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Diagnostic Dilemma in a Child with Tuberculous Meningitis on Haloperidol Therapy

Sir,

Haloperidol, a typical psychotropic drug of the butyrophenone family, is used for the treatment of various psychiatric illnesses and neurological disorders.[1,2] Some of the adverse effects of haloperidol overlap the symptoms of tuberculous meningitis (TBM), thus causing a diagnostic dilemma. We report a child with TBM who developed dystonic reaction secondary to haloperidol therapy.

A 7-month-old girl presented with low grade continuous fever since 1 month, lethargy since 10 days, and one episode of convulsion on the day of admission. Convulsion was focal involving right upper and lower limb lasting for 30 min and was followed by unconsciousness. Her father had pulmonary tuberculosis and was on treatment since 3 months. On admission, she was comatosed with a Glasgow coma scale of 7 (E2M3V2). She was hemodynamically stable with blood pressure 90/60 mmHg. Her weight was 4.9 kg and length was 57 cm (both below 5th percentile for age and sex). Mild pallor was present. Anterior fontanelle was non-pulsatile and bulging. There was no evidence of cranial nerve palsy. Spasticity was present in all four limbs. Deep tendon reflexes were brisk, and abdominal reflex was absent. Rest of the systemic examination was normal. Investigations revealed: hemoglobin 8.8 g/dl, total leucocyte count 12600/cm^3 (neutrophils 60% and lymphocytes 40%), and platelet count 3.1 lakhs/cm^3. Cerebrospinal fluid examination revealed 460 cells (neutrophils 40% and lymphocytes 60%), protein 160 mg and sugar 38 mg/dl. Mantoux test was positive. Computed tomography scan of brain was suggestive of TBM. Intravenous fluids, mannitol, dexamethasone, and antituberculous therapy were started. On the seventh hospital day, she developed choreoathetoid movements in both the upper limbs for which haloperidol (0.5 mg/day) was started. On the second day of haloperidol, she developed severe dystonia of all her four limbs. Her Glasgow coma scale score was same. The dilemma was whether the dystonia was due to complication of TBM or drug toxicity. In the first instance, dystonia will be associated with bradycardia, deteriorating sensorium, and hypertension. The child did not have the associated features. A repeat computed tomography

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scan showed similar features as the previous one. Hence, we considered the dystonia as a side effect of haloperidol therapy. This can be considered as probable/likely adverse drug reaction as per causality assessment of suspected adverse drug reaction.[3] The dose of haloperidol was reduced and trihexyphenidyl was added. The dystonia gradually decreased over 2 days and the patient was discharged.

Haloperidol is a highly potent neuroleptic drug due to its strong central antidopaminergic action. It blocks the dopaminergic action in the nigrostriatal pathways, resulting in extrapyramidal-motor side effects (dystonia, akathisia, tardive dyskinesia, neuroleptic malignant syndrome, and pseudo-parkinsonism).[4] Other side effects reported include hypotension, dry mouth and constipation, prolongation of the QT-interval, torsade de pointes, ventricular fibrillation, pneumonitis, rhabdomyolysis, acute renal failure, neutropenia, and pulmonary edema. Dopamine receptor antagonism, notably of the D2 receptor subtype, can cause akathisia, psychomotor agitation, anxiety, and restlessness.[1,4,5] Dystonia usually occurs within the first four days of haloperidol therapy but also may be seen within hours of a single dose. It occurs in about 10–30% of patients receiving haloperidol, and children are especially prone to develop severe generalized dystonic reactions.[4,5] Dystonic reactions can be quite distressing and occasionally may be life threatening. Spasmodic intermittent contractions of facial, neck, or back muscles are characteristically observed. It can result in bizarre grimaces, tongue protrusion, trismus, torticollis, opisthotonous, or respiratory difficulty.[4] Pharyngeal and laryngeal muscles spasm can lead to choking, respiratory distress, and asphyxia.[4,5] Oculogyric crisis with painful lateral or vertical deviation of the eyes and blepharospasm can also occur. Treatment includes intravenous/intramuscular benztropine or diphenhydramine. Other drugs found useful include trihexyphenidyl and diazepam. Benztropine prophylaxis during the initial 7 days of neuroleptic therapy decreases the incidence of dystonic reactions.[4]

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