VOLUME - 10, ISSUE - 04, APRIL - 2021 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Pharmacology

SEVERITY OF ADVERSE DRUG REACTIONS WITH FIRST LINE ANTI-TUBERCULOSIS DRUGS IN PATIENTS ON DIRECTLY OBSERVED TREATMENT SHORT-COURSE (DOTS)

Tauseef Nazir* Demonstrator, Department of Pharmacology, Government Medical College Karan Nagar, Srinagar Kashmir 190010.*Corresponding Author

Mohd Adil Demonstrator, Department of Pharmacology, Government Medical College Karan Nagar, Srinagar Kashmir 190010.

Shaheena Rasool Demonstrator, Department of Pharmacology, Government Medical College Karan Nagar, Srinagar Kashmir 190010.

KEYWORDS :

INTRODUCTION

Adverse drug reaction (ADR) is defined as noxious, undesired and unintended effect of a drug which occurs at a doses normally used in humans for treatment, diagnosis and prevention of a disease or to modify physiological state.ADR is considered to be serious if it leads to hospitalization of the patient or prolongation of hospitalized patient or causes permanent disability or birth anomaly or death in extreme cases.[1]

The first line drugs have high efficacy and less toxicity while as the second line drugs have less efficacy and more toxicity. The different first line drugs include isoniazid, rifampicin, ethambutol, pyrazinamide and streptomycin. As treatment of tuberculosis involves administration of multiple drugs the risk of adverse drug reaction remains.[2]

MATERIALS AND METHOD

The study was observational study carried out in Government medical college Srinagar for a period of six months after getting approval from the Institutional Ethics Committee.

RESULTS

The severity of ADRs was determined by using the modified Hart Wig and Siegel Scale (1992)[3] as given below:

MILD: ADRs which were self-limiting and able to resolve over time without treatment and did not contribute to prolongation of the length of stay.

MODERATE: ADRs were defined as those that required therapeutic intervention and hospitalization prolonged by 1 day but resolved in <24 hours or change in drug therapy or specific treatment to prevent a further out come.

SEVERE: ADRs were those that were life threatening, producing disability and those that prolonged hospital stay or lead to hospitalization or required intensive medical care.

LETHAL: ADRs were those that directly or indirectly contributed to the patient's death.

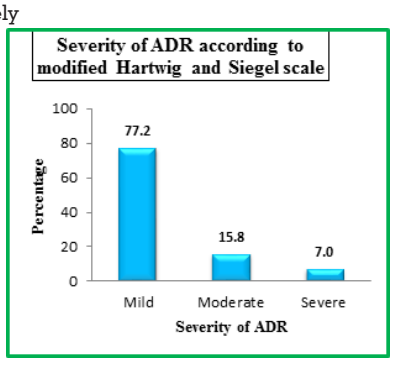
Patients' outcomes were reported as:

- Fatal
- Fully recovered (Patient fully recovered during hospitalization)
- Recovering (Patient recovering but not fully recovered during hospitalization)

: Severity of ADR according to modified Hart wig and Siegel scale

Severity of ADR	Frequency	Percentage
Mild	44	77.2
Moderate	9	15.8
Severe	4	7.0
Total	57	100

Total number of patients enrolled in the study were 164 out of which 57 reported presence of an adverse drug reaction (ADR),Out of those 57 ADR's majority 44 (77.2%) were mild while moderate and severe were only 9 (15.8%) and 4 (7%) respectively



DISCUSSION

Treatment of tuberculosis requires patients to take multiple drugs that may result in increased Adverse drug reactions (ADR's).Severity of these ADR's is critical as they may result in discontinuation drug therapy and hospitalization .

In our study the severity of ADR's in majority of the cases were mild to moderate (93%) while only 7% were severe. In our study, drug induced liver injury (DILI) was found in 3 patients who were admitted in the hospital. Of the first line drugs, isoniazid, rifampicin, and pyrazinamide are considered to be the major hepatotoxins.Once the diagnosis was confirmed, all these drugs were stopped and second line drugs added. Rechallenge was done as per the guidelines of American Thoracic Society (ATS)[4] or British Thoracic Society(BTS)[5] and Pyrazinamide was found to be the offending drug. One patient developed acute kidney injury (AKI).Acute kidney injury is a rare and severe complication that can interrupt treatment and cause permanent kidney damage. Although isoniazid and ethambutol have been associated with AKI, Rifampicin is the most common anti-TB drug responsible for AKI identified by most studies[6].Other studies have shown than injectible anti TB drugs (streptomycin) is responsible for renal failure.[7]

Severity of ADR's associated with directly observed treatment-short course (DOT's) are generally mild and don't require any treatment or discontinuation of the drugs, rarely they may be severe so regular monitoring of patients especially during intensive phase should be done to identify these ADR's and manage them at earliest.

REFERENCES

1. Srivastava, S K. (2017). Pharmacology for MBBS: Adverse drug rections,monitoring and pharmacovigilance.Himanchal Pradesh,India: Avichal publishing company.
2. Srivastava, S K. (2017). Pharmacology for MBBS: Antitubercular Drugs.Himanchal Pradesh,India:Avichal publishing company.

3. Hartwig SC, Seigal J, Schneider PJ. Preventability and severity assessment in reporting adverse drug reac Hartwig SC, Seigal J, Schneider PJ. Preventability and severity assessment in reporting adverse drug reactions. Am J Health Syst Pharm 1992; 49: 2229-32.tions. Am J Health Syst Pharm 1992; 49: 2229-32.
4. Saukkonen J, Cohn D et al. An official ATS Statement: Hepatototoxicity of anti-tuberculosis therapy. Am J RespirCrit Care Med 2006;174:935-952
5. Joint Tuberculosis Committee of British Thoracic Society. Chemotherapy and management of tuberculosis in the United Kingdom: recommendation 1998.Thorax 1998; 53:536-548.
6. Chia H.C, Yen F.C, Vincent W et al. Acute kidney injury due to anti tuberculosis drugs. A five year experience in an aging hospital. BMC Infectious Diseases 2014; 14: 2.
7. Guidelines for establishing DOTs-Plus pilot projects for the management of multidrug-resistant tuberculosis (MDR).