



## A CASE REPORT: DESVENLAFAXINE AND ANAESTHESIA

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<p><b>Article Info</b> Received 13/06/2015 Revised 20/06/2015 Accepted 21/06/2015</p> <p><b>Key words:</b> Anesthetic considerations, Antidepressant, Desvenlafaxine.</p>	<p><b>ABSTRACT</b> Desvenlafaxine succinate is a serotonin-norepinephrine reuptake inhibitor which is now days being frequently used as an antidepressant medication. Psychiatric illness is common and anaesthesiologists frequently encounter patients posted for both elective and emergency surgery on a wide range of drugs which maybe unfamiliar to them. These drugs may have undesirable side effects and potential interactions that the anaesthesiologist should be aware of. Desvenlafaxine succinate is one such drug. I present a case report wherein a 40 year old lady taking Desvenlafaxine was posted for left radial head excision due to fall from height.</p>
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### INTRODUCTION

Psychiatric illness is on the rise worldwide and so is the availability of various antidepressants. An updated knowledge of multiple interactions and side effects of these drugs is essential for safe perioperative management.

### CASE REPORT

A 40 year old female patient weighing 68 kilograms was admitted to the hospital with fracture left radius bone after fall from height. She was posted for left radial head excision. She was known hypertensive, hypothyroid and was suffering from depression. She was on tab losartan 50mg, Thyronorm 25mg, Desvenlafaxine 50 mg, Clonazepam 5mg, Zolpidem 10 mg. Airway examination was normal. Routine blood investigations and thyroid function tests were normal. The patient was planned to undergo surgery under Brachial plexus block via Supraclavicular approach since she was taking Desvenlafaxine which has multiple interactions. Informed consent of the patient and her attendants was taken. The patient was received into the operation theater and monitors attached. Baseline pulse, blood pressure, ECG, SPO2 were noted. Under all aseptic precautions Inj. Xylocaine 2% plain 10 ml and Inj. Bupivacaine 0.5% 30ml were given for Brachial plexus block via

Supraclavicular approach after eliciting paresthesia and negative aspiration. The surgery lasted for one and half hours. Persistently high blood pressure was recorded intraoperatively for which inj. Midazolam 2mg was given. Not much reduction in blood pressure was noted. NTG infusion was started at 1microgram /kg/min and later increased to control the blood pressure. Blood loss was not much as tourniquet was being used. The postoperative period was uneventful.

### DISCUSSION

Mental depression is the most common psychiatric disorder affecting 2% - 4% of the population [1]. The management of patients on antidepressants medications in the perioperative period is a challenge. Challenges faced by the anaesthetist include ever growing spectrum of the antidepressant drugs, absence of guidelines of all drugs, significant perioperative implications, the underlying illness itself and the implication of the surgical condition and the surgery. Selective Serotonin Reuptake Inhibitors, Tricyclic antidepressant, Monoamine oxidase inhibitors and atypical antidepressants are the various classes of antidepressants available today.



Desvenlafaxine succinate, is an atypical antidepressant. It was approved by FDA to be used as an antidepressant in February 2008 [2]. It is the major active metabolite of the antidepressant Venlafaxine. It works by blocking the reuptake of both serotonin and norepinephrine thereby increasing their concentration in the synapse. It is approximately 10 times more potent at inhibiting serotonin uptake than norepinephrine uptake [3]. The recommended dose ranges from 50 to 100 mg. Dose modification is done for both renal and hepatic impairment. Significant points of difference, compared with Venlafaxine, are once-daily dosing and the achievement of steady-state plasma concentrations within 4 to 5 days [4]. Desvenlafaxine is also used for control of vasomotor symptoms of menopause, to treat anxiety disorders, obsessive-compulsive disorder, attention deficit hyperactivity disorder, chronic neuropathic pain and fibromyalgia syndrome. Some of its side effects which have perioperative implications are hypertension, abnormal bleeding, serotonin syndrome, increased cholesterol and triglyceride levels, hyponatremia, seizures, nausea, dizziness, somnolence, mydriasis leading to increased intraocular pressure, suicidal tendency. Interstitial lung disease and eosinophilic pneumonia have also been reported. It is also known to cause delayed gastric emptying in rats due to increase in plasma norepinephrine levels. Norepinephrine has been reported to inhibit gastric emptying [5]. Desvenlafaxine in combination with opioids may cause potentially life threatening Serotonin syndrome. Serotonin syndrome can also occur when patient is taking other drugs that increase serotonin such as street drugs MDMA/"ecstasy," St. John's wort, certain antidepressants (including other SNRIs such as duloxetine, SSRIs such as fluoxetine/paroxetine), tryptophan. It may be difficult to distinguish Serotonin syndrome from Neuroleptic malignant syndrome in patients exposed to both serotonergic drugs and neuroleptic drugs.

Desvenlafaxine in combination with NSAIDs, clopidogrel, warfarin, dabigatrin, and other anticoagulants may lead to life threatening hemorrhage. It also reduces the

concentration of midazolam. The addition of epinephrine to local anesthetic solution should probably be avoided in patients on antidepressants which are inhibitors of norepinephrine uptake. One should avoid taking MAO inhibitors with this medication as serious (possibly fatal) drug interaction may occur. Using Desvenlafaxine together with alcohol can increase nervous system side effects such as dizziness, drowsiness, and difficulty concentrating. Some people may also experience impairment in thinking and judgment. Desvenlafaxine is not a substantial inhibitor of CYP2D6 activity thus does not affect biotransformation of other drugs [6]. This is a big advantage. Desvenlafaxine is pregnancy category C drug. It can cause problems in newborns if taken during pregnancy or while breastfeeding.

Abrupt discontinuation or dose reduction has been associated with the appearance of new symptoms. While these events are generally self-limiting, there have been reports of serious problems. A gradual reduction in the dose rather than abrupt cessation is recommended whenever possible. There are no clear cut guidelines regarding continuation/discontinuation before surgery. We did not have a choice since patient was posted for emergency surgery.

## CONCLUSION

Desvenlafaxine succinate has multiple interactions with other drugs which if left unknown may lead to serious perioperative complications. An anesthetist must have updated knowledge of side effects and interactions of all the drugs patient is taking for optimum perioperative management and outcome. More cases and search of literature is required to enhance our knowledge regarding this new antidepressant.

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