

Our anesthesia experience during electroconvulsive therapy in pregnant patients



Nossa experiência em anestesia durante terapia eletroconvulsiva em pacientes grávidas

Dear Editor,

The administration of remote location anesthesia, analgesia, and sedation practices to pregnant patients has increased in recent years. Psychiatric disorders emerging or reoccurring during pregnancy may cause severe problems for both the woman and the fetus. Psychotropic drugs used in the treatment of psychiatric disorders occurring during pregnancy have side effects on the mothers and fetuses. The American Psychiatric Association (APA) practice guidelines suggest electroconvulsive therapy (ECT) as a primary treatment for major depression and bipolar disorder during pregnancy. ECT has been reported as a treatment with high efficacy and low risk for the management of these disorders during all three trimesters of pregnancy as well as postpartum.¹

These case studies report our experience administering anesthesia to four pregnant women with psychiatric disorders who were scheduled for ECT treatment during pregnancy.

The women undergoing ECT treatment were diagnosed with bipolar disorder (two of them), atypical psychosis, and depression. All of the cases were evaluated by either an obstetrician/gynecologist or an anesthesiologist the day before treatment. The patients were monitored in the operating room with an electrocardiogram (ECG), a noninvasive blood pressure monitor, and peripheral oxygen saturation (SpO₂). All of the patients were given oxygen by mask at 4–6 L/min. To prevent aspiration, all of the patients were given an H₂-receptor antagonist 15–20 min before the procedure and this was continued throughout the operation. During the process, the fetal heart rates were constantly controlled with an ultrasound or doppler device by a senior obstetrics/gynecology assistant. The plasmacholinesterase levels and other routine blood values of the patients were measured before the procedure. Propofol and Lystenon were used for anesthesia induction and maintenance in all cases via mask ventilation with oxygen. The mean age of the patients was 28 (24–31) years, the mean gestational age was 23 weeks (12–28), and the mean number of ECT applications was 10 (8–13). No maternal or fetal complications occurred perioperatively. All of the pregnant women gave birth at the normal gestational age and the average Apgar score of the newborns was between 8 and 10. No complications were observed in the newborns during the one-month after birth follow-up period.

Choosing an anesthetic agent that has no maternal or fetal toxic effects is important in remote location anesthesia for pregnant women. In terms of teratogenic risk, ECT use in pregnancy is considered relatively safe. Propofol and methohexital are commonly used anesthetic drugs for ECT. The teratogenic effects related to these drugs have not been specified.² Propofol seems to be associated with some advantages in ECT practice, including lower rises in blood pressure and heart rate and faster postictal recovery in some measures.³ Succinylcholine is often used as a neuromuscular block during ECT.² Succinylcholine is not transferred to any extent across the placenta, and has little effect on the fetus. The amount of succinylcholine that crosses the placental barrier depends on the concentration inclination between the maternal and fetal circulation; thus, repeated high doses or the presence of atypical pseudocholinesterase may lead to newborn apneas and muscle relaxation.⁴ In our cases, we used propofol as a hypnotic agent and succinylcholine as a neuromuscular block.

All of the patients had unproblematic terminations to their pregnancies and the treatment did not have any adverse effects on the babies or the mothers.

Conflicts of interest

The authors declare no conflicts of interest.

References

1. Rabheru K. The use of electroconvulsive therapy in special patient populations. *Can J Psychiatry*. 2001;46:710–9.
2. İyilikçi L, İkiz C, Adıyaman E, et al. Remote location anaesthesia: our experience in pregnant patients (10 cases). *Turk J Anaesth Reanim*. 2013;41:65–7.
3. Rasmussen KG. Propofol for ECT anesthesia: a review of the literature. *J ECT*. 2014;30:210–5.
4. Maternal & fetal physiology & anesthesia. Morgan GE, Mikhail SM, Murray JM, editors. *Clinical anaesthesiology*. 5th ed. New York: McGraw-Hill Companies; 2013. p. 825–43.

Elif Doğan Bakı^{a,*}, Özlem Çetin Akıcı^a,
Halil İbrahim Güzel^b, Serdar Kokulu^a, Yüksel Ela^a,
Remziye Gül Sivacı^a

^a Department of Anesthesiology and Reanimation, Faculty of Medicine, Afyon Kocatepe University, Afyonkarahisar, Turkey

^b Department of Psychiatry, Faculty of Medicine, Afyon Kocatepe University, Afyonkarahisar, Turkey

* Corresponding author.

E-mail: elifbaki1973@mynet.com (E.D. Bakı).

Available online 28 October 2014

<http://dx.doi.org/10.1016/j.bjane.2014.07.001>