Progress in Neuro-Psychopharmacology & Biological Psychiatry 34 (2010) 546–547

Contents lists available at ScienceDirect

Progress in Neuro-Psychopharmacology & Biological Psychiatry

journal homepage: www.elsevier.com/locate/pnp

Letter to the Editor (Case report)

Electroconvulsive therapy in an adolescent pregnant patient

1. Introduction

Electroconvulsive therapy (ECT) has been increasingly used in both children and adolescents and case reports demonstrated its efficacy with minimal negative consequences (Rey and Walter, 1997). ECT may be considered in adolescents with severe mood disorders, high suicide risk and when other somatic treatment modalities are presumed risky (i.e. during pregnancy) as parallel to ECT indications in adults (Taieb and Cohen, 2000; American Academy of Child and Adolescent Psychiatry, 2004). Adolescents are not believed to be at additional risk from ECT (American Academy of Child and Adolescent Psychiatry, 2004). In a study on the long term effects of ECT on cognitive functions in adolescents, no measurable anterograd memory deficit was found 3.5 years after the ECT treatment. Also no differerence was found on the MMSE scores, attention section of the Weschler Memory Scale—Revised scores and the California Verbal Learning Test scores between the ECT and the comparison group (Cohen and Taieb, 2000). ECT treatment did not affect school and social functioning of adolescents (Taieb et al., 2002).

ECT is an effective treatment method throughout the pregnancy and during the postpartum period with a low level of risk (Rabheru, 2001; American Psychiatric Association, 2006). In ECT during pregnancy both the baby's and the mother's health should be considered. Here, we report an adolescent pregnant patient who was treated safely with ECT for major depression with psychotic features.

2. Case

A 16.5 year old female was admitted to a local health clinic with the complaints of vomiting and abdominal enlargement. Medical examination revealed pregnancy. She declared to have been sexually abused by several men, since age 12. She was taken under protection by Social Service and referred to Child and Adolescent Psychiatry Department. She was oriented to time, place and person and her neurological examination was normal. Prominent lack of self-care, decreased psychomotor activity, insomnia, poor attention and depressive mood were noted. She had auditory hallucinations, thoughts of guilt, reference and persecutory delusions. She was frequently agitating, punching her stomach and telling that she would like to get the baby out of her body. She was hospitalized and risperidone incremented to 4 mg/day in a week for her psychotic symptoms. She had not taken any psychiatric help before.

On admission, Hamilton Depression Rating Scale (HDRS) score was 32 (Hamilton, 1960). She was diagnosed major depressive disorder with psychotic features according to DSM IV criteria (American Psychiatric Association, 1994). Obstetrics and Gynecology consultation confirmed 29 weeks of healthy pregnancy. In a multidisciplinary conference with the attendance of forensic medicine and obstetrics consultants, it was decided to treat her with ECT. Written informed consent for ECT was provided by the patient's father. After an obstetrical evaluation, ECT was started on the 31st week of pregnancy. During ECT, some modifications had done such as elevating her right hip, providing external fetal cardiac monitoring during the session and avoiding excessive hyperventilation. It was administered three times a week, using the Thymatron System IV (Somatics, LCC, Lake Bluff, IL, USA) with bitemporal and brief pulse stimulation under anesthesia with propofol 1 mg/kg. Because the fact that pseudocholinesterase levels generally decline in pregnancy, cholinesterase levels were tested. As her cholinesterase level was low, muscle relaxant rocuronium was preferred. During seizures, the patient was ventilated through a face mask and oxygenation was monitored. Follow up of pregnancy was accomplished by obstetricians weekly with pelvic examinations and fetal assessment by ultrasonography examinations. Ten sessions of effective ECT were completed. Total duration of each seizure was 30 s or more. Fetal heart activity was monitored with ultrasonography by a radiologist during each ECT session. Only in one session fetal heart rate decreased below to 120 bpm for 2–3 s and in another session uterine contractions started following the seizure but ended within 3–5 min following the initiation of tocolitic treatment by the obstetrician. After the fifth session, a significant clinical improvement was observed. HDRS score decreased to 8. Risperidone was continued after ECT. However, two weeks after the 10th ECT session, the patient's depressive and psychotic symptoms reappeared. Anesthesiologists warned that the patient would go under serious risk —such as aspiration—by receiving anesthesia for ECT, because the pregnancy of the patient had progressed to 37 weeks. Thus, paroxetine 20 mg/day was added. Two weeks later the delivery was performed by a cesarean section without any complication on week 39. Cesarean section was prefered because the patient's psychiatric status was not aproppriate for a safe vaginal delivery. First and fifth minute Apgar scores were 10. No abnormality was observed in the neonatal evaluation. After delivery, paroxetine treatment increased to 40 mg/day. The patient's depressive and psychotic symptoms disappeared 2 weeks after delivery and HDRS score decreased to 11.

3. Discussion

In our patient, we started ECT treatment because there were severe psychotic symptoms, agitation, self-mutilation and hostile behaviors towards the baby. ECT in pregnancy could increase risk of spontaneous abortion, preterm labour or uteroplacental insufficiency (Miller, 1994). Although there are limited available data in the literature, it seems that ECT is an effective treatment for severe mental illness during pregnancy and that the risks to fetus and mother are low (Anderson and Reti, 2009). Before ECT procedure pregnant patients should be consulted by an obstetrician and during ECT external fetal cardiac monitoring is recommended (Rabheru, 2001). Following these precautions ECT is relatively safe and effective during pregnancy (Miller, 1994). Although an early relapse of depression following ECT has occurred in this case, such relapses do not indicate

0278-5846/$ – see front matter
doi:10.1016/j.pnpbp.2009.11.014

to discarding the ECT option since there are strategies to maintain remission in post ECT period. However we couldn't administered maintenance ECT after remission due to the advanced pregnancy.

The fear of possible adverse effects and the assumption that children and adolescents cannot fully understand and thus cannot properly consent to the treatment are often mentioned in the discussion of ECT for children and adolescents (Rey and Walter, 1997). However, ECT has been used in young people for almost half a century and the number of case reports supporting ECT in children and adolescents are increasing in current practice (Esmaili and Malek, 2007; Consoli et al., 2009). Clinical experience suggests that in a variety of severe conditions, ECT can be effective and safe and also sometimes 'life saving' in this population (Stein and Kurtsman, 2004).

4. Conclusion

ECT may be the treatment of choice in severely depressed and/or psychotic pregnant adolescent patients. The successful outcome of both the mother and the baby depends largely on the anesthetic and obstetric management during each ECT session.

References

American Academy of Child and Adolescent Psychiatry. Practice parameter for use of electroconvulsive therapy with adolescents. J Am Acad Child Adoles Psych 2004;43:1521–39.
American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed. Washington, DC: American Psychiatric Association; 1994.
American Psychiatric Association. Practice guidelines for the treatment of psychiatric disorders. Compendium 2006. Washington DC: American Psychiatric Association; 2006.
Anderson EL, Reti IM. ECT in pregnancy: a review of the literature from 1941 to 2007. Psychosom Med 2009;71:235–42.
Cohen D, Taieb O. Absence of cognitive impairment at long-term follow-up in adolescents treated with ECT for severe mood disorder. Am J Psychiatry 2000;157:460–2.
Consoli A, Boulicot V, Cornic F, Fossati P, Barbeau M, Cohen D. Moderate clinical improvement with maintenance ECT in a 17-year-old boy with intractable catatonic schizophrenia. Eur Child Adolesc Psychiatry 2009;18:250–4.
Esmaili T, Malek A. Electroconvulsive therapy (ECT) in a six-year-old girl suffering from major depressive disorder with catatonic features. Eur Child Adolesc Psychiatry 2007;16:58–60.
Hamilton M. A rating scale for depression. J Neurol Neurosurg Psychiatry 1960;23:56–62.
Miller LJ. Use of electroconvulsive therapy during pregnancy. Hosp Comm Psychiatry 1994;45:444–50.
Rabheru K. The use of electroconvulsive therapy in special patient populations. Can J Psychiatry 2001;46:710–9.
Rey JM, Walter G. Half a century of ECT use in young people. Am J Psychiatry 1997;154:595–602.
Stein D, Kurtsman L. Electroconvulsive therapy in adolescent and adult psychiatric inpatients—a retrospective chart design. J Affect Disord 2004;82:335–42.
Taieb O, Cohen D. Adolescent experiences with ECT. J Am Acad Child Adolesc Psychiatry 2000;39:943–4.
Taieb O, Flament MF, Chevret S, Jeammet P, Allilaire JF, Mazet P, et al. Clinical relevance of electroconvulsive therapy (ECT) in adolescents with severe mood disorder: evidence from a follow-up study. Eur Psychiatry 2002;17:206–12.

Burcu Serim
Department of Child and Adolescent Psychiatry, Faculty of Medicine, Dokuz Eylul University, İzmir, Turkey

Halis Ulaş*
Ayşegül Özerdem
Tunç Alkın
Department of Psychiatry, Faculty of Medicine, Dokuz Eylul University, İzmir, Turkey
*Corresponding author. Dokuz Eylül Üniversitesi Tıp Fakültesi, Psikiyatri AD, 35340, Balcova, İzmir, Turkey.
Tel.: +90 5553721728; fax: +90 232 2590541.
E-mail address: halis.ulas@deu.edu.tr(H. Ulaş).

14 August 2009