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A RARE CASE OF METHOTREXATE INDUCED ULCERATED PSORIATIC PLAQUES IN A PATIENT OF PSORIASIS

Pharmacology

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ABSTRACT

Methotrexate is an FDA approved drug for treating severe psoriasis. It is associated with toxicity owing to its narrow therapeutic range. Here the patient inappropriately self-administered 40 mg of methotrexate. Following this the patient developed oral mucositis and ulceration within psoriatic plaques. A diagnosis of methotrexate toxicity was made based on clinical findings. The hematological profile was within normal limits. The incidence of ulceration within psoriatic plaques with normal laboratory parameters has been reported very rarely. We report a case where methotrexate toxicity was responsible for ulceration of psoriatic plaques.

KEYWORDS

Methotrexate, ulcerated psoriatic plaques, psoriasis

INTRODUCTION

Methotrexate has been found to be a very effective agent in psoriasis and has been approved by the FDA for treating severe psoriasis.[1,2] It is an anticancer metabolite and it acts by inhibiting mitosis of the cells by antagonizing folic acid required for deoxyribonucleic acid (DNA) synthesis of cells. It is associated with toxicity owing to its narrow therapeutic range.[3] An accidental overdose of methotrexate by the patient or physician's prescription error is the most common cause of acute methotrexate toxicity.[4] Numerous trials have revealed the weekly dose of methotrexate to range from 20-30 mg.[5] Although it is safe in psoriasis, but failure to adhere to the guidelines can lead to toxicity, most prominent being bone marrow suppression, oral and gastrointestinal ulcerations and the most dreaded being hepatotoxicity.[1,6] The incidence of ulceration within psoriatic plaques with normal laboratory parameters has been reported very rarely.[2] Hence, the case is worth reporting.

Case Report

A 49 year old female patient was diagnosed with Contact Dermatitis with Palmar Psoriasis. The patient is also a known case of Sarcoidosis. She was prescribed Methotrexate one 10 mg tablet stat. But the patient continued the drug for four more days. Hence, a total of 40 mg of methotrexate was inappropriately self-administered by the patient. There was an increase in number and ulceration of psoriatic plaques along with oral mucositis. The drug was immediately stopped and a diagnosis of methotrexate toxicity was made based on clinical findings. Tablet Leucovorin 15 mg twice a day for 10 days, folic acid 5 mg thrice a day for 1 month, tablet Udiliv 300 mg and oral steroids for gargles were immediately prescribed to the patient.

A Complete Blood Count, Liver Function Test and Serum Creatinine were advised to the patient.

Laboratory testing revealed a complete blood count with Hemoglobin 12.1gm/dl(12-16gm/dl), RBC count 4 mil/cubic mm(3.8-5.8 mil/cubic mm) and a total WBC count of 6400/mm^3(4000-11000/mm^3). The Serum Aspartate Aminotransferase (AST) and Serum Alanine Aminotransferase (ALT) levels were 37 IU/L and 30 IU/L respectively (Normal range of AST and ALT are 8-37 IU/L and 10-28 IU/L respectively. The kidney function tests were within normal limits. Following this, the Naranjo's score was 7(probable) and the World health Organization (WHO)-Uppsala monitoring Centre (UMC) causality assessment showed probable correlation with the current adverse event. [7,8] ADR Monitoring Centre was notified and we assessed the causality of methotrexate induced mucositis using WHO-UMC scale. The severity of reaction was assessed by Hartwig Adverse drug reaction assessment scale[9] which classified the adverse drug reaction as moderate.

DISCUSSION

In dermatology practice, methotrexate is mainly used for its immunomodulatory action.[2] Methotrexate induced ulcerations of psoriatic plaques are an underreported and less common feature of methotrexate toxicity.[10] Oral mucositis is more prominent.[6] The most common risk factors for psoriatic plaque erosion are initiation or reinstatement of methotrexate after a drug hiatus, an increase in the methotrexate dose, renal impairment, use of NSAIDs or aspirin, age greater than 55 years, folate deficiency and low serum albumin levels.[11] Here the patient took 40 mg of Methotrexate instead of the prescribed 10 mg by the clinician. There was also no associated myelosuppression with ulceration of psoriatic plaques, although previous studies have shown ulceration of the psoriatic plaques with myelosuppression to be a fairly common event.[12]

The case mentioned here developed painful ulceration of psoriatic plaques following inappropriate self medication. Despite the fact that hematological parameters were mostly within normal limits, the presenting clinical features suggest acute methotrexate toxicity.

CONCLUSION

We believe it is important to report this case as methotrexate toxicity is established on clinical manifestations in the presence of normal laboratory profile. Such types of cases are very rare as generally methotrexate toxicity presents with abnormal hematological profile. Hence, this case is worth reporting.

Declaration of patient consent

The authors guarantee that they have obtained all appropriate patient consent forms. The patient has given his/her consent for his/her images and other clinical information to be reported in the journal. The patients understand that his/her name and initials will not be published and due efforts will be made to conceal his/her identity, but anonymity cannot be guaranteed.

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Nil

Conflict of Interest

There is no conflict of interest.

REFERENCES

1. Bishnoi P, Kumari R, Thappa DM. Monitoring methotrexate hepatotoxicity in psoriasis. Ind J Dermat, Venereology, and Leprology. 2011;77(5):545-8.
2. Jindal N, Arora K, Jindal P, Jain VK, Ghosh S. Inflamed psoriatic plaques: Drug toxicity or disease exacerbation. Ind J pharmac. 2013;45(4):410-1.
3. Silva MF, Ribeiro C, Gonçalves VM, Tiritan ME, Lima Á. Liquid chromatographic methods for the therapeutic drug monitoring of methotrexate as clinical decision support for personalized medicine: A brief review. Biomedical Chromatography. 2018;32(5).
4. Madke B, Singh AL. Acute methotrexate toxicity. Ind J of Drugs in Dermat. 2015 ;1(1):46-9.
5. Menting SP, Dekker PM, Limpens J, Hooft L, Spuls PI. Methotrexate dosing regimen for plaque-type psoriasis: a systematic review of the use of test-dose, start-dose, dosing scheme, dose adjustments, maximum dose and folic acid supplementation. Acta dermato-venereologica. 2016;96(1):23-9.
6. Agarwal KK, Nath AK, Thappa DM. Methotrexate toxicity presenting as ulceration of psoriatic plaques: a report of two cases. Ind J Dermat, Venereology, and Leprology. 2008;74(5):481-4.
7. Naranjo CA, Busto U, Sellers EM, Sandor P, Ruiz I, Roberts EA et al.. A method for estimating the probability of adverse drug reactions. Clin Pharmacol Ther 1981; 30:239-45.
8. Edwards IR, Arsonson JK. Adverse drug reactions: Definitions, diagnosis and management. Lancet 2000; 356:1255-9.
9. Srinivasan R, Ramya G. Adverse drug reaction-causality assessment. Int J Res Pharm Chem. 2011;1(3):606-12.
10. Bhatnagar A, Verma R, Vasudevan B, Saraswat N. Acute methotrexate toxicity presenting as ulcers in plaques of psoriasis vulgaris. Ind dermat online journal. 2015;6(3):232-3.

11. Demir FT, Tezcan Y, Türkoğlu Z, Başaran Ş. A case of Severe Low-dose Methotrexate-induced Toxicity. HASEKI TIP BULTENI-MEDICAL BULLETIN OF HASEKI. 2016;54(4):252-4.
12. Fridlington JL, Tripple JW, Reichenberg JS, Hall CS, Diven DG. Acute methotrexate toxicity seen as plaque psoriasis ulceration and necrosis: A diagnostic clue. Dermat online J. 2011;17(11).