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Phenytoin induced dress syndrome

Dadi G.V.S. Surya Chandini¹, Kommoju Hemalatha¹, Chelli Seilusha¹, Gottipati Daiva Krupa¹, Vallampati Prudhvi¹, Shaik Nazma¹

Pharmacy Practice Department, A.M. Reddy Memorial College of Pharmacy, Narasaraopet, Guntur District, Andhra Pradesh, India.

Corresponding author: Dadi G.V.S. Surya Chandini

ABSTRACT

Drug Rash with Eosinophilia and Systemic Symptoms (DRESS) Syndrome may cause a serious hypersensitivity reaction to anti-epileptic drugs, such as phenytoin and carbamazepine drugs. DRESS syndrome symptoms include rash, fever, lymphadenopathy, eosinophilia, cutaneous eruption and potentially life-threatening damage of one or more organs such as nephritis, myocarditis or hepatitis. We report a 60 year old female patient was admitted in the hospital with the chief complaints of ulceration of mouth&lips, high fever, weakness, whitish papules on the hard palatal mucosa, patches of dryness in nasolabial folds and rashes on the whole body. Her past medical history was found to be late onset of epilepsy and hypertension since one month. Her medication history is she was taking Eptoin (phenytoin) 100mg thrice daily, C-Zam (Clobazam) 10mg, twice daily. Blood tests show elevated levels of neutrophils, eosinophils, erythrocyte sedimentation rate (ESR) and liver enzymes such as SGOT, SGPT, Alkaline phosphatase. Decreased levels of lymphocytes, PCV, MCV and MCH. The patient was diagnosed as DRESS syndrome, according to RegiSCAR score. Phenytoin was discontinued and replaced by Clobazam and corticosteroids and vitamin supplement were prescribed. Finally a good response to the treatment was observed.

Key words: Dress syndrome, skin rash, Phenytoin.

INTRODUCTION

DRESS (Drug Rash with Eosinophilia and Systemic Symptoms) is a syndrome which reflects a severe hypersensitivity reactions, mostly caused by the Anti-epileptic drugs. The clinical manifestations of DRESS Syndrome are rash, fever, lymphadenopathy, eosinophilia, cutaneous eruption and potentially life-threatening damage of one or more organs such as nephritis, myocarditis or hepatitis [1, 2].

These Drug Induced Hypersensitivity (DIHS) is also known as Hypersensitivity Syndrome (HSS)

[3]. The clinical manifestations of this syndrome are observed after 2 to 8 weeks of drug administration [4].

The mortality of this DRESS syndrome is estimated to be 10% in multiple studies [5, 6]. The phenytoin, and phenobarbital are the most common drugs causing DRESS syndrome with an incidence rate of 1 per 5,000 to 10,000 exposures [7]. In this report, only the drug caused Phenytoin induced DRESS Syndrome was to be discussed.

CASE PRESENTATION

A 60 years old female patient was admitted in the hospital with the chief complaints of ulceration of mouth&lips, high fever, weakness, whitish papules on the hard palatal mucosa, patches of dryness in nasolabial folds and rashes on the whole body.

Her past medical history was found to be late onset of epilepsy and hypertension since one month. Her medication history is she was taking Eptoin (phenytoin) 100mg, thrice daily, C-Zam (Clobazam) 10mg, twice daily.

On examination, she was conscious, arousable and oriented. Her vital signs were Temperature - 100 (F), Pulse Rate - 86bpm, respiratory rate - 22 breaths/min, Blood Pressure - 120/80mm Hg.

The skin showed (reddish spots) erythematous on the whole body, whitish papules on the head palatal mucosa, patches of dryness in nasolabial folds, and facial edema. Physical examination revealed no lymphadenopathy.

Her laboratory findings are hemoglobin - 11.3%, Leucocytes - 6,500 cells/mm, differential leukocyte count: Neutrophils - 77%, Lymphocytes - 16%, Eosinophils - 16%, PCV - 34.3, MCV - 77.8, MCH - 25.6, ESR - 30mm/1st hour. Liver Function tests were found to be SGOT - 85, SGPT - 160, Alkaline phosphatase - 450. Serum electrolytes & renal function tests are normal. Virological examinations are negative.



Figure.1. Erythematous rashes on hand

Scoring System for classifying the cases of DRESS as Possible, Probable or Definite

| S.No. | Clinical Features | Score |
|--------------------|---|----------|
| 1 | Fever $\geq 38.5^{\circ}\text{C}$ | 1 |
| 2 | Enlarged Lymph Nodes | 0 |
| 3 | Eosinophils | 1 |
| 4 | Leukocytes | 0 |
| 5 | Atypical lymphocytes | 0 |
| 6 | Skin rash extent (> 50% of body surface area) | 1 |
| 7 | Skin rash suggesting DRESS | 1 |
| 8 | Organ involvement | 1 |
| 9 | Resolution (15 days) | 1 |
| TOTAL SCORE | | 6 |

Score: <2 No case, 2-3 Possible, 4-5 Probable, >5 Definite.

The patient was diagnosed with definite case of DRESS syndrome based on clinical and laboratory findings. So the drug phenytoin was discontinued

and replaced by Clobazam & corticosteroids and vitamin supplements were prescribed. Good response to the treatment was observed. Fever and

rashes were cured. After two weeks, all the symptoms were completely resolved, so intravenous corticosteroids were stopped, alternatively oral corticosteroids are prescribed. She was discharged from the hospital with oral prednisolone treatment of dose 10 mg per day.

DISCUSSION

Generally DRESS Syndrome is progressive within 1-8 weeks after administration of drug [8]. In this case, the DRESS syndrome was developed after 5 weeks of drug exposure (phenytoin) and the symptoms like fever, skin rash, ulceration of mouth

and lips were developed. Liver function tests (SGOT, SGPT, Alkaline phosphatase), eosinophils, neutrophils are elevated.

According to RegiSCAR score DRESS syndrome was diagnosed. The Regi SCAR scale developed by the European registry of severe cutaneous adverse reaction to drugs and collection of biological sample [9]. In this RegiSCAR score scale, the score was given based on the clinical manifestations of the syndrome. By this scoring system, disease state is classified as no case, possible, probable and definite.

| S.No. | TYPES | SCORE |
|-------|----------|-------|
| 1 | No case | <2 |
| 2 | Possible | 2-3 |
| 3 | Probable | 4-5 |
| 4 | Definite | >5 |

- If the total score is less than two, then there is no case of DRESS syndrome.
- If the total score is between 2-3, then there is a possibility of DRESS syndrome.
- If the total score is between 4-5, then there is a probable of DRESS syndrome.
- If the total score is more than 5, then there is a definite of DRESS syndrome.

In this case, the RegiSCAR total score was found to be 6. So the cause of DRESS syndrome is

definite. The first step in the treatment of DRESS syndrome is to discontinue the drug which causes the syndrome. So the drug phenytoin was stopped and the patient should treat with alternative choice of drug [10]. Here she was treated with two different types of corticosteroids given by oral and IV route. In this case, these two drugs show effective action. After one week IV form of corticosteroid (dexamethosone) was subsided and oral corticosteroid (prednisolone) was continued. Other clinical manifestations and laboratory findings are monitored simultaneously.

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