Rev Bras Anestesiol. 2017;67(2):221–222

REVISTA BRASILEIRA DE ANESTESIOLOGIA

Publicação Oficial da Sociedade Brasileira de Anestesiologia
www.sba.com.br

CLINICAL INFORMATION

Successful use of sugammadex for caesarean section in a patient with myasthenia gravis

Lokman Soyoral, Ugur Goktas*, Muhammed Bilal Cegin, Volkan Baydi

Yuzuncu Yil University, Faculty of Medicine, Department of Anaesthesiology and Reanimation, Van, Turkey

Received 14 July 2014; accepted 7 August 2014
Available online 22 November 2014

KEYWORDS
Myasthenia gravis;
Sugammadex;
Pregnancy

Abstract Myasthenia gravis is an autoimmune disorder that is characterized by muscle weakness that fluctuates, worsening with exertion, and improving with rest. Diagnosis of myasthenia gravis is made following clinical and physical examination and is confirmed by serum immunoassays to measure autoantibody levels. Myasthenia gravis especially when associated with pregnancy is a high-risk disease, and its course is unpredictable. We described the second report about use of sugammadex after rocuronium for a caesarean delivery with myasthenia gravis, but, unlike our case that formerly was diagnosed with myasthenia gravis, the patient was extubated on postoperative successfully and we did not encounter any respiratory problems.

PALAVRAS-CHAVE
Miastenia grave;
Sugammadex;
Gravidez

O uso bem-sucedido de sugamadex para cesariana em paciente com miastenia grave

Resumo Miastenia grave (MG) é uma doença autoimune caracterizada por fraqueza muscular que flutua, piorando com o esforço físico e melhorando com o repouso. O diagnóstico de MG é feito após exame clínico e físico e confirmado por imunoensaios séricos para medir os níveis de autoanticorpos. MG, especialmente quando associada à gravidez, é uma doença de alto risco e de curso imprevisível. Descrevemos o segundo relato sobre o uso de sugamadex após rocurônio para um parto cesário com miastenia grave, mas, ao contrário de nosso caso que foi previamente diagnosticado com miastenia grave, a paciente foi extubada com sucesso no pós-operatório sem qualquer problema respiratório.

* Corresponding author.
E-mail: mdugoktas@yahoo.com (U. Goktas).

http://dx.doi.org/10.1016/j.bjane.2014.08.008

Introduction

Myasthenia gravis (MG) is an autoimmune disorder affecting nearly 1 million individuals worldwide.[1] It is twice as common among women as it is among men.[2] This autoimmune disease is characterized by muscle weakness that fluctuates, worsening with exertion, and improving with rest. Diagnosis of MG is made following clinical and physical examination and is confirmed by serum immunoassays to measure autoantibody levels.[3,4] Qi et al. concluded that pregnant patients suffered from MG, with the incidence of 0.023% in a 17 year retrospective analysis that patients admitted to the hospital due to pregnancy.[5]

We described the second report about use of sugammadex after rocuronium for a caesarean delivery with MG, but, unlike our case that formerly was diagnosed with MG, the patient was extubated on postoperative successfully and we did not encounter any respiratory problems.

Case

A 28-year-old 76 kg woman was admitted at 39 weeks of gestation (G1P1). The Patient had been diagnosed 16 years ago as MG. She used pyridostigmine (60 mg/day) during 14 years. Physical examination was normal except proximal upper/lower extremity weakness (3/5). Anaesthesia was induced with propofol (2 mg/kg) and rocuronium (0.5 mg/kg). The endotracheal intubation was easily achieved 150 s after the administration of rocuronium. Anaesthesia was maintained with sevoflurane (2–2.5%) and oxygen/air (40–60%). A lively female infant was born. Physical features were normal (weight: 3300 g, length: 55 cm, head circumference: 34 cm, APGAR score: 6/8/10) and did not see any signs of muscular hypotonisity. MG was not observed in the newborn. The newborn was admitted to neonatal intensive care unit for surveillance. Duration of the operation was 20 min. Sugammadex was used (2 mg/kg) at the end of the surgery. Patient was extubated without problem in 2 min after sugammadex. The patient was transferred to normal ward after postoperative 1 h from recovery unit. On the third postpartal day, the patient could be dismissed in good clinical condition.

Discussion

Garcia et al.[6] described the first use of sugammadex after rapid sequence induction using rocuronium for a caesarean delivery in a patient recently diagnosed with MG. Unfortunately their patient had persistent muscle weakness that prevented extubation. They concluded that myasthenia may have exacerbated by both surgery and the initiation of treatment. But, in our case it was extubated successfully within 2 min after administration of sugammadex.

Nowadays authors recommendation on using sugammadex as the new strategy of muscle relaxant reversal seems to be a safe and reliable option in patients with muscular and neuromuscular diseases.[7] Because the main problem lies in titration of neuromuscular blocking agents as well as the risk of anti-cholinesterase overdose after reversal which may itself cause excessive muscle weakness and need for postoperative ventilation.[8]

Berlit et al.[9] concluded that MG especially when associated with pregnancy is a high-risk disease, and its course is unpredictable. Severe up to life-threatening conditions might occur especially due to generalized weakness, in particular respiratory insufficiency endangering the parturient as well as the newborn.

We concluded that a good result can be obtained with sugammadex to reach the preoperative respiratory effort in the pregnant patients with non-newly diagnosed MG who have preoperative good clinical condition for respiratory functions due to regularly received treatment.

Conflicts of interest

The authors declare no conflicts of interest.

References

1. Gilhus NE, Owe JF, Hoff JM, et al. Myasthenia gravis: a review of available treatment approaches. Autoimmune Dis. 2011;10:1–6.
2. Ferrero S, Esposito F, Biamonti M, et al. Myasthenia gravis during pregnancy. Expert Rev Neurother. 2008;8:979–88.
3. Ferrero S, Pretta S, Nicoletti A, et al. Myasthenia gravis: management issues during pregnancy. Eur J Obstet Gynecol. 2005;121:129–38.
4. Buckley C, Douek D, Newsom-Davis J, et al. Mature, long-lived CD4+ and CD8+ T cells are generated by the thymoma in myasthenia gravis. Ann Neurol. 2001;50:64–72.
5. Qi QW, Wang D, Liu JT, et al. Management of pregnancy with myasthenia gravis: 7 cases report. Zhonghua Fu Chan Ke Za Zhi. 2012;47:241–4 [in Chinese].
6. Garcia V, Diemunsch P, Boet S. Use of rocuronium and sugammadex for caesarean delivery in a patient with myasthenia gravis. Int J Obstet Anesth. 2012;21:286–7.
7. Schaller SJ, Fink H. Sugammadex as a reversal agent for neuromuscular block: an evidence-based review. Core Evid. 2013;8:57–67.
8. Mundada SD, Shah B, Atram S. Emergency cesarean section in a patient of myasthenia gravis: is neuraxial anesthesia safe? Saudi J Anaesth. 2012;6:430–1.
9. Berlit S, Tuschy B, Spaich S, et al. Myasthenia gravis in pregnancy: a case report. Case Rep Obstet Gynecol. 2012;2012:736024.