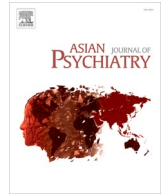




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Letter to the editor

Effectiveness of electroconvulsive therapy in acute management of delirious mania in COVID-19 positive woman in second trimester pregnancy



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ABSTRACT

Delirious mania has been described as a state of acute excitement, fluctuating sensorium, affective and catatonic symptoms. Electroconvulsive therapy (ECT) despite being an effective treatment modality in such cases, has been under-utilised during pregnancy, mainly due to safety concerns. Here, we report the effectiveness of ECT in acute management of delirious mania in a 24 weeks pregnant woman who also tested COVID-19 positive during hospitalisation. Patient presented with three weeks history of acute manic excitement with period of altered sensorium and catatonic symptoms with no response to trials of two antipsychotic agents. After organic causes ruled out, patient was planned for ECT while ongoing antipsychotic was continued. After the first ECT session, patient tested positive for COVID-19, though asymptomatic and had to be shifted to COVID-19 isolation facility. Complete resolution of psychiatric symptoms occurred after fifth ECT. All five ECT sessions, including those in COVID-19 isolation facility were carried out under supervision of a multidisciplinary team. None of the ECT sessions had any major adverse event. Symptom remission sustained even following ECT discontinuation. No neonatal or maternal adverse effects observed after an uneventful delivery at 35 weeks. Both mother and child continued to maintain well in follow-up period of one year on oral olanzapine. In this unusual concurrent presentation of mania, delirium and catatonic symptoms during second trimester pregnancy, we highlighted the effectiveness and safety of ECT as a viable treatment modality. Additionally, management challenges posed by patient testing COVID-19 positive and then, administering ECT in COVID-19 isolation facility using personal protective equipment by multidisciplinary team has been highlighted.

Dear Sir

Delirious mania has been described as a syndrome of acute excitement, fluctuating sensorium, affective symptoms along with signs and symptoms of catatonia (Jacobowski et al., 2013). ECT has consistently been reported as an effective treatment modality for management of severe manic states associated with catatonia (Jacobowski et al., 2013). However, there has always been safety concerns about use of ECT for management of acute psychiatric disorders during pregnancy and it has been found to be underutilised (Ward et al., 2018). Here, we report the effectiveness of ECT in acute management of delirious mania in COVID-19 positive woman in second trimester pregnancy.

1. Case report

A 27 year-old pregnant woman with 24 weeks period of gestation (POG), had three weeks history of acute onset irritability, decreased need for sleep, over-talkativeness with incomprehensible speech at times, easy distractibility, overplanning, grandeur ideations, increased activity levels with periods of excitement, unprovoked anger outbursts, disorganised and disinhibited behavior, instances of inappropriate laughter and crying episodes, self-neglect, poor food intake, disturbed bladder and bowel functions, with periods of confusion, altered sensorium, repetition of words heard, repetition of same words again and again, non-goal directed activities which showed no response to trial of oral risperidone (up to 4 mg) followed by oral olanzapine (20 mg for two weeks), presented to our hospital emergency department. On

examination patient was uncooperative, combative, disoriented to time and place, showed increased psychomotor activity, inappropriate smiling, spontaneous, irrelevant, incoherent, non-goal directed pressured speech with intermittent whisper along with echolalia, echopraxia, palilalia, perseveration, mannerisms, verbal, and motor stereotypy, forced grasping and automatic obedience. Following admission, all investigations (Complete Blood Count, Liver and Kidney Function Test, Serum Electrolytes, Thyroid Function Test, Diabetes in Pregnancy Study Group of India-DIPSI, Viral Markers, Autoimmune Profile) came out to be within normal limits except low levels of Vitamin D3 (8.67 ng/mL) and Vitamin B12 (22.1 pmol/L) and no marker of organic cause could be found. Baseline Brief Psychiatric Rating Scale (BPRS) score- 59, Young Mania Rating Scale (YMRS) score-41, Bush Francis Catatonia Rating Scale (BFCRS)-15 (reduced to 6 after lorazepam 2 mg i.v.- effect lasted for around 8 h). A working diagnosis of delirious mania was considered, and ongoing dose of oral olanzapine 10 mg bid was continued and lorazepam 2 mg i.v. hs along with vitamin D3, B12, iron and folic acid supplementation was started. Patient required physical restraints despite repeated doses of injectable haloperidol (up to 20 mg) to control severe agitation within first 24 h of hospital stay and thus, subsequently planned for ECT for acute symptom control and to prevent any maternal or fetal complication. After the complete obstetrics and pre-anesthesia work up, first session of ECT was given on 3rd day of admission. Prior to 1st ECT session, progesterone 200 mg bid was given for tocolysis followed by hydroxyprogesterone depot 500 mg once weekly deep intramuscular. Dexamethasone (6 mg) cover was also given for fetal

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lung maturity. We used bitemporal ECT thrice a week and all stimulations were given in supine position. (Charge-32mC to 120mC; constant current- 800 mA; pulse width-0.5 ms; frequency- 20 Hz; seizure duration- 15 to 40 s). Propofol (120 mg) and succinylcholine (40 mg) were given as anesthetic agents. Pre and post procedure maternal ultrasonography done for each ECT session.

Patient tested positive for COVID-19 during the routine pre-procedure testing before the second ECT session. Patient despite being asymptomatic had to be shifted out of general hospital psychiatry unit to a COVID-19 isolation facility as per the hospital policy to check the spread of COVID-19 to other patients. Regular oxygen saturation monitoring, fever charting was done as per COVID-19 management protocol at isolation facility. Subsequently, patient received four more ECT sessions in operation theatre at the COVID-19 isolation facility. All five ECT sessions were conducted in the presence of consultant anaesthesia, consultant obstetrician and neonatologist besides the psychiatry team. Continuous fetal heart rate monitoring was done by fetal medicine expert for all the ECT sessions. None of the ECT sessions had any major adverse event, although patient had mild bleed per vaginum after 2nd ECT session and transient fetal bradycardia during 4th ECT session. Patient started showing improvement following 3rd ECT session like having nine hours of uninterrupted sleep with resolution of agitation, violent outbursts, perseveration, echolalia and increased speech coherence, occasional verbal stereotypy, with improved appetite, self-care, bowel-bladder functions and concern about fetal well-being, mood, however, remained euphoric. Patient attained complete remission after five ECT sessions (YMRS-5, BPRS -24, and BFCRS -negative on screen) and was transferred back to general hospital psychiatry unit after testing negative for COVID-19 on 14th day of in-patient stay. Dose of lorazepam was tapered-off in view of excessive sedation following 5th ECT session. Patient continued to remain asymptomatic for COVID-19. No re-emergence of catatonic, affective or behavioral symptoms noted two weeks after discontinuation of ECT. Also, an MRI (Brain) done during 4th week of hospital stay revealed no abnormality. Patient was discharged after total of 4 weeks of hospital stay on tablet olanzapine 20 mg/day with complete remission of symptoms. Remission sustained in post-discharge period as well. Patient developed premature labour and delivered a healthy female baby (weight 2.84 kg) through vaginal delivery at 35 weeks POG. The child was observed in early neonatal period for any adverse effects due to in-utero antipsychotic exposure. Patient continued to maintain well during the post-partum period as well as nine months after child birth. Currently, taking olanzapine 10 mg/day and breast-feeding the baby and under one-monthly OPD follow-up.

2. Discussion

The presence of acute onset of symptoms with overlapping features of mania, delirium and catatonia in the background of no identifiable organic cause, favoured the diagnosis of delirious mania (Jacobowski et al., 2013). Our patient had shown rapid improvement with ECT, thus preventing certain life-threatening maternal and fetal complications like dehydration, pulmonary embolism, venous thrombosis, pneumonia, and pre-term labour. Similar response to ECT in similar clinical presentations had also been reported in the literature (Jacobowski et al., 2013; Pinna et al., 2015; Pierre et al., 2020). All the recommendations for use of ECT during 2nd trimester pregnancy were followed in our case as well (Ward et al., 2018). Another challenge in our case was patient's management in the COVID-19 isolation facility including administration of subsequent ECT sessions. The ECT machine had to be shifted to the COVID-19 isolation facility promptly and all next four ECT sessions were given in operation theatre at the COVID-19 facility in presence of multidisciplinary team of specialists, nursing officers and technicians under strict COVID-19 appropriate precautions and wearing personal protective equipment, with measures in place for any anticipated maternal or fetal adverse events. The nursing officers and ward staff in each six-hourly shift at COVID-19 facility were supervised by a rotatory

psychiatry resident doctor who also formed part of COVID-19 clinical care team. Similar challenges during ECT administration in a COVID-19 facility have also been highlighted for acute mania and severe depression both during second trimester pregnancy (Gannon et al., 2021; Guerra et al., 2021). Repeated video interviews by treatment team ensured continued monitoring of patient's clinical status. During the ward course as well as in the follow-up period, the ongoing antipsychotic (olanzapine 20 mg) was continued. The decision to not change the ongoing antipsychotic agent was taken so as to avoid maternal and fetal exposure to another antipsychotic agent and also to observe the response of ongoing antipsychotic agent which was started only two weeks back. Thus, acute symptom control and subsequent remission of symptoms in our patient can be attributed to ECT administration. Pinna et al. has also reported similar sustained remission state with long-term favourable maternal and fetal outcomes following ECT administration in severe manic catatonia during pregnancy (Pinna et al., 2015).

In this case, we reported an unusual concurrent presentation of mania, delirium and catatonia during second trimester pregnancy. We highlighted the effectiveness and safety of ECT as a viable treatment modality in acute psychiatric disorders during second trimester pregnancy where rapidity of response is warranted. An additional management challenge was due to patient requiring transfer to a COVID-19 isolation facility during in-patient care and thus, underlying the role of multidisciplinary team in administration of ECT and comprehensive patient care in COVID-19 facility attached to a tertiary care teaching hospital which had resulted in favourable outcome in context of this case.

Ethical consideration

Patient's and family members' written informed consent was taken prior to writing this report.

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Disclosure

The authors declare that there is no conflict of interest.

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