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Case Report **Full Proceeding Paper**

PHENYTOIN INDUCED ERYTHRODERMA REACTION: A CASE REPORT

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ABSTRACT

P*henytoin has a serious adverse effect of causing erythroderma or exfoliative dermatitis. Here, we report a case of 24 yrs old female with chief complaints of itching, rashes all over the body since 5-6 days, scaling since 3 days, fever, shortness of breath, pedal edema,hair loss, conjunctival water in eyes with a past history of similar complaints 1month back when she had phenytoin administration due to pre-eclampsia. Patient was managed by switching to oral levetiracetam and discharged in a stable condition after 1 month of hospital stay.*

KEYWORDS: *Phenytoin, Adverse drug reaction, Erythroderma, Exfoliative dermatitis, Pre-eclampsia.*

INTRODUCTION

Phenytoin is the oldest non-sedative antiseizure/anticonvulsant drug with the chemical name 5,5Diphenylhydantoin belonging to hydantoin derivative. It works by enhancing the sodium efflux from the neurons of motor cortex thus reducing the excessive stimulation of membrane sodium. Thus, reduces posttenanic potentiation at synapses and prevents repetitive detonation of cortical seizure foci and hence, is indicated for treatment of Partial seizures and generalized tonic clonic seizures [1]. The serious dermatological reactions resulted are Bullous dermatosis, Erythroderma, Lupus erythematosus, Steven-johnson syndrome, Toxic epidermal necrolysis[2].

Erythroderma or Exfoliative dermatitis is a type of severe skin disorder resulting from many different causes. The causative factors include idiopathic causes, previous dermatological reactions, drug reactions, infections [3]. Medications also have known to be the important causative agents such as antiepileptic drugs, antibiotics, antihypertensives, calcium channel blockers and some topical agents [4]. If any such reactions occur after administration of phenytoin, stop the drug immediately. Erythroderma accounts for about 1 percent of the overall admissions of dermatological conditions in hospital [5]. This disease occurs both in men and women but has more prevalence in men of above 55 years although it can occur at any time [6].

Most of the erythroderma cases does not receive treatment for etiologic diagnosis hence this may lead to T-cell lymphoma [7]. Patients with complications such as septicemia, pneumonia and heart failure lead to death [8]. Hence, such cases should be reported to prevent the complications and also its important to create awareness in the healthcare system to tackle such problems.

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CASE:

i. **Case Report:** A24yrs female patient got admitted on 9-June-2017 in the department of Dermatology unit-1 with the complaints of – rashes along with itching all over the body since 5-6 days mainly on face then followed by upperlimb, lowerlimb, abdomen; Shortness of breath, pedal edema, hairloss, oozing of water from the eyes. Intense itching and scaling since 3days, fever not associated with chills and rigors. Her past medical history includes – H/o Eclampsia at 3rd month of pregnancy.. H/o miscarriage at 6th month pregnancy. Her past medication history includes Tab.Phenytoin 100mg OD and Tab.Telma 40mg OD since her 3rd month of pregnancy.Similar skin reactions were observed 1 month back due to drug Phenytoin and hence stopped. Re-intake of Eptoin since 1week. On examination patient was found to be conscious, coherent and oriented and her vitals are found to be BP-110/70mmHG, P/A-Soft, Heart/Lungs-NAD, pedal edema+, Cutaneous examination-generalised erythema, scaling present all over the body which also includes palm and soles, hair and scalp, inguinal CN, cervical CN where mucosa, genatilia, nails are found to be normal. Based on the subjective and objective data it was provisionally diagnosed as Erythroderma due to drug Phenytoin.It was so diagnosed because the patient had similar complaints of skin reactions due to the suspected drug Phenytoin one month back and upon re-administration of eptoin that is the drug phenytoin 1week back the skin reactions reappeared and were severe than before. The laboratory tests advised were complete blood picture where RBC, Hb got decreased and WBC got increased that is neutrophilicleukocytosis; Serum Electrolytes were found to be normal, RFT where blood urea got increased; Blood Sugar levels were found to be normal; Serum Calcium got decreased. Here, the ADR in this patient can be confirmed as Phenytoin Induced Erythroderma Reaction by :- the recurrence of the similar skin reaction on re-administration of phenytoin and by the recovery of the patient by replacing phenytoin with leviteracetam and with other symptomatic therapy The treatment was initiated with an alteration of tab.phenytoin 100mg OD with tab.leviteracetam 500mg BD, IV Corticosteroids (which were then shifted to oral steroids), symptomatic therapy with antihistamines, antibiotics, topical emollients and moisturizers along with multivitamins. Improvement in the patient condition was observed from day-10

and got completely recovered at day- 30. Then got discharged with the same therapy.

ii. **Case Analysis:** The risk factor in this patient to develop erythroderma is re-challenge that is the first time exposure to tablet phenytoin led to erythroderma-an adverse drug reaction and subsided on stopping the drug intake and when re-administered led to severe level of recurrence of erythroderma that led to hospital admission and a hospital stay of 30days. The assessment of the ADR was done by naranjopropability assessment scale where the total score assessment was 8 that is probable (5-8), WHO severity assessment is probable.

DISCUSSION

Tablet Phenytoin was prescribed for eclampsia along with tablet telma which occurred during the patients 3rd month of pregnancy. During the therapy with phenytoin she developed a skin reaction which was an ADR of phenytoin that is Erythroderma. On her hospital visit she was advised to stop phenytoin by the physician where the patient stopped taking phenytoin for one month and the condition subsided. One month later she again took the same prescription for one week and the reaction re-appeared more severely than the first time which led to hospital admission due to ADR. Erythroderma or exfoliative dermatitis is a state of severe skin disease. The clinical manifestations of exfoliative dermatitis are erythematic with inflammatory skin disease, scaling on the cutaneous surface of the skin, thickened skin, itching, fever and finally it may leads to dehydration [loss of fluids and proteins] which were manifested in this patient. Topical and systemic steroids play a very important role in exfoliative dermatitis along with other symptomatic therapy like antihistamines, antibiotics, liquid paraffin etc.

CONCLUSION

Phenytoin may show severe adverse drug reactions. Exfoliated dermatitis is one of the severe reactions of phenytoin. Immediate replacement of the drug with other anti-epileptic drug is necessary. In this case exfoliative dermatitis developed after re-administration of the drug and releived the allergic reactions after withdrawing phenytoin and replacing it with leviteracetam. In these period corticosteroids plays a main role in reducing the allergic reactions. Some of the other drugs given as the supportive therapy of the exfoliative dermatitis are such as histamines, vitamin supplementary, protein support, liquid paraffin (reducing the dryness), antibiotics may prefer for any super added infection . After 30days she was discharged from the hospital with oral prednisolone treatment dose 5mg once in a day for 1week.

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