Overall, no significant differences were found between the 2 medications with respect to the incidence of postoperative pain. None of the groups experienced any flare-ups.

DISCUSSION

Less postoperative pain was reported for single-visit endodontic retreatment without intracanal medicaments than for multiple-visit endodontic retreatment. In addition, the group receiving CHX treatment had higher pain intensity than the group receiving $Ca(OH)_2$ treatment.

Clinical Significance

When patients' pain experience was measured for up to 30 days after RCT retreatment, those who were treated in a single appointment without any intracanal medicament had less pain than those who were treated in 2 appointments with either CHX or $Ca(OH)_2$.

Hepsenoglu YE, Eyuboglu TF, Özcan M: Postoperative pain intensity after single- versus two-visit nonsurgical endodontic retreatment: A randomized clinical trial. *J Endod* 44:1339-1346, 2018

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OCCLUSION

Tooth wear and masticatory performance

BACKGROUND

Many factors influence the efficiency of chewing, including dental state, bite force, body size, age, gender, salivary flow rate, jaw movements, temporomandibular disorders (TMDs), and occlusal area of the post canine teeth. In addition, tooth wear may alter masticatory performance. The wear process is complex and includes both the chemical factor of erosion and the mechanical factors of attrition and abrasion. Generally, severe and pathological wear has a multifactorial etiology. Tooth wear alters the morphology of the teeth because tooth substance is lost, which can influence the height of vertical dimension of occlusion (VDO) and can affect patients' function, comfort, esthetics, and quality of life. The effect of tooth wear on masticatory performance was measured using a comminution test.

METHODS

The 52 participants (40 men and 12 women, mean age 40 years) had varying degrees of tooth wear, were at least age 18 years and mentally competent, had a maximum of 1 diastema in the posterior area, and had an ASA score of at least 3. Measures of performance included tooth wear index (TWI) judged on a scale from 0 to 4, dental state, bite force measurements, and masticatory performance. The last consisted of a masticatory efficiency test consisting of comminution of artificial test food made of polysiloxane impression material.

RESULTS

Mean post canine TWI score was 2.2. The average number of occlusal units per participant was 11.9, and mean bite force was 369 N. Masticatory performance, which was defined as the median particle size (X50) after 20 chewing strokes, for the entire group was 4.2. A small but significant decrease between successive X50 scores averaged 0.26. The duplicate measurement error (DME) was 0.34. The reliability of the mean X50 score was 0.966.

Multiple regression analysis confirmed that post canine TWI score had no significant influence on masticatory performance. In addition, no significant effect on X50 was related to age, gender, bite force, or number of occlusal units.

DISCUSSION

No significant relationship was found between the degree of tooth wear of posterior teeth and the median particle size (X50). It should be noted that the results could be impacted by the fact that more men than women were referred for severe tooth wear problems. This could reflect the fact that men consume more acidic drinks than women and perhaps suffer greater erosive tooth wear.

Clinical Significance

The degree of tooth wear of these individuals did not have any effect on masticatory performance. However, future studies may be needed to investigate the impact of occlusal contact area on masticatory function in patients with different degrees of tooth wear, as well as the possible influence of the alteration of occlusal contact area after full rehabilitation of the dentition of patients with tooth wear.

Sterenborg BAMM, Kalaykova SI, Loomans BAC, et al: Impact of tooth wear on masticatory performance. *J Dent* 76:98-101, 2018

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ORAL MEDICINE

Risk for myocardial infarction

BACKGROUND

When patients undergo invasive dental procedures, there is a dissemination of oral bacteria and their products into the bloodstream, which triggers an acute inflammatory response. The bacteremia occurs immediately after treatment but lasts a very short time under normal conditions. It's been suggested that this inflammatory response increases the risk for acute cardiovascular events, such as myocardial infarction (MI). A case-control study was undertaken to evaluate whether invasive dental treatment leads to a transient increased risk for MI.

METHODS

The data were gathered from nationwide health care and population registries in Sweden. The 51,880 case patients (mean age 72.6 years) had a first fatal or nonfatal MI between January 2011 and December 2013. Five control subjects were selected randomly for each case patient. All controls were free of previous MI and matched for age, sex, and geographic area of residence, yielding 246,978 control subjects (mean age 72.3 years). The Dental Health Registry was used to provide information on dental treatments, which were categorized into invasive treatments and others. Some procedures were done 4 weeks before the MI, some 2 weeks, and some 2 days before the MI. The odds ratios (ORs) for MI were estimated for these groups. In addition, confounding factors were evaluated for their effect on MI risk. These included diabetes, previous cardiovascular disease (CVD), CVD drug treatment, education, and income.

RESULTS

Case patients had diabetes and previous CVD and received more CVD drug treatment than control subjects. In addition, control subjects had higher educational and income levels than case patients.

Over the 4 weeks before the MI, the frequency of invasive dental treatments was similar, with the exception of implant surgery, which was done among case patients more often than in control subjects. Case patients were less likely to have dental examinations, temporary treatments, caries treatment, supragingival scaling/prophylaxis, fillings, root canal treatment, and fixed prosthodontics treatments than control subjects over the course of the 4 weeks before their MI. No association was found between invasive dental treatments performed 4 weeks before the MI and the risk of MI, even when the assessment was adjusted for confounding factors.

Over the 2 weeks before the MI event, the frequency of invasive dental treatments and other dental treatments was similar among the case patients and the control subjects. No association was found between invasive dental treatments and the risk of an MI at this time period. Considering confounders did not alter the risk estimate.

When invasive dental treatments were done less than 2 days before the MI event, case patients received these treatments less often than control subjects except for scaling and root planning. Invasive dental treatments performed 2 days before the MI event were associated with a lower risk of MI, which was not altered when confounding factors were considered.

DISCUSSION

Several studies have found that the performance of invasive dental treatments increases the levels of inflammatory markers in the bloodstream. A higher risk of cardiovascular events has been associated with increased inflammatory marker levels. This study in a large group of patients and controls found no relationship between the occurrence of MI and the performance of invasive dental treatments 4 weeks, 2 weeks, or 2 days before the MI occurred. None of the confounding factors had an appreciable effect on the risk for MI after receiving invasive dental treatments.

Clinical Significance

This population-based nationwide study provides high generalizability to populations similar to that of Sweden, where CVD prevention is common and general oral health is good. In these populations, having invasive dental procedures can be viewed as likely to have no impact on the occurrence of an MI within 4 weeks. In addition, confounding factors such as age, sex, income, education, CVD drug treatment, and the presence of diabetes or CVD should also add no increased risk of MI for patients.