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Analyzing interactions: A review of treatment options for schizophrenic patients on Clozapine with pulmonary tuberculosis

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Statement of the Problem: Studies have observed that the incidence of pulmonary tuberculosis has been significantly higher in patients with schizophrenia in countries where pulmonary tuberculosis is endemic. Patients on clozapine who are diagnosed with tuberculosis often present clinicians with a management dilemma. Several anti-tuberculosis medications have significant interactions with clozapine with isoniazid being an inhibitor of the cytochrome P450 system, increasing the level of clozapine and rifampicin being an inducer of the cytochrome P450 system decreasing the level of clozapine. To date, clozapine is still the only evidence-based medication for treatment-refractory schizophrenia.

Orientation: A literature search was performed on several databases such as PubMed.

Findings: Patients on lower doses of clozapine could benefit from increasing the dosage of clozapine with monitoring based on serum clozapine and norclozapine levels and clinical response. Alternatives to rifampicin which have been used in case reports fluoroquinolones such as ciprofloxacin. However, there is concern about the development of fluoroquinolones resistance in *Mycobacterium tuberculosis*. Streptomycin is another anti-tuberculosis medication; however, there are concerns with streptomycin given the potential ototoxicity, hepatotoxicity as well as neuropsychiatric manifestations. Conversely, increased plasma concentrations have been reported with concurrent use of clozapine and isoniazid with such a scenario requiring close monitoring of the patient's clozapine and norclozapine level. Clozapine is associated with a dose-dependent seizure risk at a rate higher than that seen with most other antipsychotic drugs which should be closely monitored.

Conclusion: Several different management strategies are available based on small anecdotal case reports. No large study has been done to determine the best treatment option for such patients. Each treatment decision should be tailor-made based on a multidisciplinary approach for the best outcome.

Biography

Chao Tian Tang is a Psychiatry Resident with the National Healthcare Group, Singapore. He was graduated from the National University of Malaysia and is currently working at the Institute of Mental Health Singapore. He has experience working in high dependency psychiatric care units, adult neurodevelopmental services and general psychiatry units. He is actively involved in research and clinical work. His clinical interests include liaison psychiatry, neurodevelopmental disorders and old age psychiatry. He has published articles in the field of old age psychiatry and bibliometrics. He has attended and presented at conferences in fields such as intellectual disability and neurodevelopmental disorders.

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