WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 8, Issue 10, 170-173. Case Study ISSN 2277– 7105

SKIN REACTION AT SITE OF INTRATHECAL METHOTREXATE

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Article Received on
04 August 2019,
Revised on 11 August 2019,
Accepted on 16 August 2019,
DOI: 10.20959/wjpr201910-15723

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ABSTRACT

Complication of intrathecal methotrexate is an issue that is well documented, but development of a dermatological complication like skin burn following administration of intrathecal methotrexate is an extremely rare entity. A 24-year-old female with the diagnosis of acute lymphocytic leukemia (ALL) was put on a treatment regimen, including intrathecal methotrexate. After 2 days following intrathecal methotrexate administration, patient developed burn like skin lesion at site of administration. There was no history of trauma. Intrathecal skin burn may be a very rare, but serious, complication of intrathecal methotrexate administration.

1. INTRODUCTION

Methotrexate is a potentially toxic anti-metabolite and anti-folate chemotherapy drug.[1] Intrathecal treatment with methotrexate, an essential chemotherapy for both prophylaxis and treatment of central nervous system (CNS) involvement of acute lymphoblastic leukemia (ALL).[2] In Karbala province of Iraq, acute lymphoblastic leukemia represents the most common hematological malignancy.[3] Before the use of CNS prophylaxis, the CNS was the most frequently reported site of initial recurrence in patient with ALL, accounting for up to 75% of cases. However, with therapies that incorporate CNS prophylaxis, 5-year event-free survival rates of approximately 80% have been achieved in ALL patients.[4] The pharmacokinetics of methotrexate is different for intrathecal administration and systemic administration; it may be need 4 days to elimination after intrathecal administration.[5] Cutaneous manifestations of methotrexate toxicity include dose‑related mucositis,

photosensitivity, and idiosyncratic immune reactions such as erythema multiforme, Stevens–Johnson syndrome, and toxic epidermal necrolysis.[6] In this case report we will present a young female with ALL that develop burn like skin lesion at site of intrathecal. Up to our knowledge skin reaction at site of intrathecal treatment is extremely rare.

2. CASE REPORT

A 24-year-old female, referred to our centre for dicytopenia, her Hb 9.4, WBC 1.2 and platelets count was 155, 000. She suffered from recurrent attack of fever, nausea, vomiting and fatigue for more than 3 weeks. Bone marrow suggested diffuse infiltrations of blasts constituting 51% of total marrow cells; flow cytometry finding was consistent with precursor B cells acute lymphoblastic leukemia (CALLA) positive with aberrant expression of CD 13 CD 33. BCR –ABL was negative. CSF for cytospin was negative for leukemia cells. Patient received hyper CVAD protocol (hyper fractionated cyclophosphamide, vincristine, doxorubicin, and prednisolone)/alternatively with high-dose methotrexate and cytarabine. Intrathecal methotrexate(12.5mg) at day two and intrathecal cytarabine (100mg) at day seven as prophylaxis against central nervous system involvement. At cycle 3 patient developed well demarcated dusky erythematous patch of 4cm width and 6 cm length at site of intrathecal administration (Figure1). Patient treated with silver sulfadiazine (1%) cream twice daily with cefratol wound dressing. One week later patient improved and skin lesion healed (Figure 2).

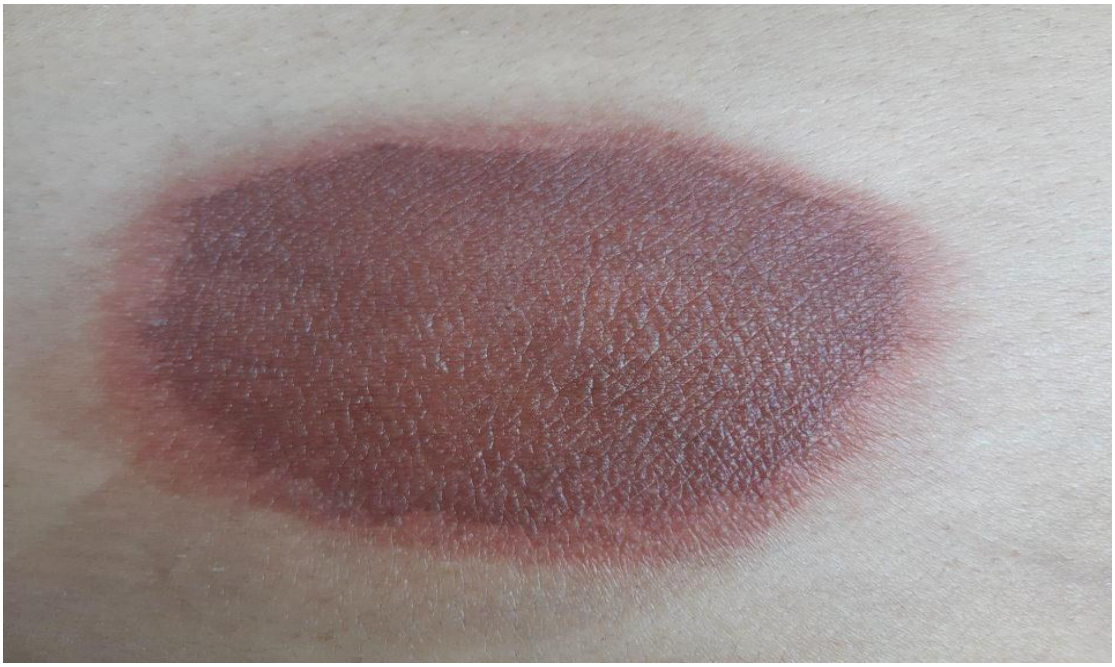

Figure 1: Dusky erythematous patch at site of intrathecal methotrexate administration.

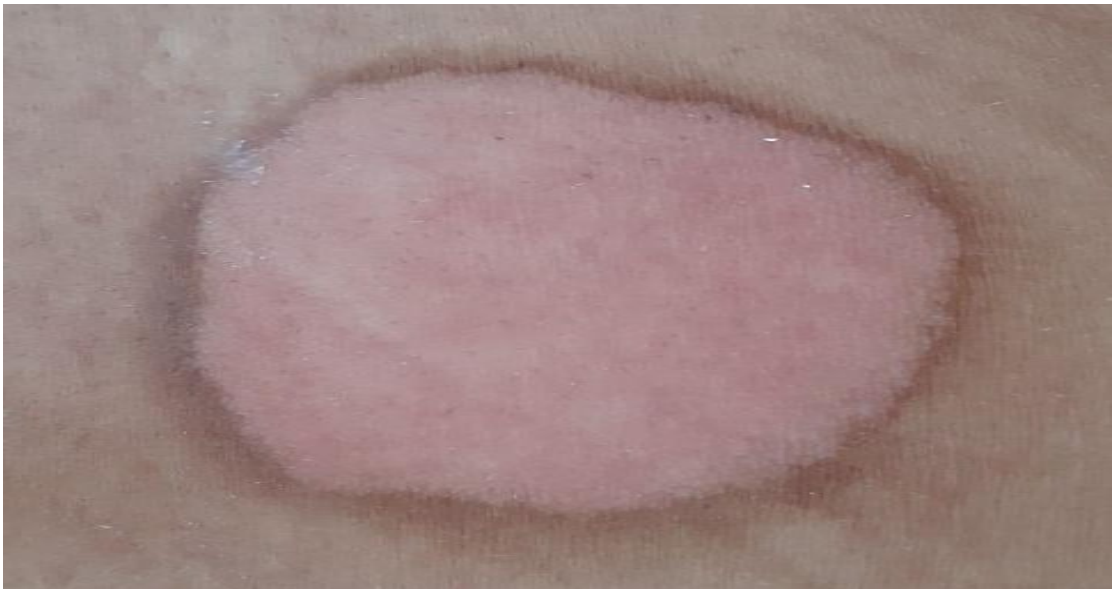

Figure 2: Skin lesion one week after treatment.

3. DISCUSSION

Methotrexate is an ant metabolite used as a treatment for a variety of neoplastic and inflammatory diseases. It has a variety of cutaneous side effects, in particular when administered in high doses. While cutaneous erosion as side effect of methotrexate was reported frequently in literature, skin reaction at site of intrathecal methotrexate was extremely rare.[1,6,7]

Best to our knowledge the only reported case of skin reaction at site of intrathecal was by Forner et al., that reported a 23-year-old woman with a diagnosis of diffuse large B-cell lymphoma presented with well-demarcated rectangular patch of erythematous skin and one area of moist desquamation found in the midline of the lumbar spine.[8]

There was many treatment protocol for methotrexate skin lesion such as steroid or antihistamine or general supportive advice (e.g., regular emollients and dressings as required).[7,8] We treated our patient as burn with silver sulfadiazine (1%) cream twice daily with cefratol wound dressing. She improved one week later and continued her chemotherapy and intrathecal treatments without any complications.

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