Hemorrhagic Complications of Dental Extractions in 181 Patients Undergoing Double Antiplatelet Therapy

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Purpose: There is limited information on hemorrhagic complications during invasive dental procedures in patients treated with double antiplatelet therapy. The objective of this study is to assess the frequency of hemorrhagic complications of patients taking dual antiplatelet medication undergoing dental extractions.

Patients and Methods: An observational, multicenter, prospective, cohort study was performed in 11 oral and dental care units of primary care. The study sample was derived from the population of patients aged 18 years or older who were undergoing double antiplatelet therapy and presented to the oral and dental care units requiring dental extraction. Double antiplatelet therapy is the combination of 100 mg per day of acetylsalicylic acid and a second antiplatelet agent. The predictor variables were type of extraction performed, number of extracted teeth, number of extracted roots, and presence of inflammation. The primary outcome variable was intraoperative hemorrhage, and the secondary outcome variables were hemorrhage at 24 hours and hemorrhage at 10 days. First, a univariate analysis that considered all studied variables was performed. All variables with $P < .25$ in the univariate analysis were included in a multivariate analysis. The association between hemorrhage severity and its relevant factors was evaluated using logistic regression analysis.

Results: The study included 181 patients. Light hemorrhage (<30 minutes) was observed in 165 patients (91.2%). Intraoperative hemorrhage lasted more than 30 minutes in 15 patients (8.3%) and more than 60

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minutes in only 1 patient, whose hemorrhage was controlled by local hemostatic measures. The presence of inflammation and 3-root extractions increased the probability of hemorrhage persisting for more than 30 minutes by factors of 10 and 7.3, respectively.

Conclusions: In 8.3% of patients treated with dual antiplatelet therapy, dental extractions cause hemorrhagic complications lasting more than 30 minutes are resolved using local hemostatic measures. The results of this study support the safety of dental extraction without withdrawal double antiplatelet therapy.

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Double antiplatelet therapy should not be prematurely stopped after an acute coronary syndrome or a stent implant because of the risk of myocardial infarction and death.[1] Numerous studies have assessed the frequency and severity of hemorrhagic complications of dental interventions in patients undergoing anticoagulant treatment, antiplatelet monotherapy, and anticoagulant-antiplatelet combination therapy.[2-13] However, information on these complications in patients with double antiplatelet therapy is scarce. Few studies include patients with double antiaggregant therapy, and some have methodologic deficiencies regarding their small sample size and the bias inherent to retrospective data collection.[5,14-16]

Despite this paucity of information, the American Heart Association, American College of Cardiology, Society for Cardiovascular Angiography and Interventions, American College of Physicians, American College of Surgeons, American Dental Association, National Health Service, and numerous authors recommend either maintaining double antiplatelet therapy in dental interventions and applying the necessary local hemostatic measures to control the hemorrhage or delaying the intervention until the dual therapy can be withdrawn without risk.[1,17-26]

The purpose of this study was to address the following question: Among patients with double antiplatelet therapy, can dental extractions be carried out safely? We hypothesized that dental extractions have a low frequency of hemorrhagic complications that are resolved using local hemostatic measures. The specific aims of this study were to estimate the frequency of hemorrhagic complications in dental extractions of patients undergoing double antiplatelet therapy and to identify factors associated with an increased risk of intraoperative hemorrhage.

Patients and Methods

STUDY DESIGN

To address the research purpose, we designed and implemented an observational, multicenter, prospective, cohort study. This project was approved by the Ethics and Clinical Research Board of Hospital Ramón y Cajal and by the Central Research Committee of Primary Care of the Community of Madrid. The study was performed in accordance with the Declaration of Helsinki. Written informed consent was obtained from all patients before enrollment in the study.

STUDY SAMPLE

The scope of the study included 11 oral and dental care units of primary care in the community of Madrid that serve a population of 561,603 persons aged older than 14 years. Of these, 2,170 persons (0.39%) were undergoing double antiplatelet therapy at the beginning of the study. The study sample was derived from the population of patients who were undergoing double antiplatelet therapy and presented to the oral and dental care units needing dental extraction between October 1, 2011 and December 31, 2013. Double antiplatelet therapy is the combination of 100 mg per day of acetylsalicylic acid and a second antiplatelet agent (clopidogrel, ticlopidine, prasugrel, or ticagrelor).

To be included in the study sample, patients must have been aged 18 years or older, been treated at least in the last 7 days, and consented to participate in the study. Patients were excluded as study patients if they were aged younger than 18 years, had stopped the single or double antiplatelet treatment for more than 48 hours before extraction, or refused study enrollment.

STUDY VARIABLES

The primary outcome variable was intraoperative hemorrhage. The secondary outcome variables were hemorrhage at 24 hours and hemorrhage at 10 days.

Intraoperative hemorrhage was defined as hemorrhage occurring either during the intervention or the subsequent time the patient spent under observation during the consultation. The severity of the hemorrhage was classified as a function of its duration and the measures needed to control it as follows: light hemorrhage if hemostasis was achieved in less than 30 minutes using the aforementioned protocol, moderate hemorrhage if the bleeding continued for more than 30 minutes but less than 60 minutes, intense hemorrhage if bleeding continued for more than 60 minutes, and severe hemorrhage when it required general measures and referral to a hospital. Thus hemorrhage at 24 hours and hemorrhage at 10 days were classified as absent, light, moderate, intense, or severe.