

Oral surgery procedures in patients on anticoagulants. Preliminary report

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Abstract

Introduction: Patients who receive oral anticoagulants generally undergo oral surgery procedures, especially teeth extractions. Because the withdrawal of anticoagulant therapy may lead to severe thromboembolic complications, an attempt to perform oral surgery procedures without discontinuation of anticoagulation, based on the published reports, was made.

Aim: To present our own experience with the maintenance of anticoagulant therapy with oral coumarin-type drugs and/or acetylsalicylic acid in patients with cardiovascular diseases who undergo oral surgical procedures.

Methods: The group consisted of 40 patients (12 females and 28 males) aged 39-83 years (mean age 58 years) hospitalised in the 1st Department of Oral and Maxillofacial Surgery in Zabrze from January 2000 to June 2003. The following paper presents the results of the treatment of patients with cardiovascular diseases, who are on oral coumarin-type anticoagulants and/or acetylsalicylic acid, performed without modification of the treatment/anticoagulant therapy.

Results: The level of anticoagulation defined as the INR (International Normalized Ratio) and measured in all patients on the day of surgery ranged from 1.0 to 4.0. Activated Partial Thromboplastin Time (aPTT) was between 26 and 88 seconds, with a reference range in healthy subjects of 42-65 seconds. The prothrombin time ratio ranged from 26% to 100% (N: 80-120%). Only 8% of patients developed minor bleeding complications which were promptly controlled with additional haemostasis.

Conclusions: Teeth extractions and other oral surgical procedures may be performed without discontinuation of anticoagulants.

Key words: anticoagulants, oral surgery

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Introduction

Patients who receive oral anticoagulants generally undergo oral surgery procedures, especially teeth extractions. Because of the systemic comorbidities and the possibility of complications, they are treated in a hospital setting, where medical care is provided 24 hours a day. Such an approach enables patients to be referred for specialist consultations and increases the safety of the procedure. Consulting cardiologists recommend withdrawing anticoagulants or reducing their dose a few days before the oral surgery procedure. In many cases oral anticoagulants are replaced with heparin in pre- and postoperative periods [1].

Recently in some centres there has been a tendency to continue oral anticoagulants without or with a reduction of their dose, and efforts are focused on improving local haemostasis. In such cases guidelines suggest the use of surgical sutures, fibrin glues, sponges and irrigation of the wound with tranexamic acid solution. In cases of prolonged postoperative bleeding, coagulation may be enhanced with oral gelatin or vegetable pectin or parenteral etamsylate or aprotinin administration [2].

Because the withdrawal of anticoagulant therapy may lead to severe thromboembolic complications, an attempt to perform oral surgery procedures without

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discontinuation of anticoagulation, based on the published reports, was made [3-7].

Aim

The aim of the study is to present our own experience with the maintenance of anticoagulant therapy with oral coumarin-type drugs and/or acetylsalicylic acid in patients with cardiovascular diseases who undergo oral surgical procedures.

Methods

The group consisted of 40 patients (12 females and 28 males) aged 39-83 years (mean age 58 years) hospitalised in the 1st Department of Oral and Maxillofacial Surgery in Zabrze from January 2000 to June 2003. The length of hospitalisation ranged from 2 to 16 days (mean 6.1 days).

The majority of procedures were performed under local anaesthesia with anaesthetics and no norepinephrine added. Spongostan and apposition sutures were applied to postextraction wounds. Patients referred for multiple teeth extractions or other oral surgical procedures (12 patients) received preoperatively additional agents such as hydroxyzin, diazepam, or midazolam, or combined anaesthesia was applied. Prophylactic antibiotic therapy was administered to all patients for several days before and after the procedure. Some patients received one dose of 2 grams of amoxicillin two

hours before surgery. Type of heart disease and treatment maintained during hospitalisation and the perioperative period are presented in Tables I and II.

Results

In the study period 181 teeth extractions, 3 cystectomies and 2 resections of hypertrophic oral mucosa were carried out in patients included in the analysis (Figure 1).

The number of extracted teeth per patient ranged from 1 to 17; in two patients 7 teeth were extracted, in another two patients 8 teeth, and in three patients 10, 16 and 17 teeth. The extractions were usually performed during a single session. If the number of teeth intended to be extracted was higher, the procedure was performed in 2 steps with an interval of 2-3 days. The indications for teeth extraction included advanced periodontal/parodontal diseases, parodontal tooth damage with looseness of the third degree, periapical tissue diseases and deep carious cavities.

The level of anticoagulation defined as the INR (International Normalized Ratio) and measured in all patients on the day of surgery ranged from 1.0 to 4.0. Activated Partial Thromboplastin Time (aPTT) was between 26 and 88 seconds, with a reference range in healthy subjects of 42-65 seconds. The prothrombin time ratio ranged from 26% to 100% (N: 80-120%).

Two (8%) patients developed prolonged postoperative bleeding on the second and third postoperative day. New sutures were placed and cyclonamine given intravenously. In one of these patients 3 teeth were extracted (aPTT – 42 seconds, INR – 3.5) and 6 in the other (aPTT – 55.1 seconds, INR – 3.0). No early or late complications were observed in the remaining patients.

Table I. Patients with systemic diseases

Disease	Number of patients
Valve replacement	11
Coronary artery disease	6
Myocardial infarction	15
Valve disease with atrial fibrillation	3
Hypertrophic cardiomyopathy	5

Table II. Medications taken by the patients

Therapeutic class	Brand names
Oral anticoagulants	Syncumar, Acenokumarol, Sintrom
Acetylsalicylic acid	Acenol, Acesan, Bestpiryn, Acard
Diuretics	Tialorid, Furosemid, Spironol, Tertensif
Digitalis	Bemecor, Digoksin
Angiotensin-converting enzyme inhibitors	Kaptopril, Prestarium, Enarenal
Vasodilators	Pentaerythritol, Effox, Dilzem
Vasodilators – other	Sustonit, Diprophyllinum
Antiarrhythmic drugs	Aspargin, Metocard, Opacorden

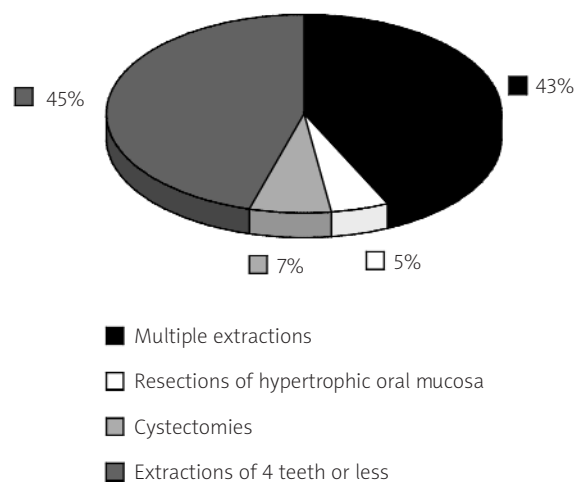


Figure 1. Surgery types

Discussion

Patients with such cardiovascular conditions as cardiac valve prostheses, native valve disease, coronary artery disease, or with previous myocardial infarction are exposed to a risk of thromboembolic events. The incidence of thromboembolic complications has been reported to be 2.5-10% in patients with heart valve prostheses and 1.5-4.7% in patients with valve disease [1]. In order to reduce the risk of these complications, such patients are maintained on oral anticoagulants. These agents counteract vitamin K, which is required for the synthesis of prothrombin and clotting factors VII, IX and X. Anticoagulants reduce plasma concentration of clotting factors, prolonging the prothrombin time (i.e. change the prothrombin time ratio and INR) and, less significantly, the activated partial thromboplastin time (aPTT).

Discontinuation of coumarin-type medications may expose patients to a danger of serious thromboembolic complications. There are many recommendations for oral anticoagulation in the perioperative period [2, 8, 9, 11, 12]. Generally, it is recommended to withdraw oral anticoagulants 2 or 3 days before the planned procedure, and replace them with intravenous heparin, titrated according to aPTT level. Thus, anticoagulation can be stopped immediately when necessary. Heparin infusion is stopped 6-8 hours before the procedure, and 4 hours after the operation oral anticoagulants are reinitiated with increasing doses under INR control. This approach requires longer hospitalisation and increases in-hospital costs.

INR in patients who underwent extractions ranged from 1.0 to 4.0. It is believed that oral surgical procedures should not be performed if INR exceeds 4.0. There is no correlation observed between the occurrence of bleeding complications and INR values within the range of 1.0 to 4.0 [3, 7]. It seems that the number of extractions performed during one session does not correlate with the incidence of bleeding. Postextraction bleeding did not occur in all wounds; it was generally observed in patients with advanced periodontal/parodontal diseases.

Conclusions

1. Teeth extractions and other oral surgical procedures may be performed without discontinuation of anticoagulant therapy.
2. Postoperative complications occurred only in 8% of patients and were promptly controlled with additional local haemostasis.
3. The use of Spongostan and apposition sutures provided sufficient postextraction wound management.

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Zabiegi z zakresu chirurgii stomatologicznej u chorych przyjmujących leki przeciwzakrzepowe. Doniesienie wstępne

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Streszczenie

Wstęp: U chorych, którzy przyjmują doustne leki przeciwzakrzepowe, zabiegi z zakresu chirurgii jamy ustnej, szczególnie ekstrakcje zębów, są wykonywane powszechnie. Ponieważ przerwanie leczenia przeciwzakrzepowego prowadzić może do ciężkich powikłań zakrzepowo-zatorowych, podjęto próbę wykonania zabiegów chirurgicznych w jamie ustnej bez odstawienia antykoagulantów, opierając się na danych z literatury światowej.

Cel: Przedstawienie badań własnych dotyczących leczenia pacjentów z chorobami układu krążenia, przyjmujących pochodne kumaryny i/lub kwasu acetylosalicylowego, bez zmiany schematu leczenia przeciwzakrzepowego proponowanego przez kardiologa.

Metody: Grupę badaną stanowiło 40 pacjentów: 12 kobiet i 28 mężczyzn w wieku 39–83 lat (średnia 58 lat), hospitalizowanych w okresie od stycznia 2000 r. do czerwca 2003 r. w I Klinice Chirurgii Szcękowo-Twarzowej w Zabrzu. W pracy przedstawiono wyniki badań własnych dotyczących leczenia pacjentów z chorobami układu krążenia, przyjmujących pochodne kumaryny i/lub kwasu acetylosalicylowego, bez zmiany schematu leczenia.

Wyniki: Przewodność koagulantów oszacowana na podstawie wskaźnika INR wynosiła w dniu zabiegu od 1,0 do 4,0. Czas kaolinowo-kefalinowy u leczonych pacjentów wynosił od 26 do 88 sekund, przy wartościach referencyjnych od 42 do 65 sekund. Wartości wskaźnika protrombinowego wahały się w przedziale od 26% do 100% przy wartościach referencyjnych od 80% do 120%. Jedynie u 8% chorych wystąpiły niewielkie miejscowe krwawienia, które opanowano zastosowaniem dodatkowej, miejscowej hemostazy.

Wnioski: Ekstrakcje zębów oraz inne zabiegi z zakresu chirurgii jamy ustnej mogą być przeprowadzane bez odstawiania antykoagulantów.

Słowa kluczowe: leki przeciwzakrzepowe, chirurgia stomatologiczna

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