ATT (ANTI TUBERCULOSIS TREATMENT) INDUCED ERYTHRODERMA

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***Abstract*: Tuberculosis(TB) is a common infectious disease in the developing countries. Cutaneous adverse drug reactions(CADR) with antitubercular treatment(ATT) can make further management of TB Challenging. Isoniazid is the first-line antitubercular drug par excellence and an essential component of all antitubercular regimens unless the patient is intolerant to it, or bacilli show resistance. Among antitubercular drugs, exfoliative dermatitis has been reported with rifampicin, isoniazid, ethambutol, pyrazinamide, streptomycin, PAS either singly or combination of two drugs. The most common ADE while on ATT, namely drug induced hepatitis, skin rash. Various causes of erythroderma in adults include pre-existing eczema, psoriasis, lymphoma, leukemia, and drugs such as phenylbutazone, hydantoin derivatives, carbamazepine, sulfonamides, penicillins, cimetidine, diltiazen, dapsone, allopurinol, gold salts, and lithium. Early recognition, prompt withdrawal of antitubercular therapy and institution of steroids, if reaction is severe, are cornerstones of its management. It is important to recognize the CADRs to ATT so that severe and potentially life-threatening adverse reaction can be identified and managed early. It is equally important to continue ATT in minor CADRs so that patients suffering from TB can be cured and rendered non-infectious as early as possible from uninterrupted ATT along with prevention of development of drug resistance.**

***Keywords*: Tuberculosis, Antitubercular treatment, cutaneous drug reactions, drug resistance, exfoliative dermatitis, skin rash, rifampicin**

INTRODUCTION:

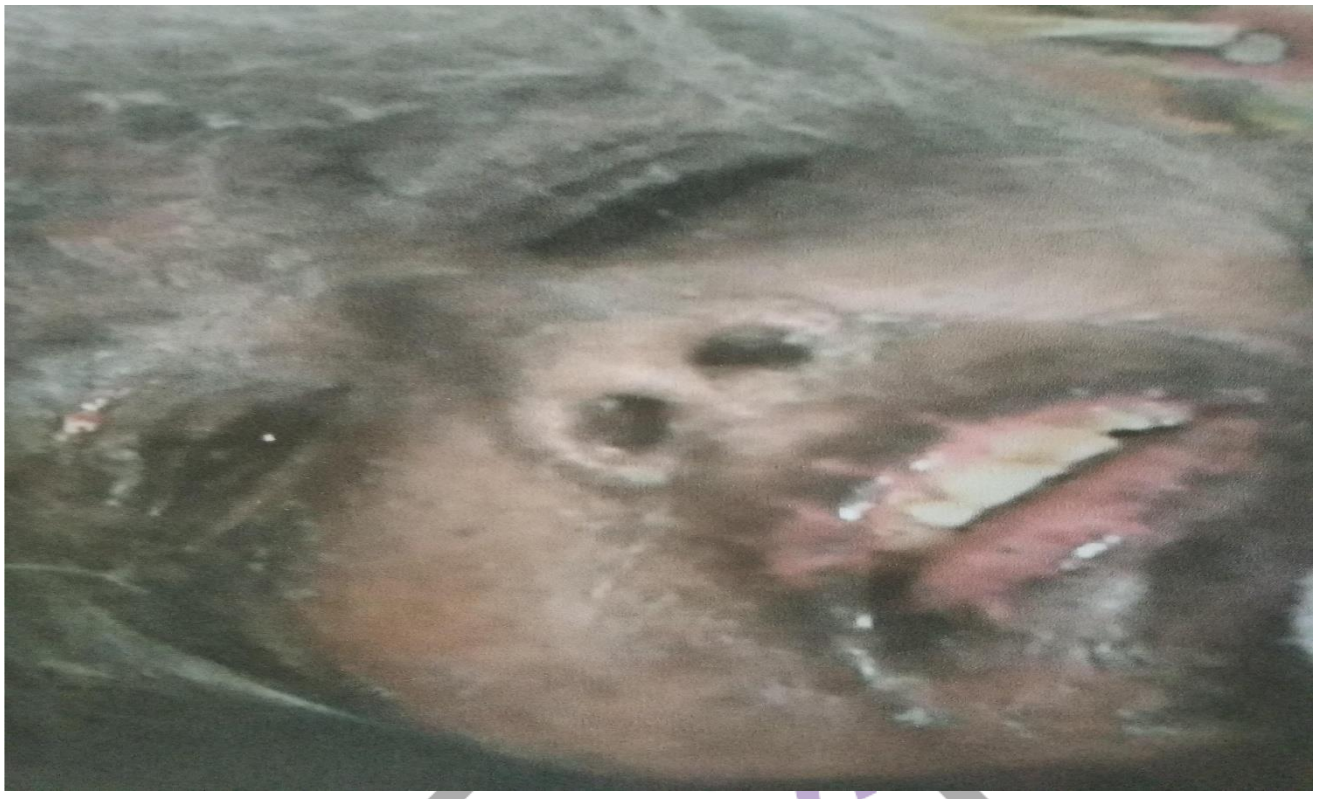
Tuberculosis (TB) is a common infectious disease in the developing countries. Antitubercular therapy with the first line drugs is very effective and well-tolerated with only few major adverse reactions. Cutaneous adverse drug reactions (CADR) with antitubercular treatment (ATT) can make further management of TB challenging. Erythroderma caused by isoniazid is an uncommon but serious adverse drug reaction. (1). Isoniazid is the first-line antitubercular drug par excellence and an essential component of all antitubercular regimens unless the patient is intolerant to it, or bacilli show resistance(2). Exfoliative dermatitis also known as erythroderma is an uncommon but serious skin disorder which results in generalized scaling eruption of the skin. It is usually drug induced, idiopathic, or secondary to underlying cutaneous or systemic disease. Theoretically, any drug may cause exfoliative dermatitis. Among antitubercular drugs, exfoliative dermatitis has been reported with rifampicin, isoniazid, ethambutol, pyrazinamide, streptomycin, PAS either singly or combination of two drugs(3). The most common ADE while on ATT, namely drug induced hepatitis, skin rash(4). In the present case, the patient presented with erythema and scaling of the body surface area along with itching within 8 weeks of ATT.

CASE:

Majority of cutaneous hypersensitivity reactions occurred within two months after the initial dose. In our case, patient developed exfoliative dermatitis by end of second month of treatment.

A 74 years old female subject came with chief complaints of skin lesions since 20 days, chills, rigors and scaling of skin. H/O itching present over palms and soles. H/O fever and chills since 3 months intermittently frequent in evenings. H/O back pain, ear discharge since 10 days, difficulty in swallowing since 1 month, urinary incontinence since 1 month. On examination Patient was thin and malnourished. Pedal edema was present since 1 month. Cutaneous examination show exfoliating dermatitis all over face, back, arms, legs with erosion present all over neck and arms. Laboratory findings: Blood urea- 55 mg/dl, Lips- bleeding +, RBC- 2.53 mill/Cumm, HB- 7.4 gm/dl, MCHC- 30.9 gm/dl, 88thous/mm3. Ultra sound scan of abdomen: Impression: grade- 1 fatty liver. Past medical history: K/c/o HTN since 10 yrs. TB since 2 months. Past medication history: ATT for 2 months with reduced dose since 1 month. T. Pyrazinamide- 500 mg OD(1 gm), T. Ethambutol- 800 mg OD, T. Rifampicin- 300 mg OD(600mg).

The patient was treated with Inj.Decadron 1CC IV BD, Inj. Pantop IV OD, Tab. Ataraxia 25 mg OD, Cap. A and D, Tab. BC OD, Inj. Ability 2CC IM SOS, Tab. Azithromycin 500mg OD, and Topical applications like Mucopaine gel and TESS ointiment. Patient was discharged with same medication.



DISCUSSION:

The patient is a k/C/O Tuberculosis since 2 months and is on ATT since 2 months, with the dose reduced treatment since 1 month. After talking this medication she developed skin lesions, scaling of skin, erosion of lesions associated with bleeding of lips. Exfoliation of Skin was found in the patient. Erythroderma is an intense generalized redness of the skin. It is an inflammatory disorder and an extreme state of dysmetabolism characterized by extensive erythema and scaling all over the body classically involving more than 90% of the body surface. It is of great concern because of significant risk of morbidity and mortality owing to

dysmetabolism an its complications, in addition to the risks inherent to the underlying disease and its therapy(5). Various causes of erythroderma in adults include pre-existing eczema, psoriasis, lymphoma, leukemia, and such as phenylbutazone, hydantoin derivatives, carbamazepine, sulfonamides, penicillins, cimetidine, diltiazen, dapsone, allopurinol, gold salts, and lithium. Exposure to the causative drug may last for 2 weeks to several months before the reaction emerges. Drug-induced erythroderma has the best prognosis among all the causes of erythroderma often resolving in 2-6 weeks.(6). It usually presents with six to eight weeks of initiation of antitubercular treatment. Early recognition, prompt withdrawal of antitubercular therapy and institution of steroids, if reaction is severe, are cornerstones of its management. Cutaneous adverse drug reactions (CADR) are one of the commonly observed major adverse effects of first line antitubercular therapy being reported in tubercular patients. CADR associated with antitubercular treatment include morbiliform rash, erythema multiforme syndrome, Urticaria, lichenoid eruption and other more serious ones like SJ syndrome and exfoliative dermatitis.(7). The underlying pathogenesis of this hypersensitivity, whether immune-mediated and/or toxic in nature, is unclear. Predisposing factors for hypersensitivity reactions to ATT include HIV infection, polypharmacy, advanced age, autoimmune disease, and renal or liver impairment.(8).

Exposure to the causative drug may last for 2 weeks several months before the reaction emerges. Drug-induced erythroderma has the best prognosis among all the causes of erythroderma often resolving in 2-6 weeks.(9). It is important to recognize CADRs to ATT so that severe and potentially life-threatening adverse reaction can be identified and managed early. It is equally important to continue ATT in minor CADRs so patients suffering from TB can be cured and rendered non-infectious as early as possible from uninterrupted ATT along with prevention of development drug resistance. Erythroderma is the result of a dramatic increase in the epidermal turnover rate. In patients with this disorder, the mitotic rate and the absolute number of terminator skin cells are higher than normal. Moreover, the time necessary for cells to mature and travel through the epidermis is decreased. This compressed maturation process results in an overall greater loss of epidermal material, which is manifested clinically as severe scaling and shedding.(10). Normal epidermis undergoes some exfoliation every day, but scales that are lost contain little, if any, important viable material, such as nucleic acids, soluble proteins and amino acids. In erythroderma, however, protein and folate losses may be high(11).

CONCLUSION:

Severe hypersensitivity reactions to standard antitubercular drugs are rare but they may be fatal. They usually commence after four to six weeks of therapy and must be recognized early to reduce associated morbidity and mortality. In this case ATT can be continued after a gap, until the skin rash/erythematous react disappear or reduce. Topical and systemic and suitable can help to relieve skin reactions.

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