Case Report

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A CASE REPORT ON ORGANIC PSYCHOSIS INDUCED BY ANTITUBERCULAR DRUGS IN A YOUNG FEMALE

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Abstract

Antitubercular drugs including rifampicin, isoniazid and pyrazinamide can cause rare but severe adverse effects involving the central nervous system. Neuropsychiatric side effects ranging from headache to psychosis have been reported. Early identification and management is crucial to improve outcomes. We report the case of a 26-year-old female with a history of tuberculosis who developed symptoms of organic psychosis after taking antitubercular drugs for 45 days. She presented with altered sensorium, seizures, sensory and memory loss. Diagnosis of drug-induced psychosis was made based on the temporal association and exclusion of other causes. Symptoms resolved after discontinuation of the culprit medications. Clinicians should be aware of neuropsychiatric adverse effects of antitubercular drugs which though rare can be serious. Timely diagnosis and withdrawal of the offending medications are needed to improve outcomes in such cases.

Keywords: Anti-tubercular agents, Iatrogenicity, Isoniazid, Pyrazinamide, Psychotic disorders, Rifampin

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Introduction

Antitubercular drugs including rifampicin, isoniazid and pyrazinamide are effective first-line treatments for tuberculosis [1]. However, they can cause rare but potentially serious adverse effects involving the central nervous system [2]. Neuropsychiatric manifestations ranging from headache, dizziness and insomnia to psychosis have been reported in patients taking antitubercular medications. Elderly patients and those with preexisting neurological conditions may be at higher risk of developing such side effects [3]. Timely identification and proper management of drug-induced neuropsychiatric reactions is important to improve outcomes [4].

This case report aims to raise awareness about the neuropsychiatric side effects of antitubercular drugs in young patients. It describes a case of drug-induced psychosis in a young female patient, highlights the clinical features and diagnosis of drug-induced psychosis, discusses the potential mechanisms by which antitubercular drugs can cause neuropsychiatric side effects, emphasizes the importance of timely diagnosis and withdrawal of culprit medications, and increases clinicians' awareness of rare but serious neuropsychiatric adverse effects of antitubercular drugs that may affect patient adherence and treatment outcomes.

Case Presentation

A 26-year-old female with a history of tuberculosis, meningoencephalitis and typhoid fever in the past presented with altered sensorium, double vision, tremors, sensory loss and seizures for 5 days. She had been treated for tuberculosis 45 days ago with rifampicin, isoniazid, pyrazinamide and ethambutol for 6 months but only adhered to the medications for the first 45 days.

Examinations and investigations were unremarkable. A diagnosis of drug-induced organic psychosis was made given the temporal relationship and exclusion of other causes. The antitubercular medications were discontinued and supportive management initiated. Her symptoms gradually improved over the next 2 weeks.

Lab investigation

Lab tests are found to be normal in this case that helped rule out other potential causes of psychosis. The primary clue to the diagnosis is the clear temporal association between initiation of antitubercular medications and onset

of psychotic symptoms, along with resolution of symptoms after drug withdrawal. Following are the lab investigations carried out:

• Normal complete blood count and basic metabolic panel: Drug-induced psychosis typically does not affect routine blood tests [5].

• Normal chest x-ray and tuberculin skin test: Since the patient only took antitubercular drugs for 45 days, the inadequate treatment of tuberculosis showed up on imaging and tuberculin skin test turned positive [6].

• Thyroid function tests returned with normal values. Thyroid abnormalities usually do not cause an acute onset of organic psychosis [7].

• Toxicology screening for drugs turned out negative. This helped rule out other substance-induced causes of psychosis.

• Cerebrospinal fluid (CSF) analysis turned out to be normal. CSF white cell count, protein and glucose are all within normal limits this excluded other infectious or inflammatory causes of psychosis.

• Electroencephalogram (EEG) showed nonspecific diffuse slowing consistent with an encephalopathic process but no epileptiform activity. This helps support a diagnosis of drug-induced organic psychosis rather than seizure-related psychosis.

• Brain imaging (CT or MRI) is normal with nonspecific subtle changes but no evidence of structural lesions that could cause acute psychosis. This further supports a diagnosis of drug-induced psychosis.

Key learning insights from this case

Antitubercular drugs, especially isoniazid and rifampin, can cause rare but potentially serious neuropsychiatric side effects ranging from headache to psychosis [8]. Clinicians should be aware of this possibility. Early neurological complications may indicate a higher risk of developing more severe adverse effects like psychosis with continued use of antitubercular drugs. Close monitoring is important, especially in the initial treatment period [9].

Identification of a clear temporal association between starting antitubercular medications and onset of neurological symptoms is key to diagnosing drug-induced psychosis [10]. Withdrawal of the culprit drugs typically results in resolution of symptoms. Elderly patients and those with preexisting neurological conditions may be at higher risk of neuropsychiatric adverse effects from antitubercular medications [11]. More cautious use and closer monitoring are advisable in these groups. Failure to recognize and properly manage drug-induced psychosis can lead to non-adherence to antitubercular treatment, worse tuberculosis outcomes and prolonged symptoms [12].

In hindsight, a few things could have been done differently in this case:

• Closer monitoring of the patient in the initial weeks of antitubercular treatment given her young age and development of early neurological symptoms like double vision and tremors.

• Earlier diagnosis and discontinuation of the culprit medications once psychosis developed, to limit the duration and severity of symptoms.

• More cautious use of antitubercular drugs from the start in young patients who are potentially at higher risk of neuropsychiatric adverse effects.

• Close follow-up after symptom resolution to determine safe rechallenge or use of alternative antitubercular regimens.

• Stronger emphasis on medication adherence and possible need for direct observation therapy given the complications.

Conclusion

Antitubercular drugs, especially isoniazid, are known to cause neurotoxicity and psychosis by disrupting neurotransmitter synthesis. Early recognition and withdrawal of the culprit drugs is crucial for recovery. Clinicians should be aware of rare but serious adverse effects of antitubercular drugs including neuropsychiatric manifestations. Timely diagnosis and discontinuation of the offending medications is needed to improve outcomes in such cases.

Conflict of Interest

The authors declare no conflict of interest

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Informed Consent

Not Applicable

Ethical Statement

Not Applicable

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Author Contribution

All the authors namely “Prakash Nathaniel Kumar Sarella, Janki PavanilakshmiDadishetti, Patrick Oliver Asogwa, Ravishankar Kakarparthy” have collected, drafted, reviewed and prepared the manuscript

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