Selective serotonin reuptake inhibitors and oral bleeding complications after invasive dental treatment

Joel J. Napeñas, DDS,[a] Catherine H.L. Hong, BDS, MS,[b] Eric Kempter, BSc,[c]
Michael T. Brennan, DDS, MHS,[d] Scott L. Furney, MD,[e] and
Peter B. Lockhart, DDS,[f] Charlotte, NC, and Singapore, Singapore
CAROLINAS MEDICAL CENTER AND NATIONAL UNIVERSITY OF SINGAPORE

Objective. The purpose of this study was to examine the frequency of oral bleeding complications after invasive dental procedures in patients taking selective serotonin reuptake inhibitor (SSRI) medications.
Study design. In this retrospective cohort study, we included dental patients who had invasive dental treatment and were taking an SSRI medication. Data collected included demographics, medical history, dental visits and procedures, and use of adjunctive measures to control bleeding. Primary outcomes included documentation of return visits or phone calls to the dental clinic or emergency department (ED) for oral bleeding, and oral bleeding or use of blood products for inpatients.
Results. There were 92 patients taking SSRIs who had 145 invasive procedure visits, consisting of extractions, implant surgery, alveoloplasty, periodontal surgery, subgingival scaling and root planning, and biopsy. There were 110 extraction visits yielding a total of 167 extractions. Among all patients, there was 1 return visit to the clinic and 1 telephone call with a chief complaint of oral bleeding.
Conclusions. The frequency of oral bleeding complications after invasive dental treatment is low to negligible in patients on SSRI medications. **(Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2011;112:463-467)**

Selective serotonin reuptake inhibitors (SSRI) are commonly prescribed for a variety of mood and affective disorders, such as depression, anxiety disorders, obsessive-compulsive disorder, and premenstrual dysphoria. They are generally thought to be safer and better tolerated than other antidepressant medications.[1] Six of the top 200 prescribed medications in 2003 were within this category of medications, with total sales of more than $8 trillion.[2] More recently, the similar selective serotonin norepinephrine reuptake inhibitors (SSNRI) and selective norepinephrine reuptake inhibitors (SNRI) have displaced SSRIs in terms of prescription frequency; however, escitalopram has remained within the top 15 prescribed medications in 2009 with sales of more than $2 billion.

[a]Director, General Practice Residency, Department of Oral Medicine, Carolinas Medical Center.
[b]Assistant Professor, Department of Preventive Dentistry, Faculty of Dentistry, National University of Singapore, Singapore.
[c]Student, Department of Oral Medicine, Carolinas Medical Center.
[d]Director, Oral Medicine Residency, and Associate Chair, Department of Oral Medicine, Carolinas Medical Center, Charlotte, NC.
[e]Chair, Department of Internal Medicine, Carolinas Medical Center.
[f]Chair, Department of Oral Medicine, Carolinas Medical Center.
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SSRIs have been associated with bleeding complications, such as impaired platelet aggregation, prolonged bleeding time, petechiae, ecchymosis, hematoma, bruising, epistaxis, increased menstrual flow and vaginal bleeding, and gingival bleeding.[3-5] Although the exact mechanism is unknown regarding the effect of SSRIs on platelets, the current theory involves inhibition of serotonin reuptake into platelets.[6] Essential to the formation of clots is the release of serotonin from platelets, which, in combination with other prothrombic factors, such as adenosine diphosphate and prothrombin, potentiate platelet aggregation. However, platelets do not produce their own serotonin, thereby relying on uptake from the bloodstream through transporters on their cell surface. A decrease in platelet intracellular serotonin theoretically would result in a defect in platelet aggregation.

The high frequency of use of SSRIs should be of concern to the dental practitioner performing invasive procedures that induce tissue damage and bleeding, but there are no studies that examine the risk of oral bleeding in patients taking these medications. The purpose of this study was to examine the frequency of oral bleeding complications after invasive dental procedures in patients taking SSRI medications.

MATERIAL AND METHODS

In this retrospective cohort study, we screened for patients in our hospital-based dental clinic population

Table I. List of selective serotonin reuptake inhibitors screened for to determine patient inclusion in the study

Citalopram (Celexa, Cipramil, Emocal, Sepram, Seropram)
Escitalopram oxalate (Lexapro, Cipralex, Esertia)
Fluoxetine (Prozac, Fontex, Seromex, Seronil, Sarafem)
Fluvoxamine maleate (Luvox, Faverin)
Paroxetine (Paxil, Seroxat, Aropax, Deroxat, Paroxat)
Sertraline (Zoloft, Lustral, Serlain)
Dapoxetine

who were taking 1 or several among a list of SSRIs (Table I) at the time of dental treatment. This was accomplished by performing a chart review of patient records and examining documentation of the medical history. For inclusion in the study, patients had to fulfill both criteria of (1) the reported use of SSRI medications at the time of dental treatment, and (2) having had at least 1 invasive dental procedure, which included deep subgingival scaling and root planing, periodontal surgery, dental extraction(s), dental implant surgery, alveoloplasty, or tissue biopsy (soft or hard tissue). We excluded patients on systemic anticoagulant therapy (e.g., warfarin, heparin, enoxaparin) or with primary systemic coagulopathies (e.g., hemophilia). Data were extracted from dental records, inpatient medical records, and electronic patient records for our hospital system, which encompasses multiple hospitals and outpatient clinics in the region. We obtained institutional review board approval before the initiation of this study.

From the dental record, the following information was collected: demographics; medical history and medications; social history; presence of preoperative infection at any dental visit as evidenced by swelling, purulence, or periapical radiolucency; number and type of invasive dental visits; type of dental procedures performed; use of adjunctive perioperative local hemostatic measures (e.g., sutures, gelatin compressed sponge, topical thrombin); and documentation of postoperative visits or phone calls to the dental clinic for bleeding complications. Extractions were classified as surgical if there was documentation of a soft tissue flap raised, handpiece or surgical drill used for tooth sectioning or bone removal, or the term "surgical extraction" was included in the progress note. From the medical record, the following information was collected: number and type of emergency department (ED) visits, documentation of postoperative bleeding complications, laboratory values, if available, and pre- and postoperative blood products used.

Primary outcome measures of postoperative bleeding included documentation of return visit or phone call to the dental clinic or ED with chief complaint of postoperative bleeding, documented bleeding for more than 24 hours for inpatients, or postoperative adjunctive local or systemic hemostatic measures. We documented the total number of ED visits, both dental and nondental related, within a time frame from the first dental visit through 1 month after last dental visit.

Table II. Patient demographics, medical history, social history, and medication profile

No. of patients	92
Demographic data	
Mean age, y ± SD	51.2 ± 15.2
Gender, n (%)	
Male	21 (23%)
Female	71 (77%)
Race (n)	
Caucasian	52
African American	39
Hispanic	1
Inpatient, n	3
Medical history, n	
Psychiatric history	
Depression	34
Bipolar disorder	5
Anxiety disorder	20
Obsessive compulsive disorder	3
Schizophrenia	2
Other medical history	
Hypertension	54
Type II diabetes	11
Social history	
Current alcohol use, n (%)	14 (15%)
Current tobacco use, n (%)	25 (27%)
Mean tobacco pack years,* y ± SD	16.1 ± 10.8
SSRI medication, n	
Citalopram	8
Escitalopram oxalate	17
Fluoxetine	26
Fluvoxamine maleate	3
Paroxetine	10
Sertraline	30
Concurrent NSAID use, n (%)	32 (35%)

NSAID, nonsteroidal anti-inflammatory drug; SSRI, selective serotonin reuptake inhibitor.
*Tobacco pack years is defined as the number of packs of cigarettes per day multiplied by the number of years of tobacco use.

RESULTS

We identified 92 patients taking SSRIs who met our inclusion criteria. The mean age was 51.2 years (SD = 15.2), with 77% female (n = 71) (Table II). Only 3 individuals (3%) were hospital inpatients during their dental treatment. Psychiatric history included 34 patients (37%) with depression, 20 (22%) with anxiety disorder, 5 (5%) with bipolar disorder, 3 (3%) with obsessive compulsive disorder, and 2 (2%) with schizophrenia. In addition, 4 patients were mentally handicapped and 1 patient was autistic. Other significant