Case Report

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Escitalopram-Induced Bradycardia in Elderly Individuals: A Case Series Report

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ABSTRACT:

Escitalopram-induced bradycardia in elderly individuals: a case series report

The authors report on three elderly patients treated with escitalopram, 10 mg/day, who presented with marked sinus bradycardia. The bradycardia was clinically symptomatic or asymptomatic and disappeared within 24 hours after escitalopram was discontinued. Clinicians should be cautious about cardiac effects when using a selective serotonin reuptake inhibitor in elderly people, even at a low dose.

Keywords: escitalopram, bradycardia, elderly

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INTRODUCTION

Selective serotonin reuptake inhibitors (SSRIs) are widely prescribed for the treatment of depression, anxiety disorders, and many other psychiatric and chronic disorders. During the last 10 years, there has been an increase in the use of escitalopram as well as an associated increase in overdoses. One advantage of this antidepressant group is that it appears to be relatively safe in terms of side effects and overdoses compared with older tricyclic antidepressants, especially in elderly individuals[1]. The majority of SSRI overdoses cause minor effects characterized by mild to moderate serotonin toxicity, although occasionally, large overdoses cause seizures[2]. There are few published reports of the effects of escitalopram overdose. However, cardiac QT-interval prolongation and bradycardia have been reported, mainly with citalopram and, more recently, in case reports of escitalopram toxicity[2-10]. This case series report suggests that escitalopram may induce bradycardia in some elderly patients.

CASE REPORTS

Patient 1: A 65-year-old man without any significant medical history was admitted to the emergency room because of sudden-onset vomiting, vertigo, dysarthria, ataxia, and weakness of his left side. Neurological examination revealed left facial palsy, dysarthria, absence of gag reflex, and left pharyngeal arch elevation and hemiparesis. Family history was positive for stroke on the maternal side and for heart disease on the

paternal side. He had been taking only escitalopram, 10 mg/day, for 10 days to treat depression. Electrocardiography (ECG) at admission was abnormal, demonstrating bradycardia (30–40 beats per min (bpm)) and QT prolongation. Diffusion-weighted magnetic resonance imaging (MRI) confirmed an acute ischemic lacunar infarction of the left pons. Doppler ultrasonography and cerebral MR angiography were both normal. Following cessation of escitalopram, heart rate was 50–60 bpm.

Patient 2: A 70-year-old female patient was admitted to the outpatient clinic with depressive symptoms and was diagnosed with major depression. She had no history of any treatment with antidepressants or other medications. After administration of 5 mg/day escitalopram, the patient's blood pressure and pulse rate were mildly reduced, and she had daily presyncopal episodes. After 1 week of treatment, the dose of escitalopram was increased to 10 mg/day, and the patient complained about dizziness. In this case, we found that presyncopal episodes lasted longer and that both hypotension and bradycardia increased. The ECG described a normal sinus rhythm, but heart rate was 30–40 bpm. These symptoms disappeared within 24 hours after escitalopram treatment was discontinued. The patient presented a incidentally discovered severe asymptomatic sinus bradycardia with a heart rate of 45 bpm, and her blood pressure was stable at 120/70 mmHg. Escitalopram was stopped immediately. Within 24 hours, the ECG revealed a regular sinus rhythm with a heart rate of 60 bpm. During follow-up, no complications were observed, and the sinus cardiac rhythm was maintained. Cardiac evaluation revealed a slightly dilated cardiomyopathy, more noticeable in the left ventricle. The depressive state was later treated with 150 mg a day venlafaxine, a specific inhibitor of serotonin and noradrenaline uptake, without any further occurrence of bradycardia and with a good clinical response.

Patient 3: A 75-year-old female patient arrived at our outpatient clinic with symptoms of mild memory impairment, crying, and depressive symptoms. The patient, a retired teacher, had no known diseases or chronic use of medicine. She scored 19 on the Beck Depression Inventory, 24 points on the Mini-Mental State Exam and 21 points on the Montreal Cognitive Assessment. Escitalopram treatment, 5 mg/day, was started for depression and mild cognitive impairment, but this caused a heart rate of about 40 bpm during the first week. As a result, treatment was continued with venlafaxine.

DISCUSSION

We report on three elderly individuals experiencing sinus bradycardia after escitalopram treatment; the sinus bradycardia resolved after the discontinuation of escitalopram.

There is limited information on the risk of QT prolongation and cardiac arrhythmias with escitalopram. Previous studies have shown that QT prolongation and torsades de pointes are associated with citalopram overdose[10-13], but it is unclear whether escitalopram has a similar association with QT prolongation. Three cases of QT prolongation with escitalopram overdose are presented[4-6], and a retrospective review of escitalopram overdoses from a regional poison center revealed ECG changes. However, specific ECG abnormalities were not reported[8]. No animal studies on the effect of the citalopram enantiomers on the QT interval have been reported, making it difficult to determine whether the QT abnormalities seen with citalopram are due to the S-enantiomer, R-enantiomer, or both. It is therefore important to confirm that escitalopram poisoning causes QT prolongation in a larger series of cases and estimate the frequency of abnormal QT intervals.

Elderly patients have a higher exposure to both citalopram and escitalopram due to age-related declines in metabolism and elimination. The maximum dose of both medicines has thus been restricted in patients older than 65 years[14]. We also

speculate that the initiation of antidepressants inhibiting CYP2D6 would be associated with an increased risk of bradycardia-related symptoms and hospital visits among elderly patients. Atherosclerosis and coronary and cerebrovascular diseases are frequently observed in elderly individuals, which is why bradycardia may present in asymptomatic patients who are treated with an SSRI. As elderly individuals with anxiety and those whose heart rate is about 50–60 bpm are treated with SSRIs, their levels of anxiety decrease. Along with this response, their heart rates, which are already at the lower limit, also decrease, which can produce bradycardia.

The issue of whether comorbid cerebrovascular or cardiovascular disorders should be a consideration in the choice of antidepressants remains to be clarified. Nevertheless, these cases provide anecdotal evidence that caution is warranted when using citalopram/escitalopram to treat patients prone to cardiovascular side effects due to SSRI use.

In conclusion, this case series report suggests that escitalopram may induce bradycardia in some elderly patients. Although this type of bradycardia produces no clinical consequences in most patients, thereby allowing classification of escitalopram as safe, it produces serious consequences in some cases. Clinicians should be aware of this possibility and perform clinical monitoring of heart rate, ECG, and blood pressure when escitalopram treatment is introduced, particularly in elderly patients with suspected or known underlying heart disease. Another SSRI or noradrenergic medicine should be chosen for patients with previous bradycardias whose heart rates are normally 50–60 bpm.

References:

1. Barbey JT, Roose SP. SSRI safety in overdose. J Clin Psychiatry 1998;59(Suppl 15):42-8.
2. Olsen DG, Dart RC, Robinett M. Severe serotonin syndrome from escitalopram overdose [abstract]. Clin Toxicol 2004;42:744.
3. Isbister GK, Bowe SJ, Dawson A, et al. Relative toxicity of selective serotonin reuptake inhibitors (SSRIs) in overdose. J Toxicol Clin Toxicol 2004;42(3):277-85. [CrossRef]
4. Scharko AM, Schumacher J. Prolonged QTc interval in a 14-year-old girl with escitalopram overdose. J Child Adolesc Psychopharmacol 2008;18(3):297-8. [CrossRef]
5. Yuksel FV, Tuzer V, Goka E. Escitalopram intoxication. Eur Psychiatry 2005;20(1):82. [CrossRef]
6. Baranchuk A, Simpson CS, Methot M, et al. Corrected QT interval prolongation after an overdose of escitalopram, morphine, oxycodone, zopiclone and benzodiazepines. Can J Cardiol 2008;24(7):e38-e40. [CrossRef]
7. Huska MT, Catalano G, Catalano MC. Serotonin syndrome associated with the use of escitalopram. CNS Spectr 2007;12(4):270-4.
8. Forrester MB. Escitalopram ingestions reported to Texas poison control centers, 2002-2005. Hum Exp Toxicol 2007;26(6):473-82. [CrossRef]
9. Beyenburg S, Schönegger K. Severe Bradycardia in a Stroke Patient Caused by a Single Low Dose of Escitalopram. Eur Neurol 2007;57(1):50-1. [CrossRef]
10. van Gorp F, Whyte IM, Isbister GK. Clinical and ECG Effects of Escitalopram Overdose. Ann Emerg Med 2009;54(3):404-8. [CrossRef]
11. Chan A, Isbister GK, Kirkpatrick CM, et al. Drug-induced QT prolongation and torsades de pointes: evaluation of a QT nomogram. QJM 2007;100(10):609-15. [CrossRef]
12. Isbister GK, Friberg LE, Stokes B, et al. Activated charcoal decreases the risk of QT prolongation after citalopram overdose. Ann Emerg Med 2007;50(5):593-600. [CrossRef]
13. Friberg LE, Isbister GK, Duffull SB. Pharmacokinetic pharmacodynamic modelling of QT interval prolongation following citalopram overdoses. Br J Clin Pharmacol 2006;61(2):177-90. [CrossRef]
14. Kurdyak PA, Manno M, Gomes T, et al. Antidepressants, metoprolol and the risk of bradycardia. Ther Adv Psychopharmacol 2012;2(2):43-9. [CrossRef]