions since 1 day, pain and burning sensation in the oral cavity while chewing since one day, and increased redness of persisting lesions since one day and there is a presence of lesion on both lower limbs and the back region. **Conclusion:** Vigilant monitoring is required while treating lichen planus with the Methotrexate in optimizing therapeutic benefits while mitigating potential risks associated with methotrexate use.

KEYWORDS: Lichen planus, Methotrexate, Cutaneous lesions, Toxicity, Laboratory investigations.

INTRODUCTION :

Lichen planus is a disease originated from the Greek term called “leichen” which signifies the “tree moss” and the Latin term called" planus" indicating "flat”. It is a T cell mediated auto-immune disease with unknown etiology and the cause which distinctively characterizes the smooth surface of the cutaneous lesions.1It is a inflammatory condition which can effect mostly skin, mucous membrane hair and nails, depending on the genetic factor, region and influence of environmental conditions.2Lichen planus is most common with the prevalence rate of 0.5% to 2.5% in India. These rates can be high in certain groups those who are diagnosed with oral lichen planus as well as hepatitis C.[3]

Lichen planus is mainly classified into four types which are cutaneous lichen planus, Oral, nail, & Genital. In Cutaneous lichen planus the bumps on the skin looks as shiny and often itchy which usually found in wrists, ankles, lower back and inside the mouth.[4] In case of oral lichen planus mainly affects inside the mouth represents the white and red patches.[5] Nail lichen planus causes nail ridges, grooves, pitting, and color changes, sometimes resulting in nail loss in severe cases.[6] Genital lichen planus in the genital area causes itching, pain, and scarring, requiring specific management approaches.[7]

Methotrexate is frequently prescribed in the treatment of lichen planus, In case of conservative therapies have proven ineffective and in severe and extensive conditions. This medication comes under the class of disease-modifying antirheumatic drug (DMARD), acts by impeding the generation of specific immune cells, thereby decreasing inflammation and suppressing the immune activity which is mainly responsible for lichen planus symptoms.

LICHEN PLANUS WITH METHOTREXATE TOXICITY

CASE REPORT

A 47-year-old male patient presented to the dermatology outpatient department with a 15-day history of pruritic skin lesions across his body. Upon examination, distinct hyper pigmented violaceous papules, plaques, and patches were noted on both upper and lower extremities and the back. No oral lesions were observed, leading to a diagnosis of lichen planus. The treatment plan included initiating Methotrexate therapy with Tab. Folirax (Methotrexate) 7.5 mg twice daily on Friday and 5 mg once daily on Saturday for two weeks, along with Tab. Folvite (Folic acid) 5 mg once daily on Thursday and Sunday for two weeks. Additionally, Tab. Pan (Pantoprazole) once daily on Friday and Saturday, Tab. Teczine 5 mg at bedtime for ten days to alleviate itching, and Humollient LLP lotion applied twice daily for two weeks were prescribed. Follow-up in two weeks with CBC and LFT reports was advised. Within four days, the patient returned with complaints of increased lesions, a burning sensation over lesions since 1 day, pain and burning sensation in the oral cavity while chewing since one day, and increased redness of persisting lesions since one day.

He also reported one episode of low-grade fever on the fourth day, not associated with chills and rigors. There was no history of drug allergy. General physical examination revealed the presence of bilateral pitting edema over the bilateral legs up to the lower 1/3rd of bilateral lower limbs. The patient's weight was 105 kg, and Body surface area was 10-15%. Cutaneous examination showed multiple well-defined hyper pigmented to violaceous plaques with surrounding erythema present over bilateral upper limbs and back. Shown in (figure 1).

Multiple erythematous papules were present over the back, abdomen, and bilateral lower limbs. Shown in (figure 2). Upon mucosa examination, oral mucosal congestion was noted, while nail examination revealed longitudinal ridges on the great toenails of both feet. Systemic examination did not reveal any significant abnormalities. The patient was diagnosed with lichen planus with methotrexate toxicity and was admitted to the male skin ward.

DISCUSSION

Intravenous Folic acid 20 mg in 100 ml saline was administered, and comprehensive investigations including CBC, LFT, RFT, and RBS were conducted. Results showed a decrease in platelet distribution width (PDW) to 9.2 (normal range: 10-25 fl), an increase in serum chloride level to 109 (normal range: 98-107), and an elevated AG ratio to 1.8 (normal range: 0.8-1.2).On admission day, there was an increase in blood pressure, leading to a referral to the medicine department. The patient received Tab. Amlong 5mg as a stat but experienced no decrease in blood pressure the following day, along with three episodes of loose stools. Another medicine consultation resulted in a prescription of Tab. Amlong (Amlodipine) 5mg once daily in the morning, Tab. Vibact twice daily, and Inj. Tazor (Piperacillin + Tazobactum) 4.5 gm for 5 days. Treatment for methotrexate toxicity included Inj. Leucovorin 50mg/5ml IV every 6 hours for 4 days, Tab. Teczine (Levocetirizine) 5mg once daily at night for itching, and topical applications of Humollient LLP lotion and T-Bact ointment twice daily, along with saline compresses over crusts.

After six days of intensive monitoring and treatment, the patient's condition improved, and he was discharged with a medication plan, advised salt-restricted diet, and exercise regimen. A follow-up appointment was scheduled after five days.

CONCLUSION

Lichen planus, characterized by chronic inflammation affecting the skin and mucous membranes, presents a complex clinical challenge. Methotrexate, a systemic medication often considered for severe cases, carries the risk of toxicity, as seen in a 47-year-old male patient with pruritic lesions suggestive of lichen planus. Despite initiating methotrexate therapy, the patient developed concerning signs like mucosal congestion, longitudinal nail changes, and systemic abnormalities.

In this case which underscores the critical need for vigilant monitoring and proactive management of methotrexate toxicity in lichen planus patients. The intervention involved intravenous folic acid, supportive care, and medication adjustments, resulting in notable clinical improvement. This highlights the delicate balance required in optimizing therapeutic benefits while mitigating potential risks associated with methotrexate use.

Table 1: Causality Assessment of suspected ADR using Naranjo Scale

Questions	Yes	No	Don't Know/NA	Score*
Are there previous conclusive reports on this reaction?	+1	0	0	1
Did the adverse event appear after the suspected drug was administered?	+2	-1	0	2
Did the adverse reaction improve when the drug was discontinued or a specific antagonist was administered?	+1	0	0	1
Did the adverse event reappear when the drug was re-administered?	+2	1	0	0

Are there alternative causes (other than the drug) that could on their own have caused the reaction?	-1	2	0	2
Did the reaction reappear when a placebo was given?	-1	1	0	0
Was the drug detected in blood (or other fluids) in concentrations known to be toxic?	+1	0	0	0
Was the reaction more severe when the dose was increased or less severe when the dose was decreased?	+1	0	0	0
Did the patient have a similar reaction to the same or similar drugs in any previous exposure?	+1	0	0	0
Was the adverse event confirmed by any objective evidence?	+1	0	0	1
Total Score				7
*Score: Definite: ≥ 9, Probable: 5-8, Possible:1-8, Doubtful: 0				
Report: The suspected ADR found to be Probable on Naranjo scale assessment.				

The causality assessment was done using the Naranjo scale [Table 1]. A total score of 7 was obtained, indicating that the adverse reaction is probably caused by the suspected drug. According to the scale, a score of 9 or greater indicates a definite cause, 5 to 8 indicates probable, 1 to 4 indicates possible, and 0 indicates doubtful.

Hartwig's scale was used to assess the severity of the adverse drug reaction (ADR). The ADR was found to be level 4, which means it either increased the hospital stay by at least one day or was the reason for admission. Therefore, the ADR is classified as moderately severe.

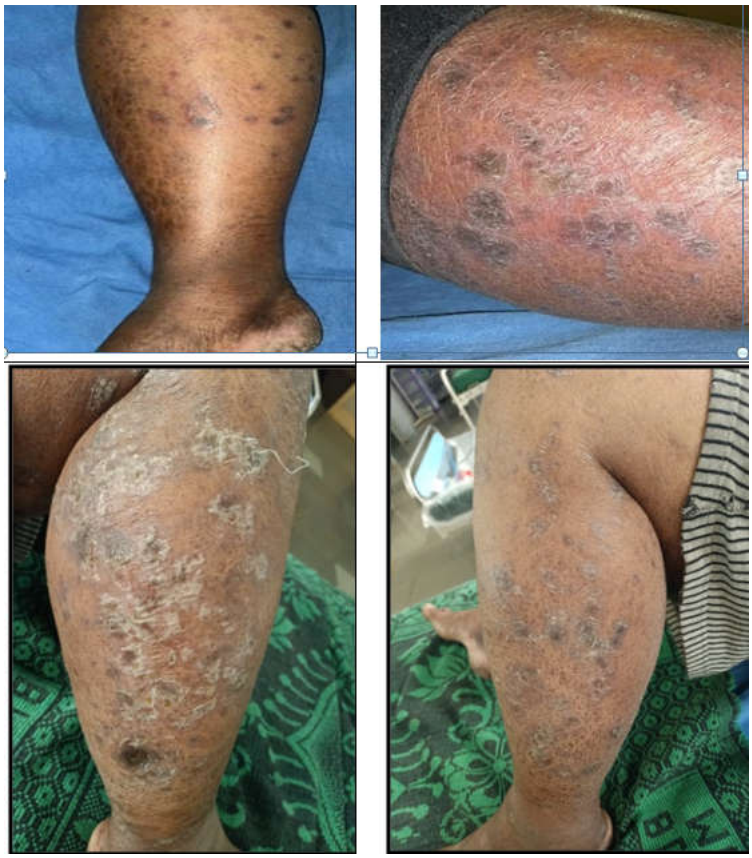

Figure 1. Multiple erythematous papules on lower limbs of the patient.

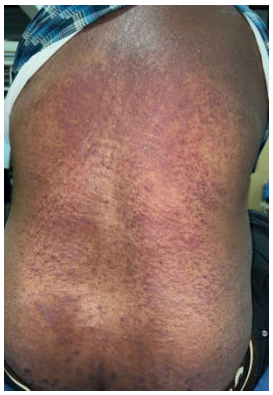

Figure 2. Erythematous papules on lower limbs of the patient.

CONFLICT OF INTEREST: The authors have no conflicts of interest regarding this investigation**.**

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