Case Report on Anti Tuberculosis Treatment Induced Hepatitis

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Abstract- *Drug-induced hepatitis is rare and is caused by toxic exposure to certain medications, vitamins, herbal remedies, or food supplements. Tuberculosis is a major health burden worldwide although better drugs are available for managing tuberculosis treatment failure is one of the common problems encountered. Isoniazid and Pyrazinamide are the common drugs causing hepatotoxicity. The drug dosages were calculated in relation to the weight of the patients. The goal of treatment for drug-induced hepatitis is to discontinue taking the causative agent and monitor the liver closely while it recovers.*

Keywords- hepatitis, tuberculosis, isoniazid, rifampicin, pyrazinamide, streptomycin, monocef, lasix.

I. INTRODUCTION

Drug-induced hepatitis is rare and is caused by toxic exposure to certain medications, vitamins, herbal remedies, or food supplements.

Usually, the toxicity occurs after taking the causative agent for several months, or from an overdose of a medication such as acetaminophen. Usually, the agent is discontinued once hepatitis is suspected and is rarely restarted unless it is absolutely essential for treatment[1].

Tuberculosis is a major health burden worldwide although better drugs are available for managing tuberculosis treatment failure is one of the common problems encountered. Among the various causes which can cause treatment interruption, drug induced hepatotoxicity is a common cause. Isoniazid and Pyrazinamide are the common drugs causing hepatotoxicity.

II. DRUG REGIMENS

The drug regimens used are as follows:

Category1 (2R3H3E3Z3/4R3H3): RMP, INH, ethambutol (EMB) and PZA given three times weekly for 2 months followed by RMP plus INH three times weekly for 4 months.

Category2 **(**2S3R3H3E3Z3/1R3H3E3Z3/5R3H3): Streptomycin, RMP, INH, EMB and PZA given three times weekly for 2 months followed by four drugs for another one month of intensive phase and then RMP and INH given three times weekly daily for 5 months.

III. DRUG DOSAGES

The drug dosages were calculated in relation to the weight of the patients as follows:

- Streptomycin: 0.75 gm IM (<50 years) and 0.50 gm (>50 years)
- Rifampicin: Body weight <450 mg/day; >50 kg - 600 mg
- Isoniazid: 600 mg (10-15mg/kg)
- Ethambutol: 1200 mg (30 mg/kg)
- Pyrazinamide: 1500 mg (30-35mg/kg)[2].

IV. SYMPTOMS

The following are the most common symptoms of drug-induced hepatitis. However, each individual may experience symptoms differently.

Symptoms may include:

- Fever
- Rash or itchy red hives on skin
- Joint pain
- Sore muscles
- Flu-like symptoms
- Nausea
- Vomiting
- Decreased appetite
- Sore muscles
- Jaundice - yellowing of the skin and eyes

The symptoms of drug-induced hepatitis may resemble other medical conditions or problems.

V. DIAGNOSIS

In addition to complete medical history and physical examination, diagnostic procedures for drug-induced hepatitis may include the following:

- Specific laboratory blood tests, such as the following:
- Liver function studies
- Cellular blood counts
- Bleeding times
- Electrolyte tests
- Tests for other chemicals in the body
- Drug screening tests
- Ultrasound
- Liver biopsy

VI. TREATMENT FOR DRUG INDUCED HEPATITIS

Specific treatment for drug-induced hepatitis will be determined by your physician based on:

- Age, overall health, and medical history
- Extent of the disease
- Tolerance for specific medications, procedures, or therapies
- Expectations for the course of the disease
- Opinion or preference

The goal of treatment for drug-induced hepatitis is to discontinue taking the causative agent and monitor the liver closely while it recovers. Some drugs may cause a slight increase in liver enzymes without symptoms. It may not be necessary to discontinue using these medications.

Always consult physician. If drug-induced hepatitis is suspected and confirmed, serial blood tests will be necessary, and possibly a referral to a liver specialist. Physician will report the findings to the US food and drug administration (FDA) and the pharmaceutical manufacturer.

NATIONAL RECOMMENDATIONS FOR MANAGING ATT INDUCED HEPATOTOXICITY AND RESTARTING THE THERAPY

- If a drug induced hepatitis is diagnosed, ATT drugs are to be stopped
- Wait until the jaundice resolves (a severely ill patient may die without TB drugs)
- It is strange but fortunate that in most cases the patient can restart the same drugs without hepatitis returning.
- If jaundice returns, and the patient has not completed the intensive phase, give him two months of Streptomycin, INH and Ethambutol followed by 10 months of INH and Ethambutol.
- If the patient has completed the intensive phase, give him INH and Ethambutol until he has had a total of 8 months treatment for Short Course Chemotherapy (SCC) or 12 months for standard regimen

BTS RECOMMENDATIONS FOR RESTARTING THE THERAPY IN PATIENTS DEVELOPING HEPATOTOXICITY

- INH should be introduced initially at a dose of 50 mg/day, increasing sequentially to 300 mg/day after 2–3 days if no reaction occurs, and then continued.
- After a further 2–3 days without reaction to INH, rifampicin at a dose of 75 mg/day can be added, increasing to 300 mg after 2–3 days, and then to 450 mg (<50 kg) or 600 mg (>50 kg) as appropriate for the patient's weight after a further 2–3 days without reaction, and then continued.
- Finally, pyrazinamide can be added at a dose of 250 mg/day, increasing to 1.0g after 2-3 days and then to 1.5g (<50kgs) or 2g (>50kgs)[3].

CASE REPORT: A 51yrs old male patient was admitted in male general medicine ward with chiefcomplaints of fever,swelling of both lower limbs since 1 month, SOB since 20 days H/O vomiting, pain in abdomen after eating food, loss of appetite.

O/E: Patient is conscious and coherent,afebrile, pulse rate-83/min,BP-150/80 mmHg, CVS-S1S2 positive, par abdomen - soft.

VII. DISCUSSION

This case was reported as ATT induced hepatitis. The patient was administered with injection monocef 1gm IV 2times aday, injection Lasix 20mg IV 2times aday, injection pantop 40mg IV one time aday, injection optineuron 1amp in 1 pint NS then after 3days ultra sound scan impression of the patient was found to be right moderate pleural effusion, left minimal pleural effusion, splenomegaly. Rifampicin was kept on hold. Isoniazid, rifampicin and pyrazinamide have been observed to have hepatotoxicpotential and drug induced hepatotoxicity (DIH) is an important and commonly encounteredadverse effect with anti TB treatment. Several types of drug induced liver damage have beendescribed. Mechanisms of drug induced hepatotoxicity include-idiosyncratic damage, dose dependent toxicity, induction of

hepatic enzymes, drug induced acute hepatitis, allergicreactions. Early recognition of riskfactors with close follow up of patients receiving ATT and subjecting them to repeated liverfunction tests will significantly reduce morbidity and mortality and improve the compliance ofthe patients receiving ATT.

VIII. CONCLUSION

Since TB is a common problem and druginduced hepatotoxicity is one of the common problems associated with ATT therapy, this issuegains importance. Patients on ATT therapy should be counseled thoroughly for the early detection ofhepatotoxicity and on occurrence of hepatotoxicitythe patients should be managed appropriately. Although the occurrence of hepatotoxicity due toATT drugs is not totally avoidable, a systematicapproach can definitely be helpful in minimizing notonly the incidence but also the morbidity.

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