the degree of contamination. The results were descriptively analyzed.

RESULTS

Both *E coli* and *E faecalis* were found to contaminate the toothbrushes. The degree of residual contamination was highly influenced by the disinfecting method selected (Figure 2). *E faecalis* was more resistant that *E coli* regardless of the method used. Microwave cooking had the best result, followed by the heat of the hairdryer. Whisky had no significant effect on bacterial growth of the toothbrushes compared to controls.

DISCUSSION

Microwave disinfection was more effective than either hairdryer heat or the alcohol level of the whisky for reducing the contamination of toothbrushes. The method is easy, brief, and inexpensive. However, a 60-second exposure may not be sufficient.

Clinical Significance

Contamination of toothbrushes is something we tend to overlook, although it's clear that the environment where these brushes live and work is full of contaminants. There is currently no good way to ensure that we have a fresh, untainted toothbrush every time we brush—outside of buying them in bulk and making them single-use utensils. More research is obviously needed.

Patcas R, Zbinden R, Schätzle M, et al: Whisky, microwave or hairdryer? Exploring the most efficient way to reduce bacterial colonisation on contaminated toothbrushes. *Br Dent J* 225:1007-1010

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IMPLANTS

Short versus long implants

BACKGROUND

The use of implants is widespread in patients who are partially or completely edentulous. Implant success rates tend to be high, but can be influenced by the presence or absence of sufficient bone volume, among other factors. Bone quality and quantity should be evaluated as part of the preparation for implant placement. Bone augmentation procedures are available to enhance bone width and height in atrophied ridges, but problems attend the use of these procedures, including high cost, added treatment time, increased postoperative morbidity, and a higher risk for complications. Short dental implants, often defined as 6 mm or less in length, have been proposed, but their survival data have been questioned. A systematic review was done to determine the long-term survival and failure rates as well as complications of short implants versus long implants in posterior jaw areas.

METHODS

A search of the MEDLINE (PubMed) and EMBASE databases was performed seeking English-language articles published from January 1, 1990 to June 30, 2017. A manual search of all full-text articles selected was also done. Ten randomized controlled trials (RCTs) were selected, covering 637 short implants ($\leq$6 mm) placed in 392 patients and 653 standard implants ($\geq$6 mm) placed in 383 patients. The outcomes sought were survival rates, failure rates, and complications related to each type of implant.

RESULTS

Seven of the 10 studies reported 1 or more adjacent implants were placed in each patient, depending on the width of the edentulous site. These restorations on multiple adjacent sites were always splinted. Three studies only reported on implant-supported single crowns. Retention was by screw or cement in 4 studies, by screw only in 3 studies, and by cement only in 3 studies.

Survival rates for the short implants were between 86.7% and 100%. Those for standard implants were from 95% to 100%; follow-up time ranged from 1 to 5 years. In 2 studies no implant failures were reported for either group. Meta-analysis yielded a risk ratio (RR) of 1.29, which means that short implants had a 29% higher risk of failure compared to longer implants. The prosthesis survival rates were between 90% and 100% for the short implants and between 95% and 100% for the longer implants.

The mean marginal bone levels (MBLs) for the short implants were between +0.06 and −1.22 mm at the follow-up evaluation. For longer implants, the values ranged from +0.02 to −1.54 mm. Most studies reported no statistically significant differences between the 2 groups with respect to MBL.

Clinical Significance

It's important to carefully consider the indications for short implants because they have a higher risk for failure than longer implants. However, short implants avoid many of the complications that attend the use of extensive bone grafting and other vertical ridge augmentation procedures in the posterior mandible that are required for the placement of standard implants. Splinting of multiple short implants appears to be a good option that distributes the occlusal forces over the entire implant-prosthodontic complex.

The complications most commonly seen were related to intrasurgical and postsurgical events. The percentage of patients who had biological complications with their short implants was between 0% and 26%. For the longer implants, the percentage of patients with biological complications ranged from 0% to 90%. Most of the complications occurred in the immediate postoperative period. Examples included transient paresthesia of the lower lip, Schneiderian membrane perforation, and mandibular graft infection.

DISCUSSION

The survival rates of short implants were between 86.7% and 100%, and those for longer implants were between 95% and 100% over a period of 1 to 5 years. Short implants had a nominally lower survival rate than longer implants.

Papaspyridakos P, De Souza A, Vazouras K, et al: Survival rates of short dental implants ($\leq$6 mm) compared with implants longer than 6 mm in posterior jaw areas: A meta-analysis. *Clin Oral Impl Res* 29:8-20, 2018

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Medication impact on dental implant failure

BACKGROUND

As the population ages, not only is the prevalence of disabling disease higher but the intake of medications to address the disease increases significantly. Although implant-supported restorations are a highly successful treatment option with good long-term success rates up to 10 or 20 years, these disabling diseases and the medications used to manage them may have an impact on implant survival and failure rates. Among the medications that may be associated with impaired implant performance are thiazide diuretics, β-blockers, anti-inflammatory drugs, proton pump inhibitors, and serotonin re-uptake inhibitors. A systematic review of the literature was done to investigate the association between the intake of medications that may affect bone metabolism and implant outcomes.

METHODS

Electronic and manual searches were done in the PubMed, MEDLINE (OVID), EMBASE (OVID), Cochrane Central Register of Controlled Trials (Cochrane Library), Cochrane Oral Health Group Trials Register (Cochrane Library), Web of Science (Thomson Reuters), and SciVerse (Elsevier) databases up to May 2017. In addition, the grey literature available at the New York Academy of Medicine Grey Literature Report and the register of clinical studies hosted by the US National Institutes of Health were also searched, as were the bibliographies of relevant publications and selected journal issues. The final selection included 17 articles, 5 of which were focused on the association of implant failure and non-steroidal anti-inflammatory drugs (NSAIDs), 2 on selective serotonin reuptake inhibitors (SSRIs), 2 on proton pump inhibitors (PPIs), 7 on oral bisphosphonates (BPs), and 1 on anti-hypertensives.

RESULTS

PPIs reduce the production of acid by blocking the enzyme in the wall of the stomach that produces acid. The implant failure (IF) rates with PPIs were 4.3%, which is significantly higher than for control groups. In addition, SSRIs, which are used for depressive or anxiety conditions, also had an increased IF rate. The difference between those taking SSRIs and controls was 7.5%. Just 1 study addressed anti-hypertensive agents (AHTNs), but they were associated with an increased implant survival rate. No implant effects were found for BPs or NSAIDs.

Clinical Significance

Additional information is needed to guide the clinical care of patients taking medications for their chronic systemic diseases. An association has been shown between PPIs and SSRIs and implant failure, but other drugs may also cause problems with healing or osseointegration. Further research is warranted.