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CASE REPORT

Anesthesia for a Patient on Monoamine Oxidase Inhibitors

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ABSTRACT

Monoamine oxidase (MAO) inhibitors are frequently used for multidrug-resistant major depression, which is emerging as an epidemic in the modern era. Anesthesia during chronic use of MAO inhibitors is a matter of debate because of increased risk of drug interactions with various anesthetic drugs. Cardiac disorders contribute to perioperative and postoperative complications. Recent studies illustrate the safety of anesthesia without discontinuation of MAO inhibitors if sympathetic homeostasis is maintained and known drug interactions are avoided. In this case study, a 72-year-old male psychiatric patient on permanent treatment with tranylcypromine (30 mg/day) was admitted for bipolar hemiarthroplasty. After complete aseptic precautions, spinal anesthesia was achieved by 12.5 mg 0.5% heavy bupivacaine and 30 μg clonidine intrathecally. The anesthetic effect was adequate, but surgery was not completed timely and the effect of spinal anesthesia was weaned off, so general anesthesia was given and surgery was completed. There was no perioperative or postoperative complication. In conclusion, general or regional anesthesia for noncardiac surgery without discontinuation of MAO inhibitors may be safe after careful preoperative evaluation of the patient.

Keywords: Monoamine oxidase inhibitors, Spinal anesthesia, Tranylcypromine.

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BACKGROUND

Millions of people suffer from major depression all over the world. Approximately 15% of patients admitted for elective surgery in the United States were taking antidepressant treatment.[1] During long-term treatment with these drugs, an increased cardiovascular and hemodynamic risk of perioperative anesthesia has been recognized.[2,3] Due to side effects like cheese reaction, the use of monoamine oxidase (MAO) inhibitors is restricted to multidrug-resistant major depression. These patients may require regional or general anesthesia for elective or emergency surgery. Therefore, there is a need for discussion and experience of anesthesia in these patients, so this case report is presented to discuss the effect of anesthesia on a patient on long-term tranylcypromine (MAO inhibitor) therapy.

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CASE REPORT

In January 2016, bipolar hemiarthroplasty was planned in a 72-year-old male patient who was on tranylcypromine 30 mg/day and zolpidem 20 mg/day for the last 13 years. We advised him to stop his antidepressant treatment few weeks before surgery. But when he consulted his psychiatrist about discontinuation of antidepressant treatment few weeks before surgery, he revealed the need for continuation of antidepressant treatment. So after informed written high risk consent, we decided to administer low dose spinal anesthesia without discontinuation of MAO inhibitors.

The patient was examined an evening before surgery and was advised nil per oral 8 hours for solid foods and 4 hours for liquids. Tab. alprazolam 0.5 mg was given at night before surgery. On the day of surgery, the patient received tranylcypromine 30 mg and zolpidem 20 mg as usual and was shifted in the operation room. We attached all the standard monitors to the patient and started intravenous fluid (Ringer Lactate) and preloading was done. Premedication was given in the form of inj. medazolam 1.0 mg intravenously (IV). With all aseptic precautions, subarachnoid block was given in lateral position with the help of 27G spinal needle and 12.5 mg 0.5% bupivacaine heavy, and 30 μg clonidine was injected. Anesthetic effect was adequate after 5 minutes. Stable vital parameters were recorded continuously. Surgery was running smoothly, but due to some complication, it was not completed timely and the effect of spinal anesthesia was weaning off. So we decided to administer general anesthesia, and the patient was induced with injection. Fentenyl 50 mg IV and injection. Propofol 100 mg IV, and 7.0 I.D. orotrachial tube was inserted under relaxation with inj. Atracurium 25 mg IV. Anesthesia was maintained with oxygen 33%, nitrous oxide 66%, isoflurane 1.0%, and intermittent injection. Atracurium 5 mg IV. Stable vital parameters were recorded throughout the surgery. The intraoperative period was uneventful. At the end of the surgery, the patient was reversed with injection. Neostigmine 2.5 mg and injection Glycopyrolate 0.5 mg IV. Extubation was done successfully, and

the patient was shifted to the postoperative ward with stable vitals. The patient had continued his antidepressant treatment since the first postoperative day. There was no postoperative complication.

DISCUSSION

It has been seen that a recent discontinuation of MAO inhibitors may not help in decreasing the risk of hypotension. Discontinuation of MAO inhibitors is recommended for at least 4 weeks preoperatively to restore MAO activity.[4] Many studies have shown that discontinuation of MAO inhibitors for such a long time before surgery may be a high risk for severe relapse of depression.[5,6]

Cases have been reported using general and regional anesthesia for noncardiac surgery in patients on MAO inhibitors without perioperative or postoperative complications.[7,8] However, fatal cardiac outcomes have been reported in general anesthesia for cardiac surgery in patients on MAO inhibitors.[9,10] It was a good decision to administer spinal anesthesia for bipolar hemiarthroplasty for this patient on long-term antidepressant treatment with tranylcypromine. The patient was informed about the risks of the intervention. Cooperation for spinal anesthesia was also a big problem in this depressed patient. It was also important that treatment with tranylcypromine was essential to avoid undue psychiatric event. The risk of exacerbation of severe depression after discontinuation of tranylcypromine was rated higher compared to the additional tranylcypromine-related risks of anesthesia. Accordingly, spinal anesthesia with subsequent general anesthesia was conducted without perioperative or postoperative complications. Single-shot low-dose bupivacaine was found to be safe with regard to the speed of sympathetic blockade despite the fact that continuous spinal anesthesia was more recommended.[11] The single-shot technique was chosen for practical reasons. Midazolam and other benzodiazepine drugs are supposed to be safe with concurrent use of MAO inhibitors.[12]

No direct sympathomimetics were required in our case. Phenylephrine was used by other workers for perioperative hypotension in epidural anesthesia;[7,13] however, it was suggested that phenylephrine exhibits partly indirect sympathomimetic activity and can be substituted by norepinephrine.[14] Hypertension crisis may be seen with indirect sympathomimetics used for neuraxial blockade-induced hypotension in patients on MAO inhibitors.[12] Many studies have shown that tranylcypromine is safe at therapeutic doses.[15,16]

CONCLUSION

General and regional anesthesia are safe interventions in psychiatric patients on long-term multidrug-resistant antidepressant therapy (MAO inhibitor treatment) after careful preanesthetic checkup and proper consultation with the psychiatrist.[3] Discontinuation of MAO inhibitors for regional anesthesia is not essential as also discussed for general anesthesia.[12,17,18] However, the risk should be higher in patients who are being treated with MAO inhibitors despite contraindications. Moreover, it has been proved that increased psychiatric risk in a patient treated with MAO inhibitors outweighs the increased perioperative risk from continuing treatment during noncardiac surgery.

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