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CENTRO DENTAL INTEGRAL

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Anestesiología

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Dr. Francisco Torres Lear

La trayectoria del Dr. Torres Lear es la historia de un descubrimiento vocacional inesperado. Aunque se licenció en Medicina con la firme intención de ser cardiólogo, el destino intervino mientras preparaba el MIR: aprobó el acceso a Odontología y lo que comenzó como un paso intermedio se transformó en su verdadera pasión. En la estomatología descubrió un "trabajo artesano de la salud" que le cautivó por completo, haciéndole comprender que había nacido para esta profesión.

Su enfoque va más allá de lo clínico; su mayor satisfacción reside en mejorar la autoestima, el bienestar y la calidad de vida de sus pacientes. Defensor acérrimo de la prevención y la higiene diaria, el Dr. Torres lidera el Centro Dental Torres bajo una premisa clara: para conseguir la felicidad del paciente, primero hay que cuidar a las personas que trabajan en la clínica, dotándolas de los mejores medios en una organización sólida y humana.

Titulación

Licenciado en Medicina y Cirugía. Universidad de Zaragoza
Especialista en Estomatología. Universidad del País Vasco
Doctor en Medicina y Cirugía. Universidad de Zaragoza
Máster en Implantología, Rehabilitación Oral y Periodoncia por E.S.O.R.I.B. (European School of Oral Rehabilitation, Implantology and Biomaterials) en colaboración con The New York University
Fellow of The European Board of Oral Surgery Societies
Asistente a más de 170 cursos de posgrado de la Especialidad

Sociedades científicas y congresos

Vocal Nacional de SEI (Sociedad Española de Implantes) y miembro de SEPA(S.E. de Periodoncia), SEPES(S.E.de Prótesis Estomatológica) y SECIB (S.E. de Cirugía Bucal)
Miembro de 16 comités organizadores/científicos de congresos.
Presidente del Congreso de la Sociedad Española de Cirugía Bucal celebrado en Zaragoza en 2.011
Participación en congresos con 81 ponencias/comunicaciones recibiendo cuatro premio

Actividad docente

Ex Profesor colaborador de Universidades Nacionales en diferentes disciplinas (Cirugía Bucal, Implantología, Prótesis, Odontología integrada de Adultos,...)
Profesor del Máster Universitario de Implantología de la Universidad de Sevilla y de otras Universidades
Dictante de más de 70 conferencias y cursos en Universidades y centros privados

Publicaciones y actividad investigadora

Publicación de dos libros y colaboración en otros ocho con capítulos de distintos temas de la especialidad
Quince artículos en revistas científicas
Cuatro proyectos de investigación en distintos temas de la especialidad

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Referencias científicas

Referencias científicas

Alrawashdeh BN, Hammadeen SA, Hamadeneh KN, Almaaitah HM, Altarawneh HA. The Influence of Oral Health on Comprehensive Health Outcomes in Critically Ill Patients. Cureus. 2025 Feb 6;17(2):e78605. doi: 10.7759/cureus.78605. PMID: 40062016; PMCID: PMC11889446.

ABSTRACT

Aims: The main purpose of the study was to find out how the oral health of critically ill patients affected the chances of bad outcomes such as longer hospital stays and death while taking into account possible confounders such as how often the critically ill patients used chlorhexidine mouthwash each week and their sequential organ failure assessment scores.

Methods: We conducted a retrospective observational study on 4,999 critically ill patients admitted to the King Hussein Medical Centre in Amman, Jordan, from January 2018 to May 2022. The patients were adults and the elderly, with a minimum of three consecutive days of admission. The study encompassed both mechanically ventilated and non-ventilated patients. We divided the cohort into two groups, Group I, based on favorable adverse outcomes, and Group II, based on unfavorable adverse outcomes. We examined the weekly administration of chlorhexidine mouthwash during critical care admissions as the principal variable. We conducted multiple logistic regression analyses to evaluate the correlation between weekly mouthwash usage and the likelihood of poorer outcomes while accounting for oral health conditions and the risk of critical illness.

Results: A retrospective study of 4,999 critically ill patients revealed that 2,370 patients (47.41%) achieved improved composite outcomes of interest (cOI), while 2,629 patients (52.26%) fell into the inferior cOI group. The overall mortality rate in the lower socioeconomic category was 1,920 patients (73%), compared to 709 patients (27%) in the survival rate. A study using multiple logistic regression showed a strong link between critically ill patients' oral health statuses (OHS), how often they used mouthwash each week (WMW), and their sequential organ failure assessment (SOFA) scores. The regression association for OHS relative to poorer cOI was positive, indicating a higher risk for poorer OHS compared to better OHS. The multivariate logistic regression model showed a predictive variability range of 69.5%-92.7%, with sensitivity indices of 98.6% for specificity, 96.7% for sensitivity, and 97.6% for accuracy.

Conclusion: The study found a significant association between poor OHS and adverse outcomes. Other factors in critically ill patients, such as the weekly application of chlorohexidine gluconate mouthwash and SOFA, significantly influenced this independent variable, which had a high propensity risk of 180.965. The optimal threshold for a weekly chlorhexidine mouthwash application was 15.5 times per week.

Akashi M, Nanba N, Kusumoto J, Komori T. Perioperative intervention by oral medicine team in cardiovascular surgery patients. Gen Thorac Cardiovasc Surg. 2019 Feb;67(2):197-202. doi: 10.1007/s11748-018-1020-0. Epub 2018 Oct 5. PMID: 30291542.

ABSTRACT

In brief, perioperative oral intervention consists of elimination of odontogenic foci and maintenance of oral hygiene in patients undergoing surgery. The importance of oral intervention before, during, and after medical treatments is well-known, especially in cancer patients, because odontogenic foci such as untreated deep dental caries or periodontitis can cause systemic infection in patients with myelosuppression resulting from chemotherapy. Although perioperative oral intervention is currently recommended for patients with cardiovascular disease, its efficacy in this population has not been established. This article consists of three sections: first, we review the current knowledge about the association between dental disease and cardiovascular disease to show the importance of oral hygiene maintenance and the risks of invasive dental procedures in patients with cardiovascular disease; second, we introduce pertinent, but limited evidence concerning the effect of oral care in preventing postoperative pneumonia; and finally, we present the optimal strategy for perioperative oral intervention in cardiovascular surgery patients.

Buzquurz F, Bojesen RD, Grube C, Madsen MT, Gögenur I. Impact of oral preoperative and perioperative immunonutrition on postoperative infection and mortality in patients undergoing cancer surgery: systematic review and meta-analysis with trial sequential analysis. BJS Open. 2020 Oct;4(5):764-775. doi: 10.1002/bjs5.50314. Epub 2020 Jun 23. PMID: 32573977; PMCID: PMC7528521.

ABSTRACT

Background: Infectious complications occur in 4-22 per cent of patients undergoing surgical resection of malignant solid tumours. Improving the patient's immune system in relation to oncological surgery with immunonutrition may play an important role in reducing postoperative infections. A meta-analysis was undertaken to evaluate the potential clinical benefits of immunonutrition on postoperative infections and 30-day mortality in patients undergoing oncological surgery.

Methods: PubMed, Embase and Cochrane Library databases were searched to identify eligible studies. Eligible studies had to include patients undergoing elective curative surgery for a solid malignant tumour and receiving immunonutrition orally before surgery, including patients who continued immunonutrition into the postoperative period. The main outcome was overall infectious complications; secondary outcomes were surgical-site infection (SSI) and 30-day mortality, described by relative risk (RR) with trial sequential analysis (TSA). Risk of bias was assessed according to Cochrane methodology.

Results: Some 22 RCTs with 2159 participants were eligible for meta-analysis. Compared with the control group, immunonutrition reduced overall infectious complications (RR 0·58, 95 per cent c.i. 0·48 to 0·70; I2 = 7 per cent; TSA-adjusted 95 per cent c.i. 0·28 to 1·21) and SSI (RR 0·65, 95 per cent c.i. 0·50 to 0·85; I2 = 0 per cent; TSA-adjusted 95 per cent c.i. 0·21 to 2·04). Thirty-day mortality was not altered by immunonutrition (RR 0·69, 0·33 to 1·40; I2 = 0 per cent).

Conclusion: Immunonutrition reduced overall infectious complications, even after controlling for random error, and also reduced SSI. The quality of evidence was moderate, and mortality was not affected by immunonutrition (low quality). Oral immunonutrition merits consideration as a means of reducing overall infectious complications after cancer surgery.

Cueto Urbina A, Guzmán Opazo J, Sagredo Ramírez K, Parra Parra M, López De Blanc S. Association between periodontitis and postoperative complications in hospital medical surgical procedures: a systematic review. Rev Cient Odontol (Lima). 2023 Dec 28;11(4):e177. doi: 10.21142/2523-2754-1104-2023-177. PMID: 38312471; PMCID: PMC10831989.

ABSTRACT

Background: Periodontitis is potentially harmful in the perioperative period due to biofilm generating a environment for bacteria to spread and colonize other anatomical areas, which can generate a potential risk of infection, delayed healing, increased morbidity, and even induce avulsion in intubated patients, and subsequent aspiration or ingestion of teeth with increased mobility.

Objective: Associate the presence of periodontitis and postoperative complications in patients who underwent an in-hospital medical surgical procedure.

Methods: A systematic review based on studies extracted from PubMed and Scopus was carried out on June 10, 2020, based on the Population, Intervention, Comparison and Result search strategy. As inclusion criteria, the studies had to include all the disaggregated terms of the research question, have a publication date of less than 15 years, and the target population had to have undergone elective hospital medical-surgical interventions. The exclusion criteria corresponded to not presenting an analytical or experimental observational study design, not having made a periodontal clinical diagnosis of the study subjects, and not expressing in the results the presence of postoperative medical-hospital complications. Articles were assessed for quality by supplementing the STROBE guideline and Newcastle Ottawa, for risk of bias by supplementing the STROBE guideline and the Cochrane Collaboration handbook tool.

Results: A total of 131 articles were obtained, which were subjected to a selection process, resulting in 5 final analytical observational studies. A meta-analysis was performed and determined that periodontitis was a risk factor to postoperative complications after surgical procedures with an OR = 4,76; 95%CI [1,11-20,41].

Conclusions: Optimize the guidelines for assessing quality and risk of bias can make their comparison with other studies complex, however it was determined in a statistically significant way that patients with periodontitis have a higher risk of generating postoperative complications after a medical hospital surgery.

Danilkowicz RM, Lachiewicz AM, Lorenzana DJ, Barton KD, Lachiewicz PF. Prosthetic Joint Infection After Dental Work: Is the Correct Prophylaxis Being Prescribed? A Systematic Review. Arthroplast Today. 2021 Jan 9;7:69-75. doi: 10.1016/j.artd.2020.11.007. Erratum in: Arthroplast Today. 2021 Dec 02;13:7. doi: 10.1016/j.artd.2021.11.009. PMID: 33521200; PMCID: PMC7818599.

ABSTRACT

Background: Prosthetic joint infection (PJI) of total hip (THA) or total knee arthroplasty (TKA) after dental procedures is uncommon, and antibiotic prophylaxis remains controversial. For high-risk patients, the American Academy of Orthopedic Surgeons recommends amoxicillin prophylaxis. However, no systematic review of the literature of PJIs associated with dental procedures explores if amoxicillin is suitable for the reported organisms.

Methods: A librarian-assisted search of the major databases (PubMed, Medline, Embase, Scopus) identified 954 articles. Only case reports, case series, and reviews with patient level data were included. After exclusions, 79 articles were fully reviewed.

Results: Forty-four PJIs after dental procedures were identified, 22 in primary THA, 20 in primary TKA, one in revision THA, and one in a hip resurfacing procedure. Antibiotic prophylaxis was documented for 5 patients. The dental procedure was invasive in 35 (79.5%). Comorbidities were present in 17 patients (38.7%). The organisms reported were Streptococcus spp. in 44%, other aerobic gram-positives in 27%, anaerobic gram-positives in 18%, and gram-negative organisms in 11%. An estimated 46% of organisms may be resistant to amoxicillin. The outcomes of treatment were reported for 35 patients (79.5%). Twenty-seven patients (61.4%) had no clinical signs of PJI at the final follow-up visit.

Conclusions: Lower extremity PJI associated with dental procedures is often caused by organisms unlikely to be prevented with amoxicillin. Additional studies are warranted to determine the choice and efficacy of antibiotic prophylaxis to prevent dental-associated PJI in the highest risk patients. Insufficient data exist to recommend the optimal treatment for patients with PJI in THA and TKA associated with dental procedures.

de Jong MHS, van der Maarel-Wierink CD, Ket JCF, Jerković-Ćosić K, Rozema FR. Self-Reported Items That Predict the Risk of Oral Health Deterioration and the Need for Dental Referral in Older People: A Systematic Review. Gerodontology. 2025 Feb 11. doi: 10.1111/ger.12812. Epub ahead of print. PMID: 39934979.

ABSTRACT

Background: Detecting deterioration in frail oral community-dwelling older people's oral health may be delayed as a consequence of decreased visits to oral health care professionals. Older people are becoming increasingly dependent on medical care and visit other healthcare professionals, highlighting the importance of interprofessional collaboration. There is a need for an easy-to-use, time- and cost-efficient oral health assessment tool for non-oral healthcare professionals. This systematic review aimed to identify self-reported items that predict the risk of oral health deterioration in older people to inform such a tool.

Method: The OVID/Medline, Embase, EBSCO/CINAHL, and Web of Science databases were systematically searched. An additional reference check was performed to ensure that no records were missing. The primary outcome was predictive value, defined as the probability of a specific question or self-reported item predicting the risk of oral health deterioration or the need for dental referral. When available, the data were presented as sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV).

Results: The initial search resulted in 2471 records. Eleven articles met the inclusion criteria and were analysed. A high predictive value for oral health deterioration was observed for the self-reported items: "Are you generally pleased with your mouth and teeth?" (specificity: 93.0%), "Would you say your mouth health is generally good?" (specificity: 95.2%), "Does your mouth feel dry?" (specificity: 82.7%), and "Do you have regular dental checkups?" (sensitivity: 90.0%-100%); and "Do you have tooth and/or mouth problems that make it hard to eat?" (specificity: 92.0).

Conclusion: A screening tool for use by non-oral health professionals, that consists of 2-4 highly predictive self-reported items, such as dry mouth, satisfaction with oral health, recent dental visits and food consumption problems, could be used for early detection and timely referral of older people at risk of oral health deterioration.

East B, Podda M, Beznosková-Seydlová M, de Beaux AC. Exploring the link between poor oral hygiene and mesh infection after hernia repair: a systematic review and proposed best practices. Hernia. 2023 Dec;27(6):1387-1395. doi: 10.1007/s10029-023-02795-y. Epub 2023 May 19. PMID: 37204529; PMCID: PMC10700451.

ABSTRACT

Background: There is a reasonable body of evidence around oral/dental health and implant infection in orthopaedic and cardiovascular surgery. Another large area of surgical practice associated with a permanent implant is mesh hernia repair. This study aimed to review the evidence around oral/dental health and mesh infection.

Methods: The research protocol was registered in PROSPERO (CRD42022334530). A systematic review of the literature was undertaken according to the PRISMA 2020 statement. The initial search identified 582 publications. A further four papers were identified from references. After a review by title and abstract, 40 papers were read in full text. Fourteen publications were included in the final review, and a total of 47,486 patients were included.

Results: There is no published evidence investigating the state of oral hygiene/health and the risk of mesh infection or other infections in hernia surgery. Improvement in oral hygiene/health can reduce surgical site infection and implant infection in colorectal, gastric, liver, orthopaedic and cardiovascular surgery. Poor oral hygiene/health is associated with a large increase in oral bacteria and bacteraemia in everyday activities such as when chewing or brushing teeth. Antibiotic prophylaxis does not appear to be necessary before invasive dental care in patients with an implant.

Conclusion: Good oral hygiene and oral health is a strong public health message. The effect of poor oral hygiene on mesh infection and other complications of mesh hernia repair is unknown. While research is clearly needed in this area, extrapolating from evidence in other areas of surgery where implants are used, good oral hygiene/health should be encouraged amongst hernia patients both prior to and after their surgery.

Funahara M, Soutome S, Sakamoto Y, Imakiire A, Otsuru M, Umeda M. Factors Related to the Growth of Oral Bacteria After Surgery: An Observational Study of 54 Patients Undergoing Oncologic or Cardiac Surgery. Cureus. 2024 Oct 24;16(10):e72342. doi: 10.7759/cureus.72342. PMID: 39588437; PMCID: PMC11586873.

ABSTRACT

Introduction Postoperative complications, such as surgical site infection and postoperative pneumonia, may be caused by oral bacteria. This study aimed to clarify the factors related to the bacterial count in the saliva of postoperative patients so as to standardize oral management methods before and after surgery. Methods This prospective observational study enrolled 54 patients who underwent major oncologic or cardiac surgery. The following variables were investigated: age, sex, primary disease, body mass index, performance status, smoking, alcohol consumption, serum creatinine and albumin, operation time, intraoperative blood loss, number of teeth, functional tooth unit, plaque control record (PCR), amount of dental plaque, community periodontal index, eating status the day after surgery, oral wetness, and number of bacteria in the saliva before and after surgery. The relationship between each variable and the number of bacteria in the saliva before and after surgery was analyzed. Results Multiple regression analysis revealed that the PCR was significantly associated with the number of bacteria in the saliva before surgery ($p=0.021$). On the day after surgery, the number of bacteria in saliva was significantly higher than that before surgery ($p<0.001$). Multivariate analysis showed that eating status the day after surgery ($p=0.046$) and oral wetness ($p=0.043$) were significantly associated with the number of bacteria, but dental plaque did not influence the bacterial count. Conclusions Postoperative salivary bacterial counts increased due to reduced oral self-cleaning, regardless of dental plaque content. Therefore, oral feeding should be started promptly after surgery to reduce the number of bacteria in the saliva.

Honda H, Funahara M, Nose K, Aoki M, Soutome S, Yanagita K, Nakamichi A. Preoperative and Postoperative Salivary Bacterial Counts in Infants Undergoing Cardiac Surgery: A Prospective Observational Study. Cureus. 2024 Sep 12;16(9):e69269. doi: 10.7759/cureus.69269. PMID: 39398657; PMCID: PMC11470833.

ABSTRACT

Introduction: Postoperative pneumonia may develop in infants after cardiac surgery; however, only a few reports are available on perioperative oral bacteria in infants. This study aimed to examine preoperative and postoperative salivary bacterial counts in infants undergoing cardiac surgery.

Materials and methods: The number of bacteria in the saliva of 105 infants (average age: 20 months) who underwent surgery for congenital heart disease was determined by culturing before and after surgery. Factors associated with changes in the bacterial count were further examined. Patients received systemic antimicrobials for an average of four days immediately before surgery.

Results: Postoperative salivary bacterial counts were higher in older patients, who had erupting teeth and had longer surgical times. The average number of colonies before surgery was 104.53 CFU/mL; on the day after surgery, this number significantly decreased to 103.68 CFU/mL. The rate of reduction was especially high in infants without tooth eruption. The total number of bacterial colonies in saliva decreased after surgery, most likely because of the use of systemically administered antibiotics, and the rate of decrease was particularly high in infants without tooth eruptions.

Conclusion: This study examined the preoperative and postoperative salivary bacterial counts in infants undergoing cardiac surgery. In the future, we would like to further examine bacterial flora and the effects of perioperative oral care. This study provides insights into the development of new strategies for preventing and treating surgical site infections and pneumonia in children.

Ishikawa S, Yamamori I, Takamori S, Kitabatake K, Edamatsu K, Sugano A, Oizumi H, Kato H, Suzuki J, Sato K, Yusa K, Sadahiro M, Iino M. Evaluation of effects of perioperative oral care intervention on hospitalization stay and postoperative infection in patients undergoing lung cancer intervention. Support Care Cancer. 2021 Jan;29(1):135-143. doi: 10.1007/s00520-020-05450-9. Epub 2020 Apr 22. PMID: 32323001.

ABSTRACT

Purpose: This retrospective study investigated the effect of perioperative oral care intervention on postoperative outcomes in patients undergoing lung cancer resection, in terms of the length of postoperative hospital stay and the incidence of postoperative respiratory infections.

Methods: In total, 585 patients underwent lung resection for lung cancer, 397 received perioperative oral care intervention, whereas the remaining 188 did not. This study retrospectively investigated the demographic and clinical characteristics (including postoperative complications and postoperative hospital stay) of each group. To determine whether perioperative oral care intervention was independently associated with either postoperative hospital stay or postoperative respiratory infections, multivariate analysis, multiple regression analysis, and multivariate logistic regression analysis were conducted.

Results: Parameters significantly associated with a prolonged postoperative hospital stay in lung cancer surgery patients were older age, postoperative complications, increased intraoperative bleeding, more invasive operative approach (e.g., open surgery), and lack of perioperative oral care intervention (standard partial regression coefficient (ß) = 0.083, p = 0.027). Furthermore, older age and longer operative time were significant independent risk factors for the occurrence of postoperative respiratory infections. Lack of perioperative oral care intervention was a potential risk factor for the occurrence of postoperative respiratory infections, although not statistically significant (odds ratio = 2.448, 95% confidence interval = 0.966-6.204, p = 0.059).

Conclusion: These results highlight the importance of perioperative oral care intervention prior to lung cancer surgery, in order to shorten postoperative hospital stay and reduce the risk of postoperative respiratory infections.

Isomura ET, Suna S, Kurakami H, Hikoso S, Uchihashi T, Yokota Y, Sakata Y, Tanaka S. Not brushing teeth at night may increase the risk of cardiovascular disease. Sci Rep. 2023 Jun 28;13(1):10467. doi: 10.1038/s41598-023-37738-1. PMID: 37380762; PMCID: PMC10307836.

ABSTRACT

In this study, we investigated whether toothbrushing timing affects cardiovascular disease risk. We enrolled 1675 patients aged ≥ 20 years who were hospitalized for surgery, examination, or medical treatment. The participants were categorized as follows based on toothbrushing: Group MN (brushing teeth after waking up and at night, n = 409), Group Night (brushing teeth at night but not upon waking up, n = 751), Group M (brushing teeth after waking up but not at night, n = 164), and Group None (not brushing teeth at all, n = 259). The participants' age, sex, smoking history, and follow-up results were evaluated. Group M had four times as many men as women. Multivariate analysis of cardiovascular events showed significantly higher survival estimates in Group MN (P = 0.021) and Group Night (P = 0.004) than in Group None. Kaplan-Meier analysis of subgroups based on smoking status revealed that smokers in Group None had significantly worse prognosis for cardiovascular onset events than smokers in other groups; non-smokers in Groups None and M showed significantly worse prognosis on hospitalization. Our findings are limited to cardiovascular diseases and cannot be generalized to healthy populations. However, we suggest that brushing teeth at night is important for lowering cardiovascular disease risk.

Kai N, Tsukamoto Y, Urabe K, Tani A, Inai Y, Okadome A, Kashiwazaki H, Mizutani S, Wada N. Factors That Influence the Judgment of Oral Management Necessity in Preoperative Oral Screening. Int J Environ Res Public Health. 2021 Nov 22;18(22):12236. doi: 10.3390/ijerph182212236. PMID: 34831991; PMCID: PMC8617779.

ABSTRACT

Oral management during the perioperative period is important to prevent the development of postoperative complications. However, there are no unified systems to examine the oral status of patients and very few studies have focused on preoperative oral screening. In this study, we examined the oral status of patients who underwent oral screening at a University Hospital. A total of 1173 patients who underwent oral screening for perioperative management from April 2020 to July 2021 were enrolled. The subjects' medical data were retrospectively extracted from the dental records, and finally, the data of 1081 patients aged ≥20 years were analyzed. Oral screening based on seven categories was performed by dentists or dental hygienists. Our cumulative results determined whether patients required oral management during the perioperative period. "Poor oral hygiene" was the most frequent category (24%) of all oral categories examined. Logistic analysis revealed that tooth mobility had the highest odds ratio (21.476; 95% confidence interval: 11.462-40.239; p < 0.001) for oral management necessity during the perioperative period. Our study suggests that poor oral hygiene is most frequently observed in preoperative oral screening. Moreover, tooth mobility in preoperative oral screening may influence the judgment of oral management necessity during the perioperative period.

Karakaya Z, Duyu M, Yersel MN. Oral mucosal mouthwash with chlorhexidine does not reduce the incidence of ventilator-associated pneumonia in critically ill children: A randomised controlled trial. Aust Crit Care. 2022 Jul;35(4):336-344. doi: 10.1016/j.aucc.2021.06.011. Epub 2021 Aug 8. PMID: 34376358.

ABSTRACT

Background: Ventilator-associated pneumonia (VAP) is one of the most frequently encountered causes of hospital-acquired infection and results in high morbidity among intubated patients. Few trials have investigated the efficacy of oral care with chlorhexidine (CHX) mouthwash for the prevention of VAP in the paediatric population.

Objectives: The objective of this study was to assess the efficacy of CHX mouthwash in the prevention of VAP and to determine risk factors for VAP in children aged 1 month to 18 years admitted to the paediatric intensive care unit (PICU).

Methods: This was a prospective, randomised, controlled, double-blind trial performed in the PICU. Patients were randomised into two groups receiving CHX (0.12%) (n = 88) or placebo (0.9% NaCl) (n = 86) and were followed up for VAP development. The main outcome measures were incidence of VAP, duration of hospital stay, duration of PICU stay, duration of ventilation, mortality, and the characteristics of organisms isolated in cases with VAP.

Results: No difference was observed in the incidence of VAP and the type and distribution of organisms in the two groups ($p > 0.05$). In the CHX and placebo groups, we identified 21 and 22 patients with VAP, respectively. Incidence per 1000 ventilation days was 29.5 events in the CHX group and 35.1 events in the placebo group. Gram-negative bacteria were most common (71.4% in CHX vs. 54.5% in placebo). The use of 0.12% CHX did not influence hospital stay, PICU stay, ventilation, and mortality ($p > 0.05$). Multivariate analysis identified duration of ventilation as the only independent risk factor for VAP ($p = 0.001$).

Conclusion: The use of 0.12% CHX did not reduce VAP frequency among critically ill children. The only factor that increased VAP frequency was longer duration on ventilation. It appears that low concentration of CHX is not effective for VAP prevention, especially in the presence of multiresistant bacteria.

Klompas M, Branson R, Cawcutt K, Crist M, Eichenwald EC, Greene LR, Lee G, Maragakis LL, Powell K, Priebe GP, Speck K, Yokoe DS, Berenholtz SM. Strategies to prevent ventilator-associated pneumonia, ventilator-associated events, and nonventilator hospital-acquired pneumonia in acute-care hospitals: 2022 Update. Infect Control Hosp Epidemiol. 2022 Jun;43(6):687-713. doi: 10.1017/ice.2022.88. Epub 2022 May 20. PMID: 35589091; PMCID: PMC10903147.

ABSTRACT

The purpose of this document is to highlight practical recommendations to assist acute care hospitals to prioritize and implement strategies to prevent ventilator-associated pneumonia (VAP), ventilator-associated events (VAE), and non-ventilator hospital-acquired pneumonia (NV-HAP) in adults, children, and neonates. This document updates the Strategies to Prevent Ventilator-Associated Pneumonia in Acute Care Hospitals published in 2014. This expert guidance document is sponsored by the Society for Healthcare Epidemiology (SHEA), and is the product of a collaborative effort led by SHEA, the Infectious Diseases Society of America, the American Hospital Association, the Association for Professionals in Infection Control and Epidemiology, and The Joint Commission, with major contributions from representatives of a number of organizations and societies with content expertise.

Kubo A, Sakai K, Ueki S, Fujita K. Effect of perioperative oral care on postoperative infections in patients with cancer: A systematic review and meta-analysis. Jpn J Nurs Sci. 2024 Jul;21(3):e12600. doi: 10.1111/jjns.12600. Epub 2024 May 16. PMID: 38757361.

ABSTRACT

Aim: This systematic review aimed to assess the effect of non-pharmacologic perioperative oral hygiene care on reduced incidence of postoperative pneumonia (PP), surgical site infection (SSI), and the length of hospital stay in patients with cancer, and to describe the details of oral hygiene care.

Methods: We searched seven databases. Eligibility criteria were based on perioperative oral hygiene care provided by healthcare professionals to patients aged ≥18 years who were surgically treated under general anesthesia and were evaluated for the incidence of PP and SSI. We reported risk ratios (RR) for dichotomous outcomes for PP and SSI using a fixed-effects model of meta-analysis.

Results: The search resulted in 850 articles, among which two were randomized controlled trials (RCTs) and 21 were observational studies. Most studies indicated that dentists and medical care providers performed a combination of oral cleaning, and oral hygiene instructions. In RCTs, perioperative oral hygiene care significantly reduced the incidence of PP (RR, 0.86; $p = .60$), while in observational studies, perioperative oral hygiene care significantly reduced the incidence of PP (RR, 0.55; $p < .001$) and SSI (RR, 0.47; $p < .001$). The length of hospital stay was also significantly reduced ($p < .05$). However, the effectiveness of nursing intervention was not clear.

Conclusions: Perioperative oral hygiene care implemented by healthcare professionals prevented PP and SSI and reduced length of hospital stays for patients after cancer surgery. As daily perioperative oral hygiene care is performed by nurses, it is necessary to research the effects of oral hygiene by nurses in the future.

Kurasawa Y, Iida A, Narimatsu K, Sekiya H, Maruoka Y, Michiwaki Y. Effects of Perioperative Oral Management in Patients with Cancer. J Clin Med. 2022 Nov 6;11(21):6576. doi: 10.3390/jcm11216576. PMID: 36362804; PMCID: PMC9655039.

ABSTRACT

Perioperative oral management (POM) is used to prevent pneumonia in patients with cancer. However, the factors that expose hospitalized patients to increased risk of developing pneumonia remain unclear. For example, no study to date has compared the incidence of pneumonia in hospitalized patients by cancer primary lesion, or POM implementation, or not. We determined which patients were most likely to benefit from POM and examined the effects of POM on pneumonia prevention and mortality. In a total of 9441 patients with cancer who underwent surgery during hospitalization, there were 8208 patients in the No POM

group, and 1233 in the POM group. We examined between-group differences in the incidence of pneumonia and associated outcomes during hospitalization. There was no significant between-group difference in the incidence of pneumonitis, however, patients with lung, or head and neck cancers, demonstrated a lower incidence of postoperative pneumonia. Among patients with lung and pancreatic cancers, mortality was significantly lower in the POM group. POM appears effective at reducing the risk of postoperative pneumonia in patients with certain cancers. Further, mortality was significantly lower in patients with lung and pancreatic cancers who received POM; hence, POM may be an effective adjuvant therapy for patients with cancer.

Kurasawa Y, Maruoka Y, Sekiya H, Negishi A, Mukohyama H, Shigematsu S, Sugizaki J, Karakida K, Ohashi M, Ueno M, Michiwaki Y. Pneumonia prevention effects of perioperative oral management in approximately 25,000 patients following cancer surgery. Clin Exp Dent Res. 2020 Apr;6(2):165-173. doi: 10.1002/cre2.264. Epub 2019 Dec 17. PMID: 32250567; PMCID: PMC7133725.

ABSTRACT

Aim: We conducted a multicenter study to explore the risk factors of developing pneumonia and the effectiveness of perioperative oral management (POM) for the prevention of pneumonia in postsurgical patients.

Methods and results: A survey covering eight regional hospitals was conducted over 4 years, from April 2010 to March 2014. Using the Diagnosis Procedure Combination database, a target group of 25,554 patients with cancer who underwent surgery was selected and assessed from a population of 346,563 patients without pneumonia on admission (sample population). The study compared the incidence of pneumonia and attempted to identify the significant predictive factors for its occurrence in these patients using multiple logistic regression analysis. Comparative assessment for the occurrence of pneumonia before and after POM implementation showed a significant incidence decrease after POM introduction in the target group, with no such change observed in the sample population. Multiple logistic regression analysis showed that the odds ratio for pneumonia occurrence after POM introduction was 0.44, indicating a reduced risk of pneumonia.

Conclusion: POM in cancer patients was indeed effective in reducing the incidence of pneumonia in hospitals and thereby helped in preventing pneumonia during hospitalization.

Liang S, Zhang X, Hu Y, Yang J, Li K. Association between perioperative chlorhexidine oral care and postoperative pneumonia in non-cardiac surgical patients: A systematic review and meta-analysis. Surgery. 2021 Nov;170(5):1418-1431. doi: 10.1016/j.surg.2021.05.008. Epub 2021 Jun 3. PMID: 34092377.

ABSTRACT

Background: Postoperative pneumonia is the third most common complication after surgery, and its occurrence is associated with a poor prognosis in patients. Perioperative chlorhexidine oral care has been reported to reduce the incidence of postoperative pneumonia in patients undergoing cardiac surgery. However, whether perioperative chlorhexidine oral care can reduce the incidence of postoperative pneumonia in noncardiac surgical patients is still unknown. The aim of this systematic review and meta-analysis was to determine the association between perioperative chlorhexidine oral care and postoperative pneumonia in noncardiac surgical patients.

Methods: A comprehensive systematic search of PubMed, Ovid Embase, Web of Science, the Cochrane Library, Wanfang Database, and the China National Knowledge Infrastructure was conducted to include studies from the inception of each database through March 2021. The reference lists of all included studies were also searched by hand. Eligible studies were published and unpublished randomized controlled trials and observational studies evaluating the effect of perioperative chlorhexidine oral care on the reported incidence of postoperative pneumonia. Relative risks or odds ratio with their 95% confidence intervals were calculated and risk of bias was assessed for eligible studies.

Results: Seven randomized controlled trials with a total of 1,773 patients and 3 observational studies with a total of 12,528 noncardiac surgical patients were included. A total of 621 and 5,904 patients received perioperative chlorhexidine oral care in randomized controlled trials and observational studies, respectively. Six (85%) randomized controlled trials had a high risk of bias, and 2 (67%) observational studies had a high quality. Perioperative chlorhexidine oral care significantly reduced the incidence of postoperative pneumonia in randomized controlled trials (relative risk, 0.60; 95% confidence interval, 0.44-0.80; P < .001) and observational studies (odds ratio, 0.26; 95% confidence interval, 0.08-0.90; P = .03).

Conclusion: Perioperative chlorhexidine oral care led by a nurse significantly decreases the incidence of postoperative pneumonia in noncardiac surgical patients and may be more convenient and economical compared with dental professional-led perioperative oral care.

Motoi T, Matsumoto K, Imoto Y, Oho T. Effect of perioperative oral management on postoperative bloodstream infection in heart valve surgery patients. Oral Dis. 2023 Apr;29(3):1324-1332. doi: 10.1111/odi.14108. Epub 2021 Dec 23. PMID: 34923726.

ABSTRACT

Objective: There is a well-known relationship between oral hygiene and infective endocarditis. Epidemiological evidence regarding perioperative oral management (POM) for cancer surgery has been accumulated, but this evidence is not sufficient for cardiac surgery. Therefore, our purpose was to investigate whether POM can prevent postoperative complications in patients undergoing heart valve surgery.

Subjects and methods: Using single-arm medical information, we retrospectively enrolled 301 patients who underwent heart valve surgery between April 2010 and March 2019. The patient background was adjusted by the propensity score (PS). We then analyzed the impact of POM on postoperative bloodstream infection (PBSI), postoperative pneumonia, and mortality using PS inverse probability of treatment weighting (IPTW).

Results: IPTW revealed that the POM group had a lower incidence of PBSI than the control group, with an odds ratio of 0.316 (p = 0.003). The mortality in the POM group was significantly lower than that in the control group (p = 0.023). Fourteen patients died in the present study and 6 of them were infection-related.

Conclusions: POM was significantly associated with decreased incidence of PBSI and mortality. The results suggest that POM is beneficial for the prevention of PBSI and mortality in patients undergoing heart valve surgery.

Nakamatsu M, Soutome S, Nakamura Y, Imakiire A, Umeda M. Comparison of the inhibitory effects of tooth brushing and povidone-iodine mouthwash on salivary bacterial counts in patients undergoing surgery for malignant solid tumors other than head and neck cancers. J Dent Sci. 2025 Apr;20(2):854-861. doi: 10.1016/j.jds.2024.09.009. Epub 2024 Sep 30. PMID: 40224113; PMCID: PMC11993052.

ABSTRACT

Background/purpose: Infectious complications after invasive surgeries may originate from oral sources through either hematogenous infection or direct exposure to salivary bacteria. Perioperative oral management aims to remove oral foci of infection. However, the type of oral care that can reduce the salivary bacterial load remains unclear. This study aimed to identify factors influencing salivary bacterial counts during the perioperative period in patients with malignant tumors and to evaluate the effectiveness of tooth brushing and povidone-iodine mouthwash in reducing oral bacterial counts.

Materials and methods: Patients aged ≥18 years who underwent surgery under general anesthesia for malignant solid tumors other than head and neck cancer were included. Participants were randomly assigned to the brushing or povidone-iodine mouthwash groups. Factors such as sex, age, primary disease, preoperative blood-test results, oral functional metrics, and salivary bacterial counts were analyzed. Saliva samples were collected before and on the day after surgery, both before and after oral-care interventions. The total bacterial and streptococcal counts were determined using real-time polymerase chain reaction (PCR), and delayed real-time PCR was used to determine the viable bacterial count.

Results: Postoperatively, the salivary bacterial counts increased slightly. Significant factors affecting postoperative bacterial counts included high preoperative counts and postoperative fasting status. Brushing increased salivary bacterial counts, whereas the povidone-iodine mouthwash decreased them.

Conclusion: Poor preoperative oral hygiene and postoperative fasting were significantly associated with increased salivary bacterial counts. The povidone-iodine mouthwash reduced postoperative bacterial counts, indicating its effectiveness as a perioperative oral-care method.

Nobuhara H, Matsugu Y, Soutome S, Hayashida S, Hasegawa T, Akashi M, Yamada SI, Kurita H, Nakahara H, Nakahara M, Ueda N, Kirita T, Nakamura T, Shibuya Y, Mori K, Yamaguchi T. Perioperative oral care can prevent surgical site infection after colorectal cancer surgery: A multicenter, retrospective study of 1,926 cases analyzed by propensity score matching. Surgery. 2022 Aug;172(2):530-536. doi: 10.1016/j.surg.2022.02.015. Epub 2022 Apr 6. PMID: 35396104.

ABSTRACT

Background: Surgical site infection is a common postoperative complication of colorectal cancer surgery, and surgical site infection increases medical costs, prolongs hospitalization, and worsens long-term prognosis. Perioperative oral care has been reported to be effective in preventing postoperative pneumonia, although there are only a few reports on its effectiveness in preventing surgical site infection. This study aimed to determine the role of perioperative oral care in surgical site infection prevention after colorectal cancer surgery.

Methods: In this study, 1,926 patients with colorectal cancer from 8 institutions were enrolled; 808 patients (oral care group) received perioperative oral care at the hospital's dental clinic, and 1,118 (control group) did not receive perioperative oral care. The data were matched by propensity score to reduce bias. Ultimately, a total of 1,480 patients were included in the analysis.

Results: The incidence of surgical site infection was significantly lower in the oral care group than in the control group (8.4% vs 15.7%, P < .001). Multivariate logistic regression analysis revealed 4 independent risk factors for surgical site infection: low albumin level, rectal cancer, blood loss, and lack of perioperative oral care. Lack of perioperative oral care had an odds ratio of 2.100 (95% confidence interval 1.510-2.930, P < .001).

Conclusion: These results suggest that perioperative oral care can reduce the incidence of surgical site infection after colorectal cancer resection. Perioperative oral care may have an important role in the future perioperative management of colorectal cancer as a safe and effective method of surgical site infection prevention, although further validation in prospective studies is needed.

Nobuhara H, Matsugu Y, Tanaka J, Akita T, Ito K. The preventive effects of perioperative oral care on surgical site infections after pancreatic cancer surgery: a retrospective study. Support Care Cancer. 2022 Apr;30(4):3337-3344. doi: 10.1007/s00520-021-06791-9. Epub 2022 Jan 5. PMID: 34988706.

ABSTRACT

Purpose: Pancreatic ductal adenocarcinoma (PDAC) is the most malignant cancer of the gastrointestinal system, and is associated with high rates of postoperative complications, including surgical site infections (SSIs). Perioperative oral care is an effective measure for preventing postoperative pneumonia. However, the preventive effects of perioperative oral care on SSIs have not been reported. We investigated the preventive effects of perioperative oral care on SSIs after pancreatic cancer surgery.

Methods: A total of 103 patients with PDAC who underwent radical resection at Hiroshima Prefectural Hospital (2011-2018) were enrolled in this retrospective study. Of the 103 patients, 75 received perioperative oral care by dentists and dental hygienists (oral care group), whereas 28 did not (control group). Univariate and multivariate analyses with propensity score as a covariate were used to investigate the incidence and risk factors of SSIs in the oral care and control groups.

Results: The incidence of SSIs was significantly lower in the oral care group than in the control group (12.0% vs. 39.3%, P = 0.004). Logistic regression analysis revealed that a soft pancreas, the surgical procedure (pancreaticoduodenectomy), blood transfusion, diabetes mellitus, and the absence of oral care intervention were risk factors for SSIs. The odds ratio for the absence of oral care intervention was 6.090 (95% confidence interval: 1.750-21.200, P = 0.004).

Conclusion: Our results suggest that perioperative oral care may reduce the risk of developing SSIs after pancreatic cancer surgery. These findings need to be evaluated in future prospective studies.

Rutherford SJ, Glenny AM, Roberts G, Hooper L, Worthington HV. Antibiotic prophylaxis for preventing bacterial endocarditis following dental procedures. Cochrane Database Syst Rev. 2022 May 10;5(5):CD003813. doi: 10.1002/14651858.CD003813.pub5. PMID: 35536541; PMCID: PMC9088886.

ABSTRACT

Background: Infective endocarditis is a severe infection arising in the lining of the chambers of the heart. It can be caused by fungi, but most often is caused by bacteria. Many dental procedures cause bacteraemia, which could lead to bacterial endocarditis in a small proportion of people. The incidence of bacterial endocarditis is low, but it has a high mortality rate. Guidelines in many countries have recommended that antibiotics be administered to people at high risk of endocarditis prior to invasive dental procedures. However, guidance by the National Institute for Health and Care Excellence (NICE) in England and Wales states that antibiotic prophylaxis against infective endocarditis is not recommended routinely for people undergoing dental procedures. This is an update of a review that we first conducted in 2004 and last updated in 2013.

Objectives: Primary objective To determine whether prophylactic antibiotic administration, compared to no antibiotic administration or placebo, before invasive dental procedures in people at risk or at high risk of bacterial endocarditis, influences mortality, serious illness or the incidence of endocarditis. Secondary objectives To determine whether the effect of dental antibiotic prophylaxis differs in people with different cardiac conditions predisposing them to increased risk of endocarditis, and in people undergoing different high risk dental procedures. Harms Had we foundno evidence from randomised controlled trials or cohort studies on whether prophylactic antibiotics affected mortality or serious illness, and we had found evidence from these or case-control studies suggesting that prophylaxis with antibiotics reduced the incidence of endocarditis, then we would also have assessed whether the harms of prophylaxis with single antibiotic doses, such as with penicillin (amoxicillin 2 g or 3 g) before invasive dental procedures, compared with no antibiotic or placebo, equalled the benefits in prevention of endocarditis in people at high risk of this disease.

Search methods: An information specialist searched four bibliographic databases up to 10 May 2021 and used additional search methods to identify published, unpublished and ongoing studies SELECTION CRITERIA: Due to the low incidence of bacterial endocarditis, we anticipated that few if any trials would be located. For this reason, we included cohort and case-control studies with suitably matched control or comparison groups. The intervention was antibiotic prophylaxis, compared to no antibiotic prophylaxis or placebo, before a dental procedure in people with an increased risk of bacterial endocarditis. Cohort studies would need to follow at-risk individuals and assess outcomes following any invasive dental procedures, grouping participants according to whether or not they had received prophylaxis. Case-control studies would need to match people who had developed endocarditis after undergoing an invasive dental procedure (and who were known to be at increased risk before undergoing the procedure) with those at similar risk who had not developed endocarditis. Our outcomes of interest were mortality or serious adverse events requiring hospital admission; development of endocarditis following any dental procedure in a defined time period; development of endocarditis due to other non-dental causes; any recorded adverse effects of the antibiotics; and the cost of antibiotic provision compared to that of caring for patients who developed endocarditis.

Data collection and analysis: Two review authors independently screened search records, selected studies for inclusion, assessed the risk of bias in the included study and extracted data from the included study. As an author team, we judged the certainty of the evidence identified for the main comparison and key outcomes using GRADE criteria. We presented the main results in a summary of findings table.

Main results: Our new search did not find any new studies for inclusion since the last version of the review in 2013. No randomised controlled trials (RCTs), controlled clinical trials (CCTs) or cohort studies were included in the previous versions of the review, but one case-control study met the inclusion criteria. The trial authors collected information on 48 people who had contracted bacterial endocarditis over a specific two-year period and had undergone a medical or dental procedure with an indication for prophylaxis within the past 180 days. These people were matched to a similar group of people who had not contracted bacterial endocarditis. All study participants had undergone an invasive medical or dental procedure. The two groups were compared to establish whether those who had received preventive antibiotics (penicillin) were less likely to have developed endocarditis. The authors found no significant effect of penicillin prophylaxis on the incidence of endocarditis. No data on other outcomes were reported. The level of certainty we have about the evidence is very low.

Authors' conclusions: There remains no clear evidence about whether antibiotic prophylaxis is effective or ineffective against bacterial endocarditis in at-risk people who are about to undergo an invasive dental procedure. We cannot determine whether the potential harms and costs of antibiotic administration outweigh any beneficial effect. Ethically, practitioners should discuss the potential benefits and harms of antibiotic prophylaxis with their patients before a decision is made about administration.

Sakai H, Kurita H, Kondo E, Tanaka H, Shimane T, Hashidume M, Yamada SI. Dental and oral management in the perioperative period of surgery: A scoping review. Jpn Dent Sci Rev. 2024 Dec;60:148-153. doi: 10.1016/j.jdsr.2024.03.002. Epub 2024 Apr 11. PMID: 38633513; PMCID: PMC11021219.

ABSTRACT

Dental and oral management (DOM) is a long-established treatment modality. This scoping review aimed to narratively review previous studies, examine the effects of perioperative DOM, and identify the available evidence. A literature search was conducted using the PubMed electronic database for studies published between January 1, 2000, and March 8, 2022. The search yielded 43 studies, most of which were published in the last 10 years. The results of this study confirmed that improved perioperative oral hygiene is effective in preventing postoperative pneumonia. Our results also suggested that preoperative DOM is effective in preventing postoperative surgical site infections. Perioperative DOM is effective in reducing the incidence of postoperative pneumonia, SSI, and postsurgical complications. Further studies are needed to elucidate the various mechanism of DOM and to examine efficient intervention methods and timing.

Sakamoto Y, Tanabe A, Moriyama M, Otsuka Y, Funahara M, Soutome S, Umeda M, Kojima Y. Number of Bacteria in Saliva in the Perioperative Period and Factors Associated with Increased Numbers. Int J Environ Res Public Health. 2022 Jun 21;19(13):7552. doi: 10.3390/ijerph19137552. PMID: 35805211; PMCID: PMC9265513.

ABSTRACT

Perioperative oral management is performed to prevent postoperative complications, but its indication and management method are unclear. This study aimed to investigate salivary bacterial counts pre-and postoperatively, and factors related to increased bacterial count postoperatively. We included 121 patients who underwent surgery under general anesthesia and perioperative oral management. The bacterial count in saliva was determined preoperatively, and first and seventh days postoperatively using the dielectrophoresis and impedance measurement methods. The relationships between salivary bacterial count and various variables were analyzed using one-way analysis of variance, Spearman's rank correlation coefficient, and multiple regression analysis. The salivary bacterial count increased significantly on the first day postoperatively but decreased on the seventh day. Multivariate analysis showed that age ($p = 0.004$, standardized coefficient $\beta = 0.283$) and xerostomia ($p = 0.034$, standardized coefficient $\beta = 0.192$) were significantly correlated with increased salivary bacterial count preoperatively. Salivary bacterial count on the day after surgery was significantly increased in patients with a large number of bacterial counts on the day before surgery after preoperative oral care ($p = 0.007$, standardized coefficient $\beta = 0.241$) and postoperative fasting ($p = 0.001$, standardized coefficient $\beta = -0.329$). Establishing good oral hygiene before surgery and decreasing salivary bacterial count are necessary in patients with a high risk of postoperative surgical site infection or pneumonia, especially in older adults or postoperative fasting.

Sekiya H, Kurasawa Y, Kaneko K, Takahashi KI, Maruoka Y, Michiwaki Y, Takeda Y, Ochiai R. Preventive Effects of Sustainable and Developmental Perioperative Oral Management Using the "Oral Triage" System on Postoperative Pneumonia after Cancer Surgery. Int J Environ Res Public Health. 2021 Jun 10;18(12):6296. doi: 10.3390/ijerph18126296. PMID: 34200726; PMCID: PMC8296101.

ABSTRACT

Perioperative oral management is widely recognized in the healthcare system of Japan. Conventionally, the surgeon refers patients with oral problems to a dental or oral surgery clinic in the hospital. However, frequent in-house referrals were found to increase the number of incoming patients resulting in unsustainable situations due to an insufficient workforce. In 2011, the Center for Perioperative Medicine was established at our hospital to function as a management gateway for patients scheduled to undergo surgery under general anesthesia. The "oral triage" system, wherein a dental hygienist conducts an oral screening to select patients who need preoperative oral hygiene and functional management, was established in 2012. A total of 37,557 patients who underwent surgery at our hospital from April 2010 to March 2019 (two years before and seven years after introducing the system) were evaluated in this study. The sustainability and effectiveness of introducing the system were examined in 7715 cancer surgery patients. An oral management intervention rate of 20% and a significant decrease in the incidence of postoperative pneumonia (aOR = 0.50, p = 0.03) indicated that this system could be useful as a sustainable and developmental oral management strategy to manage surgical patients with minimal human resources.

Sekiya H, Kurasawa Y, Maruoka Y, Mukohyama H, Negishi A, Shigematsu S, Sugizaki J, Ohashi M, Hasegawa S, Kobayashi Y, Ueno M, Michiwaki Y. Cost-Effectiveness Analysis of Perioperative Oral Management after Cancer Surgery and an Examination of the Reduction in Medical Costs Thereafter: A Multicenter Study. Int J Environ Res Public Health. 2021 Jul 13;18(14):7453. doi: 10.3390/ijerph18147453. PMID: 34299904; PMCID: PMC8304623.

ABSTRACT

In April 2012, perioperative oral management (POM) was approved for inclusion in the national health insurance system of Japan to prevent the occurrence of pneumonia, a major complication in cancer patients. The subsequent decrease in the incidence of postoperative pneumonia indicated the prophylactic effect of POM. The constant increase in health expenditure necessitates a cost-effectiveness analysis. In addition, the effect of reducing healthcare costs owing to health technologies must be evaluated. In the present multi-institutional study, the cost-effectiveness analysis of POM was conducted by comparing the incidence of postoperative pneumonia and the healthcare costs between patients who received surgery for malignant tumors before (n = 11,886) and after (n = 13,668) the introduction of POM. Additionally, the effect of reducing healthcare costs was evaluated. Reductions in the number of patients who developed pneumonia, duration of hospitalization, and number of deaths were observed after the introduction of POM. The incremental cost-effectiveness ratio was 111,927 yen, hence the prevention of postoperative pneumonia needs 111,927 yen per patient in healthcare costs. Consequently, a maximum reduction of 250,368,129 yen in healthcare costs was observed between the incremental costs for pneumonia treatment and the cost of POM. These findings indicate that improvements in cost-effectiveness can be expected in the future through the development of procedure and system for POM.

Shuai Y, Wang X, Chen S, Huang T, Wang Z, Zhang Y. Preoperative oral hygiene treatment reduces bacterial transport and colonization during intubation for orthopedic surgery. J Oral Sci. 2024;66(2):134-138. doi: 10.2334/josnusd.23-0425. PMID: 38631883.

ABSTRACT

Purpose: The process of infection by bacteria and viruses involves invasion, establishment, growth, and parasitization. Poor oral hygiene and dysbiosis are significant risk factors for pneumonia. The aim of this study was to evaluate bacterial transport into the trachea during intubation for orthopedic surgery and the impact of oral hygiene treatment.

Methods: The study cohort included 53 patients with fracture who underwent surgical procedures under general anesthesia and were divided into two groups: an oral hygiene treatment (OHT) group (n = 27) and a control group (n = 26). Before intubation, the OHT group underwent preoperative oral hygiene treatment. Microbiological culture was used for detection and counting of bacteria from the oropharynx, trachea, and tip of the endotracheal tube (ETT).

Results: Patients in the OHT group had a lower pathogen detection rate and lower degree of bacterial colonization in the oropharynx, trachea, and ETT tip.

Conclusion: Preoperative oral hygiene treatment is able to reduce bacterial transport and colonization during orthopedic surgery, thus providing an important adjunct to pre-anesthesia care.

Intervención: Cepillado + colutorio con clorhexidina (15 mL al 0,12 %) 30 min antes de la inducción.

Resultados microbiológicos: Reducción significativa de bacterias en vía aérea y en punta del tubo endotraqueal.

Outcomes clínicos:

Neumonía postoperatoria: OHT (0 %) vs control (7,7 %), p = 0,236 ≈ **no significativa**, probablemente por baja incidencia y antibióticos postoperatorios rutinarios mdpi.com+2jamanetwork.com+2sciencedirect.com+2jstage.jst.go.jp.

Conclusión: Aunque mejora limpieza oral y reduce colonización, **no demostró beneficio clínico real en términos de infección pulmonar**.

Interpretación

- Este estudio fue realizado por dentistas, se enfoca en higiene oral previa a anestesia y mide tanto datos microbiológicos como clínicos.
- A pesar de una buena reducción de bacterias, **no mostró reducción significativa de neumonía ni de otros eventos adversos** tras la cirugía.
- Refuerza la idea de que **mejoras microscópicas no siempre se traducen en beneficios clínicos**, especialmente si otros factores (usar antibióticos, baja incidencia del evento) influyen.

Simon SJ, Aziz AA, Coden GS, Smith EL, Hollenbeck BL. Antibiotic Prophylaxis Prior to Dental Procedures After Total Hip and Knee Arthroplasty Does Not Decrease the Risk of Periprosthetic Joint Infection. J Arthroplasty. 2024 Sep;39(9S2):S420-S424. doi: 10.1016/j.arth.2024.02.046. Epub 2024 Feb 22. PMID: 38401610.

ABSTRACT

Background: Periprosthetic joint infection (PJI) is a devastating complication after total hip and total knee arthroplasty (THA/TKA). While some guidelines no longer recommend routine use of prophylactic antibiotics for dental procedures, many surgeons continue to prescribe antibiotics for their THA/TKA patients. In a setting of increasing antibiotic resistance, it is important to reduce unnecessary antibiotic use. This study aims to evaluate antibiotics prior to dental procedures and the association between dental procedures and PJI.

Methods: We conducted a retrospective cohort study of patients who underwent THA/TKA between January 1, 2019 and December 31, 2020. The primary outcome was late-presenting PJI, occurring > 90 days after surgery. Patients were designated in the antibiotic group (2,000 mg of amoxicillin) or non-antibiotic group based on their surgeon's prophylaxis protocol. Dental-associated PJIs were considered if the patient had evidence of poor dentition or a recent dental procedure prior to the onset of PJI symptoms.

Results: There were 2,871 (26.4%) patients in the no antibiotics group and 8,023 (73.6%) patients in the antibiotics group. We found 27 (0.3%) late-presenting PJIs and 4 dental-associated PJIs. In the univariate and multivariable analyses, body mass index ≥-30 and revision surgery were the only variables that increased the odds of late-presenting PJI. All 4 dental-associated PJIs occurred in patients prescribed antibiotics.

Conclusions: We found a low rate of late-presenting PJI. Routine antibiotics prior to dental procedures were not shown to affect the risk of late-presenting PJI. These findings suggest that routine antibiotic prophylaxis before dental procedures is not necessary after THA/TKA.

Soutome S, Hasegawa T, Yamguchi T, Aoki K, Kanamura N, Mukai T, Yamazoe J, Nishikawa M, Isomura E, Hoshi K, Umeda M; Joint Research Committee of Japanese Society of Oral Care. Prevention of postoperative pneumonia by perioperative oral care in patients with esophageal cancer undergoing surgery: a multicenter retrospective study of 775 patients. Support Care Cancer. 2020 Sep;28(9):4155-4162. doi: 10.1007/s00520-019-05242-w. Epub 2020 Jan 2. PMID: 31897780.

ABSTRACT

Purpose: Postoperative pneumonia is one of the major complications after esophageal cancer surgery. The risk factors associated with postoperative pneumonia are poor general health, smoking, decreased pulmonary function, diabetes mellitus, surgical stress, old age, postoperative aspiration, and oral hygiene. In this study, we examined the effect of perioperative oral care on reducing postoperative pneumonia since the evidence to-date is not clear.

Methods: A multicenter, retrospective investigation of the relationship between perioperative oral care and incidence of postoperative pneumonia in patients undergoing esophageal cancer surgery was conducted. A total of 775 patients who underwent thoracoscopic esophageal resection at 25 hospitals between 2016 and 2017 were enrolled in the study. Various factors were examined for correlation with development of postoperative pneumonia.

Results: Multivariate analysis showed that old age, smoking habit, lower hemoglobin, higher creatinine, postoperative dysphagia, and lack of oral care intervention were independent risk factors for pneumonia. Oral care was more effective in preventing pneumonia in hospitals in which the incidence of postoperative pneumonia was lower than 20%, while it was not effective in hospitals in which the incidence was higher than 20%.

Conclusion: Results of the study suggest that it is recommended to carry out perioperative oral care in esophageal cancer surgery.

Steinle EC, Pinesso JAM, Bellançon LB, de Paula Ramos S, Seixas GF. The association of oral health with length of stay and mortality in the intensive care unit. Clin Oral Investig. 2023 Jul;27(7):3875-3884. doi: 10.1007/s00784-023-05008-z. Epub 2023 Apr 5. PMID: 37017755.

ABSTRACT

Objectives: To analyze the relationship between the oral and systemic health status of adult patients admitted to the intensive care unit (ICU) with the length of stay and mortality.

Material and methods: A daily oral examination and oral hygiene were performed in patients admitted to an adult ICU. Dental and oral lesions, systemic health status, the need for mechanical ventilation, length of stay, and mortality were registered. Multivariate linear and logistic regression analyses were performed to identify associations between length of stay and death of patients, respectively, with oral and systemic health status.

Results: In total, 207 patients were included, 107 (51.7%) male. Ventilated patients presented an increased length of stay ($p < 0.001$), mortality ($p < 0.0001$), number of medications ($p < 0.0001$), edentulism ($p = 0.001$), mucous lesions and bleeding ($p < 0.0001$), oropharyngitis ($p = 0.03$), and drooling ($p < 0.001$) compared to non-ventilated patients. The number of days in the ICU was associated with mechanical ventilation ($p = 0.04$), nosocomial pneumonia ($p = 0001$), end-stage renal disease ($p < 0.0007$), death ($p < 0.0001$), mucous bleeding ($p = 0.01$), tongue coating ($p = 0.001$), and cheilitis ($p = 0.01$). Mortality was associated with length of stay in the ICU ($p < 0.0001$), number of medications ($p < 0.0001$), and the need for mechanical ventilation ($p = 0.006$).

Conclusion: ICU patients present poor oral health. Soft tissue biofilm and mucous ulcerations were associated with the length of stay in the ICU, but not with the mortality rate.

Clinical relevance: Mucous lesions are associated with an increased length of stay in the ICU, and critically ill patients should receive oral care to control oral foci of infection and mucous lesions.

Suenaga H, Schifter M, Chen N, Ali F, Byth K, Peck C. Impact of oral/dental disease burden on postoperative infective complications: a prospective cohort study. Clin Oral Investig. 2023 Nov;27(11):6461-6470. doi: 10.1007/s00784-023-05251-4. Epub 2023 Sep 20. PMID: 37730892; PMCID: PMC10630249.

ABSTRACT

Objectives: This prospective cohort study aimed to assess the association between dental disease burden and postoperative infective complications (POICs) in patients undergoing major surgical procedures under general anaesthesia.

Methods: Pre-surgical dental assessment was undertaken on patients planned for major surgery. Demographic and surgical variables including putative risk factors for POICs and POIC status were documented. The univariable association between POIC status and each factor was examined. Those variables associated at P value ≤ 0.2 were candidates for inclusion in multiple logistic regression models. Backward stepwise variable selection was used to identify the independent predictors for POIC in the best fitting logistic regression model. The area under the receiver operating curve (AUC) was used to quantify the model's global classification performance.

Results: Among the 285 patients, 49 patients (17.2%) had POICs. The independent predictors for POIC were expected length of hospital stay (4-6 days; odds ratio [OR] = 4.80, 95% confidence internal [CI]: 1.30-17.70, P = 0.018, 7-9 days; OR = 5.42, 95% CI: 1.51-19.41, P = 0.009, ≥ 10 days; OR = 28.80, 95% CI: 4.12-201.18, P < 0.001), four or more decayed teeth (OR = 6.03, 95% CI: 2.28-15.94, P < 0.001) and visible tongue plaque (OR = 3.21, 95% CI: 1.54-6.70, P = 0.002). The AUC was 0.78 (95% CI: 0.71-0.85) indicating good discrimination. A simple screening tool for POIC was developed.

Conclusions/clinical relevance: In addition to systemic/surgical factors, this study identified clinically detected decayed teeth and visible tongue plaque as independent predictors for POICs. Preoperative dental assessment/care might be beneficial to assess risk for POICs and improve postoperative outcomes.

Terano K, Motoi T, Nagata E, Oho T. Association of remaining tooth number with postoperative respiratory complications in heart valve surgery patients. Int J Dent Hyg. 2024 May;22(2):394-400. doi: 10.1111/idh.12673. Epub 2023 Feb 21. PMID: 36760162.

ABSTRACT

Objectives: This study examined the association between the number of remaining teeth and the incidence of postoperative respiratory complications in patients undergoing heart valve surgery.

Methods: We retrospectively enrolled 157 patients who underwent heart valve surgery between April 2010 and March 2019. Data on patient characteristics including systemic and oral conditions were extracted and postoperative respiratory complications were set as outcomes. Patients were divided into two groups according to the number of remaining teeth (≥20, <20). After adjusting for confounding factors with propensity scoring, logistic regression analysis was performed to examine the association of remaining teeth number with the incidence of postoperative respiratory complications. In addition, subgroup analysis was performed by stratifying the data into quintiles based on the propensity score.

Results: Univariate analysis showed significant differences between the two groups in factors, including age, past cardiac surgery experience, New York Heart Association functional classification class IV, denture use, tooth extraction before surgery, occlusal support, and periodontitis. Logistic regression analysis showed that patients with <20 remaining teeth had a significantly higher incidence of postoperative respiratory complications than those with ≥20 remaining teeth, with an odds ratio of 29.800 (p = 0.004). Subgroup analysis showed that the odds ratio for the patients with <20 remaining teeth was 9.000 (p = 0.038).

Conclusions: The results suggest that heart valve surgery patients shall get attention on oral disease prevention by dental care practitioners to maintain a sufficient number of teeth for the prevention of postoperative respiratory complications.

Thoresen T, Jordal S, Lie SA, Wünsche F, Jacobsen MR, Lund B. Infective endocarditis: association between origin of causing bacteria and findings during oral infection screening. BMC Oral Health. 2022 Nov 15;22(1):491. doi: 10.1186/s12903-022-02509-3. PMID: 36376875; PMCID: PMC9664784.

ABSTRACT

Background: Oral streptococci represent the causing microorganism for infective endocarditis (IE) in many patients. The impact of oral infections is questioned, and it has been suggested that bacteraemia due to daily routines may play a bigger part in the aetiology of IE. The aim of this study was to examine the association between oral health and infective endocarditis caused by oral bacteria in comparison with bacteria of other origin than the oral cavity.

Methods: A retrospective study was conducted at Haukeland University Hospital from 2006- 2015. All consecutive adult patients admitted to hospital for treatment of IE and subjected to an oral focus screening including orthopantomogram, were included. The clinical, radiological and laboratory characteristics of the patients, collected during oral infectious focus screening, were analysed. Patient survival was calculated using Kaplan-Meier and mortality rates were compared using Cox-regression.

Results: A total of 208 patients were included, 77% (n = 161) male patients and 23% (n = 47) female, mean age was 58 years. A total of 67 (32%) had IE caused by viridans streptococci. No statistically significant correlation could be found between signs of oral infection and IE caused by viridans streptococci. The overall mortality at 30 days was 4.3% (95% CI: 1.6-7.0). There was no statistical difference in mortality between IE caused by viridans streptococci or S. aureus (HRR = 1.16, 95% CI: 0.57-2.37, p = 0.680).

Conclusion: The study indicates that the association between origin of the IE causing bacteria and findings during oral infection screening might be uncertain and may suggest that the benefit of screening and elimination of oral infections in patients admitted with IE might be overestimated. However, the results should be interpreted with caution and further studies are needed before any definite conclusions can be drawn.

Wu JH, Lee KT, Cheng KI, Du JK, Lee CY. Patient perception of service quality to preanesthetic oral examination: a cross-sectional study using the SERVQUAL model. BMC Oral Health. 2024 Jan 22;24(1):120. doi: 10.1186/s12903-024-03853-2. PMID: 38254042; PMCID: PMC10801931.

ABSTRACT

Background: A phase-III interdisciplinary quality improvement program, the preanesthetic oral examination (PAOE), was implemented as a new program in an academic medical center to prevent perioperative dental injuries. This study was aimed at surveying the perceived service quality and satisfaction of patients who had undergone PAOE based on the SERVQUAL model.

Methods: This cross-sectional survey was conducted at the Kaohsiung Medical University Hospital using convenience sampling. Patients referred for PAOE (PAOE group) and those who had voluntarily availed dental services (control group) were recruited. A modified SERVQUAL questionnaire was used to assess the perceived service quality and patient satisfaction with dental services. Cronbach's alpha for SERVQUAL was 0.861.

Results: We enrolled 286 (68.8%) and 130 (31.2%) participants in the PAOE and control groups, respectively. The path analysis revealed that the PAOE group scored lower in dimensions of reliability (β = -0.074, P = 0.003), responsiveness (β = -0.148, P = 0.006), and empathy (β = -0.140, P = 0.011). Furthermore, reliability (β = 0.655, P < 0.001) and responsiveness (β = 0.147, P = 0.008) showed a direct effect on patient satisfaction. Overall, participants were highly satisfied with the dental services.

Conclusions: The PAOE group showed lower satisfaction and perceived quality of dental services compared to the control group. Although implementing an interdisciplinary program reduces the perceived service quality, its influence is limited. Employing an interdisciplinary teamwork is a win-win strategy encouraged to improve patient safety and reduce malpractice claims. Future suggestions should focus on establishing waiting times that are considered reasonable by patients. Patient-centered education related to the risk of perioperative dental injuries should be provided, and awareness of oral conditions for patient safety should be improved. Moreover, interprofessional education in continuous and undergraduate programs is necessary to improve professional quality.

Yamamura Y, Umeyama R, Yamazaki J, Koroku S, Namaki S, Ishikawa S, Shinohara M. A Survey of Periodic Dental Visits Among Patients Receiving Preoperative Consultations. Juntendo Med J. 2025 Apr 3;71(2):121-126. doi: 10.14789/ejmj.JMJ24-0040-CR. PMID: 40395916; PMCID: PMC12086461.

ABSTRACT

Objectives: The aim of this study was to examine the correlation between regular dental visits and the oral health status.

Design: This was a retrospective study.

Methods: We included 3,138 patients who visited the preoperative outpatient clinic and underwent oral examinations between April and September 2020. Patients whose last dental visit occurred less than one year prior to data collection constituted the regular visit group, while the irregular-visit group comprised those with a last dental visit beyond one year prior to data collection. We examined the following information: last dental visit, sex, age, disease causing hospitalization, frequency of daily brushing, presence or absence of moving teeth, and oral hygiene status.

Results: The frequency of brushing was lower in the irregular-visit group than in the regular-visit group, suggesting a lower awareness of oral health in the irregular-visit group. Furthermore, the oral hygiene status in the regular-visit group was better than that in the irregular-visit group, with more patients showing no tartar deposition.

Conclusions: Regular dental checkups can mitigate perioperative complications, preventing them from adversely affecting the treatment of the underlying disease. It is crucial to emphasize the importance of oral management, explain the need for it, and actively encourage regular dental visits.

Yamanaka-Kohno R, Shirakawa Y, Yokoi A, Inoue-Minakuchi M, Kobayashi M, Noma K, Morita M, Kuboki T, Morimatsu H, Soga Y. Patients scheduled to undergo esophageal surgery should have the highest priority for perioperative oral management triage: a cross-sectional study. Gen Thorac Cardiovasc Surg. 2022 Apr;70(4):378-385. doi: 10.1007/s11748-021-01757-4. Epub 2022 Jan 16. PMID: 35034335.

ABSTRACT

Objectives: An increasing number of patients visiting the dental office have a growing need for perioperative oral management (POM) to prevent postoperative complications. Therefore, it is necessary to determine which patients should receive preferential POM. This study investigated the dental status of patients scheduled to undergo surgery and addressed the priority for POM.

Methods: This retrospective study included a total of 150 patients who were scheduled to undergo surgery at the Department of Respiratory Surgery (DRS), Department of Neurological Surgery (DNS), Department of Gynecological Surgery (DGS), Department of Breast and Endocrine Surgery (DBES), and Department of Esophageal Surgery (DES) managed by the Perioperative Management Center of Okayama University Hospital. We compared the general and dental status of patients among the five groups.

Results: The DES group had significantly fewer teeth than the DBES group ($p = 0.012$), more severe periodontitis than both the DBES ($p = 0.005$) and DNS groups ($p = 0.020$), and poorer molar occlusal support status than both the DBES ($p = 0.002$) and DGS groups ($p = 0.041$). The DES group exhibited a significantly higher median age ($p = 0.002$), a higher ratio of males ($p < 0.001$), a higher prevalence of malignant tumors ($p < 0.001$), and higher proportions of smokers ($p < 0.001$) and drinkers ($p < 0.001$) than the other groups.

Conclusion: Patients who underwent surgery at the DES had more dental problems than other surgery patients. Accordingly, these patients should be given the highest priority for POM triage.

Yamguchi T, Mori K, Kojima Y, Hasegawa T, Hirota J, Akashi M, Soutome S, Yoshimatsu M, Nobuhara H, Matsugu Y, Kato S, Shibuya Y, Kurita H, Yamada SI, Nakahara H; Joint Research Committee of Japanese Society of Oral Care. Efficacy of perioperative oral care management in the prevention of surgical complications in 503 patients after pancreaticoduodenectomy for resectable malignant tumor: A multicenter retrospective analysis using propensity score matching. Surgery. 2024 Apr;175(4):1128-1133. doi: 10.1016/j.surg.2023.11.008. Epub 2023 Dec 6. PMID: 38061914.

ABSTRACT

Background: Pancreaticoduodenectomy has been associated with a high mortality rate and significant postoperative morbidity. Recently, perioperative oral care management has been reported to be effective in preventing postoperative pneumonia and surgical site infection. In this study, we examined the effect of perioperative oral care management in reducing complications after pancreaticoduodenectomy, including surgical site infection.

Methods: This retrospective multicenter study included 503 patients who underwent pancreaticoduodenectomy at 8 facilities between January 2014 and December 2016. Among these, 144 received perioperative oral management by dentists and dental hygienists (oral management group), whereas the remaining 359 did not (control group). The oral care management program included oral health instructions, removal of dental calculus, professional mechanical tooth cleaning, removal of tongue coating, denture cleaning, instructions for gargling, and tooth extraction. The participants were matched using propensity scores to reduce background bias. Various factors were examined for correlation with the development of complications.

Results: The incidence of organ/space surgical site infection was significantly lower in the oral management group than in the control group (8.0% vs 19.6%, P = .005). Multivariable logistic regression analysis revealed that hypertension and lack of perioperative oral management were independent risk factors for organ/space surgical site infection. Lack of perioperative oral management had an odds ratio of 2.847 (95% confidence interval 1.335-6.071, P = .007).

Conclusion: Perioperative oral care management reduces the occurrence of surgical site infections after pancreaticoduodenectomy and should be recommended as a strategy to prevent infections in addition to antibiotic use.

Yoshitomi A, Soga Y, Yamanaka-Kohno R, Morimatsu H. Sensitivity and specificity of the question "do you have any concerns regarding your mouth related to undergoing surgery?" for predicting perioperative oral health problems in patients with primary esophageal and lung cancer: a retrospective observational study. Perioper Med (Lond). 2024 May 6;13(1):36. doi: 10.1186/s13741-024-00394-8. PMID: 38711163; PMCID: PMC11071221.

ABSTRACT

Background: Perioperative oral management contributes to the prevention of dental/systemic complications. However, a professional dental checkup before surgery is generally not performed and relies on the patient's answer to a simple question by medical professionals other than dentists: "Do you have any concerns regarding your mouth related to undergoing surgery?" Here, we evaluated the sensitivity and specificity of this question for predicting perioperative oral health problems in patients with primary esophageal and primary lung cancer.

Methods: We performed an oral cavity check in all patients before scheduled surgery for primary esophageal and lung cancer. A total of 183 patients were enrolled (M, 112; F, 71; 24-88 years, median, 69 years), consisting of 61 with primary esophageal cancer (M, 46; F, 15; 24-85 years, median, 69 years) and 122 with primary lung cancer (M, 66; F; 56; 33-88 years, median, 69 years). All subjects provided a response to this question, and an oral cavity check was performed by dentists. The sensitivity and specificity of this question for detecting oral health problems were evaluated retrospectively.

Results: Overall sensitivity and specificity for detecting oral health problems were 0.263 and 0.898, respectively. There were no significant differences by sex or disease (primary esophageal or lung cancer).

Conclusion: This simple question has low sensitivity but high specificity for detecting oral health problems. Although challenging to detect surgical patients with oral health problems by simply asking questions, the results indicated that patients with oral complaints are more likely to have problems during surgery.

torres
CENTRO DENTAL INTEGRAL

02

Conclusiones destacadas

Conclusiones destacadas

La salud periodontal **influye en el riesgo de complicaciones postoperatorias** y debe ser tenida en cuenta en protocolos prequirúrgicos, especialmente en **pacientes frágiles o oncológicos**, y en contextos de **anestesia general**.

1. Camus-Jansson F et al. (2023)
2. Revisión en pacientes oncológicos (2023)
3. Cirugía colorrectal – Japón (2023)
4. Revisión sistemática + meta-análisis (2023)
5. Cirugía cardiovascular (2023)
6. Conclusión global
7. CONCLUSIONES ACTUALIZADAS – TORRES ANESTESIOLOGÍA

1. CAMUS-JANSSON F ET AL. (2023)

Tipo: Revisión sistemática + meta-análisis

Población: 5 estudios con pacientes sometidos a cirugía general

Hallazgos:

- Periodontitis se asocia con mayor riesgo de complicaciones postoperatorias (OR = 4,76; IC 95 % 1,11–20,41).
- Elevado impacto de enfermedad periodontal no tratada en procesos quirúrgicos generales.
- **Relevancia:** Justifica cribado periodontal preoperatorio en cirugía electiva.

2. REVISIÓN EN PACIENTES ONCOLÓGICOS (2023)

Tipo: Revisión sistemática (2 ECA + 21 observacionales)

Población: Pacientes oncológicos sometidos a cirugía mayor

Hallazgos:

- La higiene oral perioperatoria reduce infecciones respiratorias y de herida quirúrgica.
- También se observó reducción de estancia hospitalaria.
- **Relevancia:** Refuerza la necesidad de incluir la salud oral como parte de los cuidados perioperatorios, especialmente en inmunocomprometidos.

3. CIRUGÍA COLORRECTAL – JAPÓN (2023)

Tipo: Cohorte retrospectiva

Población: 698 pacientes con cáncer colorrectal

Hallazgos:

- Los que recibieron manejo oral preoperatorio tuvieron menor tasa de SSI (infección del sitio quirúrgico): OR = 0,484 (p = .014).
- Menor duración de ingreso.

Relevancia: Relación directa entre cuidado oral previo y reducción de complicaciones infecciosas en cirugía abdominal.

4. REVISIÓN SISTEMÁTICA + META-ANÁLISIS (2023)

Tipo: Meta-análisis

Población: Cirugía oncológica variada

Hallazgos:

- El riesgo relativo de complicaciones postoperatorias se redujo (RR = 0.48) con higiene oral adecuada.
- Las medidas más efectivas fueron limpieza profesional, colutorios y desinfección mecánica.

Relevancia: Intervención sencilla con gran impacto preventivo.

5. CIRUGÍA CARDIOVASCULAR (2023)

Tipo: Estudio comparativo histórico

Población: Pacientes sometidos a cirugía cardíaca mayor

Hallazgos:

- Tratamiento periodontal preoperatorio redujo tasa de neumonía postoperatoria y necesidad de antibióticos.
- Menos infecciones respiratorias asociadas a ventilador.

Relevancia: Directamente extrapolable a pacientes de anestesia general prolongada.

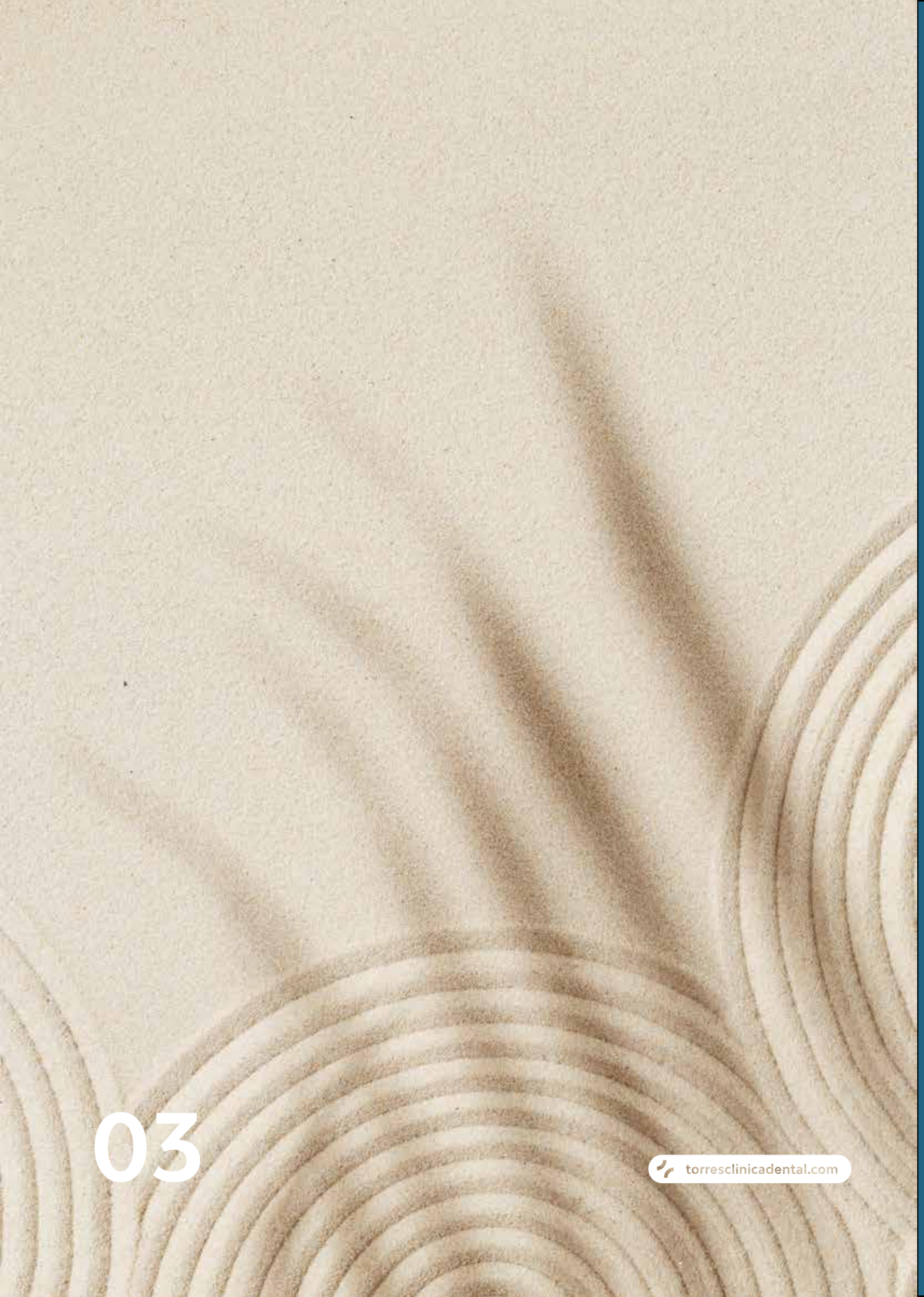
CONCLUSIÓN GLOBAL

Las cinco publicaciones muestran de forma consistente que:

- **La periodontitis no tratada es un factor de riesgo relevante en cirugía.**
- **El tratamiento o la higiene oral preoperatoria disminuyen complicaciones (SSI, neumonía, estancia).**
- **Es especialmente importante en pacientes oncológicos, cardiovasculares o con anestesia general prolongada.**

CONCLUSIONES ACTUALIZADAS – TORRES ANESTESIOLOGÍA

1. **La salud periodontal previa a una intervención con anestesia general puede influir en la tasa de complicaciones postoperatorias**, especialmente en pacientes oncológicos, frágiles o con riesgo respiratorio. Así lo confirman múltiples estudios observacionales y algunos ensayos controlados.
2. **La reducción de bacterias orales mediante higiene profesional antes de la cirugía ha demostrado disminuir la colonización de la vía aérea**, lo cual podría prevenir infecciones respiratorias, aunque este beneficio clínico **no siempre alcanza significación estadística**, especialmente cuando la muestra es pequeña o existen factores de confusión como la antibioterapia general.
3. **No todos los estudios coinciden en el beneficio clínico directo del tratamiento periodontal preoperatorio.** En áreas como la cirugía cardíaca o en pacientes con prótesis ortopédicas, varias revisiones y ensayos controlados **no han mostrado diferencias significativas en eventos clínicos graves** (ej. endocarditis, infecciones articulares o reducción de estancia hospitalaria).
4. Por tanto, **el beneficio de las intervenciones dentales preanestésicas debe considerarse según el tipo de cirugía, el perfil del paciente y la evidencia disponible**. En pacientes oncológicos y en cirugía abdominal o respiratoria, parece más justificado; en otros contextos, **aún se requiere más investigación de calidad para establecer protocolos universales.**



torres
CENTRO DENTAL INTEGRAL

03

Conclusiones destacadas individuales

Conclusiones destacadas individuales

1. Alrawashdeh et al. (2025)
2. Akashi et al. (2019)
3. Buzquurz et al. (2020)
4. Cueto Urbina et al. (2023)
5. Danilkowicz et al. (2021)
6. de Jong et al. (2025)
7. East et al. (2023)
8. Funahara et al. (2024)
9. Honda et al. (2024)
10. Ishikawa et al. (2021)
11. Isomura et al. (2023)
12. Kai et al. (2021)
13. Karakaya et al. (2022)
14. Klompas et al. (2022)
15. Kubo et al. (2024)
16. Kurasawa et al. (2022)
17. Kurasawa et al. (2020)
18. Liang et al. (2021)
19. Motoi et al. (2023)
20. Nakamatsu et al. (2025)
21. Nobuhara et al. (2022, Surgery)
22. Nobuhara et al. (2022, Support Care Cancer)
23. Rutherford et al. (2022, Cochrane)
24. Sakai et al. (2024, Jpn Dent Sci Rev)
25. Sakamoto et al. (2022, Int J Environ Res Public Health)
26. Sekiya et al. (2021a, Int J Environ Res Public Health)
27. Sekiya et al. (2021b, Int J Environ Res Public Health)
28. Shuai et al. (2024, J Oral Sci)
29. Simon et al. (2024, J Arthroplasty)
30. Soutome et al. (2020, Support Care Cancer)
31. Steinle (2023)
32. Suenaga (2023)
33. Terano (2024)
34. Thoresen (2022)
35. Wu (2024)
36. Yamamura (2025)
37. Yamanaka-Kohno (2022)
38. Yamaguchi (2024)
39. Yoshitomi (2024)

ALRAWASHDEH ET AL. (2025)

Estudio retrospectivo en 4.999 pacientes críticos. Muestra una fuerte asociación entre mala salud oral y mayor mortalidad, así como peores resultados clínicos en UCI. El uso frecuente de colutorio con clorhexidina se relacionó con mejores desenlaces, estableciendo un umbral óptimo de 15,5 aplicaciones semanales.

AKASHI ET AL. (2019)

Artículo de revisión que propone un protocolo de intervención oral perioperatoria en cirugía cardiovascular. Aunque justifica el enfoque desde la fisiopatología, señala que aún no hay evidencia clínica sólida en esta población, salvo en contextos oncológicos.

BUZQUURZ ET AL. (2020)

Meta-análisis de 22 ECA (n=2.159) en cirugía oncológica. La inmunonutrición oral (pre y postoperatoria) reduce complicaciones infecciosas totales y de herida quirúrgica. No hubo diferencias en mortalidad. Apoya el uso de inmunonutrición como estrategia complementaria en cirugía.

CUETO URBINA ET AL. (2023)

Revisión sistemática que incluye 5 estudios observacionales. El meta-análisis muestra que la periodontitis incrementa significativamente el riesgo de complicaciones postoperatorias (OR = 4,76). Refuerza la necesidad de control periodontal prequirúrgico.

DANILKOWICZ ET AL. (2021)

Revisión sistemática de 44 casos de infección protésica tras procedimientos dentales. La mayoría de infecciones fueron por bacterias resistentes a amoxicilina. No se puede establecer una profilaxis antibiótica óptima, y los datos actuales son insuficientes para emitir recomendaciones claras.

DE JONG ET AL. (2025)

Revisión sistemática que identifica ítems autoinformados con alto valor predictivo para detectar deterioro de salud oral en mayores. Variables como sequedad bucal, satisfacción con la salud oral y dificultad para comer se asocian con necesidad de derivación odontológica.

EAST ET AL. (2023)

Revisión sobre higiene oral y riesgo de infección de malla en cirugía de hernia. No se halló evidencia directa, pero sí indirecta a partir de otras cirugías con implantes. Concluye que debe promoverse una buena salud oral en pacientes con implantes, aunque se necesitan más estudios específicos.

FUNAHARA ET AL. (2024)

Estudio observacional en cirugía oncológica o cardíaca. Muestra que el recuento de bacterias salivales aumenta tras la cirugía por pérdida de autolimpieza oral. Comer pronto y mantener la humedad oral reduce este aumento. El control de placa no se asoció directamente al recuento bacteriano.

HONDA ET AL. (2024)

Observacional en 105 lactantes con cirugía cardíaca. El recuento bacteriano salival disminuyó tras la cirugía, en especial en menores sin erupción dental, probablemente por antibióticos sistémicos. Proponen seguir estudiando la flora bucal y el rol del cuidado oral en neonatos.

ISHIKAWA ET AL. (2021)

Estudio retrospectivo en 585 pacientes con cirugía por cáncer de pulmón. La intervención oral perioperatoria redujo la estancia postoperatoria (p=0.027) y mostró una tendencia a reducir infecciones respiratorias (p=0.059). Subraya su utilidad clínica potencial en neumonía postoperatoria.

ISOMURA ET AL. (2023)

Cepillarse los dientes por la noche se asoció con menor riesgo de enfermedad cardiovascular. Los pacientes que no se cepillaban por la noche mostraron peor pronóstico, especialmente si eran fumadores. Subraya la importancia del cepillado nocturno como medida preventiva cardiovascular.

KAI ET AL. (2021)

En el cribado oral preoperatorio, la movilidad dental fue el factor más determinante para indicar necesidad de manejo oral. La mala higiene oral fue el hallazgo más frecuente. Se propone sistematizar la detección temprana de riesgos orales antes de cirugía.

KARAKAYA ET AL. (2022)

En niños críticos ventilados, el colutorio con clorhexidina al 0,12% no redujo la incidencia de neumonía asociada a ventilación. La duración de la ventilación fue el único factor independiente asociado a mayor riesgo. Se cuestiona la eficacia de CHX en población pediátrica.

KLOMPAS ET AL. (2022)

Guía oficial multidisciplinar con recomendaciones prácticas actualizadas para prevenir neumonía hospitalaria (VAP, VAE y NV-HAP). Destaca higiene oral, descolonización, elevación del cabecero, desescalado de sedación y medidas organizativas como claves preventivas.

KUBO ET AL. (2024)

Revisión y metaanálisis que confirma que la higiene oral perioperatoria reduce significativamente la incidencia de neumonía postoperatoria, infecciones de herida y estancia hospitalaria en pacientes oncológicos. Subraya el papel activo del personal sanitario no odontológico.

KURASAWA ET AL. (2022)

En 9.441 pacientes oncológicos, la gestión oral perioperatoria redujo la neumonía postoperatoria y la mortalidad en cánceres de pulmón y páncreas. No fue efectiva en otras localizaciones. Refuerza el valor del POM en ciertos tumores específicos.

KURASAWA ET AL. (2020)

Estudio multicéntrico en más de 25.000 pacientes quirúrgicos oncológicos. El POM redujo significativamente la incidencia de neumonía hospitalaria. Odds ratio post-POM: 0,44. Se recomienda como intervención rutinaria en cirugía con ingreso.

LIANG ET AL. (2021)

Metaanálisis en cirugía no cardíaca: el uso de clorhexidina perioperatoria (liderado por enfermería) reduce la neumonía postoperatoria. Puede ser alternativa eficaz y más económica frente a la intervención odontológica profesional.

MOTOI ET AL. (2023)

En cirugía valvular cardíaca, el POM redujo la bacteriemia postoperatoria y la mortalidad. Odds ratio de infección 0,316. Se propone el POM como herramienta preventiva útil en cirugía cardíaca con alto riesgo de complicaciones infecciosas.

NAKAMATSU ET AL. (2025)

Estudio comparativo en cirugía oncológica: el cepillado aumentó transitoriamente las bacterias salivales, mientras que el enjuague con povidona yodada las redujo. El ayuno y la higiene oral deficiente se asociaron con mayor carga bacteriana postoperatoria.

NOBUHARA ET AL. (2022, SURGERY)

En cirugía colorrectal, la atención oral perioperatoria redujo significativamente la infección de sitio quirúrgico (SSI): 8,4% vs. 15,7%. El no realizar cuidado oral fue un factor de riesgo independiente (OR = 2,10). Refuerza la utilidad del cuidado dental como estrategia preventiva en cirugía digestiva.

NOBUHARA ET AL. (2022, SUPPORT CARE CANCER)

En cirugía de cáncer pancreático, el grupo sin atención oral presentó un 39,3% de SSI frente a 12,0% en el grupo tratado. El cuidado oral fue factor protector independiente (OR = 6,09). Refuerza su valor incluso en procedimientos con alta morbilidad como la pancreatoduodenectomía.

RUTHERFORD ET AL. (2022, COCHRANE)

No hay evidencia clara sobre si la profilaxis antibiótica dental previene la endocarditis. Solo un estudio caso-control incluido, sin resultados concluyentes. Se recomienda discutir caso a caso con el paciente. Muy baja certeza en los datos actuales.

SAKAI ET AL. (2024, JPN DENT SCI REV)

Revisión exploratoria que confirma que la gestión oral perioperatoria ayuda a prevenir neumonía, infecciones quirúrgicas y otras complicaciones. Recomienda seguir investigando los mecanismos de acción y los protocolos más eficientes.

SAKAMOTO ET AL. (2022, INT J ENVIRON RES PUBLIC HEALTH)

El recuento bacteriano salival aumenta significativamente tras la cirugía, especialmente en pacientes ancianos, con xerostomía o en ayuno. Se destaca la necesidad de higiene oral preoperatoria adecuada en grupos de riesgo para prevenir neumonía o SSI.

SEKIYA ET AL. (2021A, INT J ENVIRON RES PUBLIC HEALTH)

Sistema "Oral Triage" implementado por higienistas permitió reducir a la mitad la incidencia de neumonía postoperatoria (aOR = 0,50) en cirugía oncológica. Modelo sostenible, útil en entornos con escasez de profesionales.

SEKIYA ET AL. (2021B, INT J ENVIRON RES PUBLIC HEALTH)

Análisis coste-efectividad del manejo oral en 25.000 pacientes oncológicos: reducción de neumonía, estancia hospitalaria y muertes. Cada caso de neumonía evitado costó 111.927 yenes, pero generó un ahorro neto de más de 250 millones. Apoya su inclusión como intervención financiada.

SHUAI ET AL. (2024, J ORAL SCI)

El tratamiento de higiene oral antes de intubación redujo la colonización bacteriana en orofaringe, tráquea y punta del tubo endotraqueal. Demuestra valor preventivo del cuidado bucal en anestesia general ortopédica.

SIMON ET AL. (2024, J ARTHROPLASTY)

En pacientes con artroplastia de cadera o rodilla, el uso rutinario de antibiótico antes de procedimientos dentales no redujo la infección protésica. Las infecciones detectadas fueron todas en pacientes que sí tomaron antibiótico. Se cuestiona su utilidad profiláctica.

SOUTOME ET AL. (2020, SUPPORT CARE CANCER)

En cirugía de esófago, la falta de atención oral se asoció a mayor riesgo de neumonía (factor independiente junto a edad y disfunción renal). El efecto preventivo fue mayor en hospitales con menor tasa base de neumonía (<20%).

STEINLE (2023)

Las lesiones mucosas orales y el biofilm blando se asociaron con mayor estancia en UCI, pero no con la mortalidad. La higiene oral en pacientes críticos puede ayudar a reducir estancias prolongadas.

SUENAGA (2023)

La presencia de ≥4 caries activas y placa visible en lengua fueron predictores independientes de complicaciones infecciosas postoperatorias. Se recomienda evaluación y cuidado dental previo a cirugía mayor.

TERANO (2024)

Pacientes con <20 dientes presentaron significativamente más complicaciones respiratorias tras cirugía valvular. Mantener una dentición funcional puede prevenir eventos respiratorios postoperatorios.

THORESEN (2022)

No se encontró correlación clara entre infecciones orales activas y endocarditis causada por estreptococos orales. Se cuestiona el valor predictivo del cribado odontológico en estos pacientes.

WU (2024)

La valoración preanestésica oral fue percibida como de menor calidad que otras visitas odontológicas, pero se valoró su utilidad. Se recomienda mejorar la comunicación interdisciplinar y centrarse en el paciente.

YAMAMURA (2025)

Los pacientes con visitas dentales regulares muestran mejor higiene oral y menor riesgo de complicaciones perioperatorias. Se recomienda fomentar los controles dentales rutinarios antes de cirugía.

YAMANAKA-KOHNO (2022)

Los pacientes candidatos a cirugía esofágica tienen peor salud oral que otros grupos quirúrgicos (menos dientes, más periodontitis). Deben recibir prioridad máxima para manejo oral perioperatorio.

YAMAGUCHI (2024)

En cirugía pancreática compleja (pancreatoduodenectomía), el manejo oral profesional redujo las infecciones quirúrgicas (8% vs 19,6%). El no realizarlo se asoció con un riesgo 2,8 veces mayor (OR = 2,84).

YOSHITOMI (2024)

La pregunta "¿tiene alguna preocupación sobre su boca para la cirugía?" tiene alta especificidad (0,898) pero baja sensibilidad (0,263) para detectar problemas reales. No sustituye una revisión dental profesional.

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04

Preguntas y Respuestas

04

Preguntas y respuestas

1. ¿POR QUÉ DEBERÍA IMPORTAR LA SALUD DE LA BOCA ANTES DE UNA OPERACIÓN?

Porque una infección crónica como la periodontitis puede aumentar el riesgo de complicaciones quirúrgicas. Aunque esté localizada en la boca, genera inflamación sistémica y puede facilitar infecciones en otras zonas tras la cirugía.

2. ¿QUÉ TIPO DE COMPLICACIONES SE HAN ASOCIADO A LA PERIODONTITIS EN PACIENTES OPERADOS?

Desde infecciones en la herida hasta más días de ingreso. También se ha visto relación con fiebre postoperatoria y necesidad de antibióticos adicionales, incluso en cirugías alejadas de la boca.

3. ¿LA SALUD ORAL INFLUYE EN EL MANEJO ANESTÉSICO?

Sí. Un foco infeccioso oral puede alterar la respuesta inmunitaria del paciente o dificultar la recuperación. También puede generar problemas con la vía aérea si hay abscesos o movilidad dental

4. ¿Y SI EL PACIENTE NO TIENE SÍNTOMAS? ¿PUEDE HABER RIESGO IGUALMENTE?

Sí, porque muchas veces la periodontitis no da dolor. El paciente puede tener encías inflamadas y bolsas profundas sin saberlo, pero su cuerpo ya está reaccionando con una respuesta inflamatoria de fondo.

5. ¿TIENE SENTIDO INCLUIR LA BOCA EN LA EVALUACIÓN PREANESTÉSICA?

Totalmente. Aunque el anestesista no va a tratar, sí puede detectar signos de alerta como movilidad dental, prótesis inestables o halitosis. Y eso puede justificar derivar al dentista antes de operar.

6. ¿VISITAR AL DENTISTA ANTES DE UNA CIRUGÍA REDUCE COMPLICACIONES?

Sí. La evidencia muestra que quienes acudieron al dentista recientemente tuvieron menos infecciones, mejor higiene oral y menor inflamación. Es una medida sencilla con gran impacto clínico.

7. ¿QUÉ DIFERENCIA HAY ENTRE IR AL DENTISTA HACE SEIS MESES O HACE MÁS DE UN AÑO?

La diferencia está en la estabilidad de la salud oral. Pasado un año sin revisión, hay más riesgo de haber desarrollado sarro, inflamación o incluso infecciones activas sin síntomas.

8. ¿QUÉ PAPEL TIENE LA HIGIENE DIARIA EN TODO ESTO?

Fundamental. Cepillarse dos veces al día durante dos minutos reduce la carga bacteriana, mejora la respuesta inmunitaria y puede evitar muchas de las complicaciones postoperatorias asociadas al biofilm.

9. ¿PUEDE UNA ENCÍA INFLAMADA ALTERAR EL CURSO DE UNA ANESTESIA GENERAL?

En ciertos casos, sí. La inflamación oral puede provocar fiebre sin foco o complicar la recuperación. Además, si hay infección activa, se puede multiplicar el riesgo de bacteriemia durante la intubación.

10. ¿TIENE SENTIDO POSPONER UNA CIRUGÍA SI HAY INFECCIÓN ORAL ACTIVA?

En algunos casos sí. Si el riesgo quirúrgico es alto y se detecta periodontitis severa o abscesos, es razonable tratar primero la infección. Igual que se trataría una infección urinaria antes de operar.

11. ¿PUEDE UNA ENFERMEDAD ORAL CRÓNICA AFECTAR AL SISTEMA INMUNITARIO?

Sí. La periodontitis eleva marcadores inflamatorios como IL-6, TNF-ʒѡ o PCR, que alteran la homeostasis del sistema inmune. Esto puede dificultar la cicatrización y aumentar la respuesta al estrés quirúrgico.

12. ¿SE HAN DETECTADO BACTERIAS ORALES EN OTRAS PARTES DEL CUERPO TRAS CIRUGÍA?

Sí. Estudios han encontrado bacterias como P. gingivalis o Fusobacterium en heridas quirúrgicas, implantes y abscesos lejos de la boca. La vía hematógena es una posibilidad real.

13. ¿QUÉ IMPACTO TIENE ESTO EN PACIENTES VULNERABLES, COMO LOS ONCOLÓGICOS O INMUNODEPRIMIDOS?

Mucho mayor. En estos pacientes, una infección oral puede convertirse en una sepsis o retrasar tratamientos vitales. Por eso, su boca debe estar en condiciones óptimas antes de cualquier procedimiento.

14. ¿HAY EVIDENCIA DE QUE LA SALUD ORAL AFECTA LA ESTANCIA HOSPITALARIA?

Sí. Según estudios recientes, los pacientes con mejor salud oral tuvieron menos días de ingreso tras cirugía mayor. Controlar la periodontitis puede ser parte de la estrategia para optimizar recursos.

15. ¿RECOMENDARÍAS HACER CRIBADO PERIODONTAL EN LAS CONSULTAS PREOPERATORIAS?

Sí, al menos una inspección básica: ver si hay sangrado, inflamación o movilidad. Y si hay dudas, derivar. No se trata de hacer un diagnóstico dental, sino de prevenir riesgos.

16. ¿QUÉ PUEDEN HACER LOS ANESTESISTAS QUE NO TIENEN FORMACIÓN DENTAL?

Preguntar al paciente si sangra al cepillarse, si nota dientes flojos o mal aliento. Mirar la boca antes de sedar. Y si algo no les cuadra, pedir una revisión dental antes de la intervención.

17. ¿QUÉ MENSAJE SENCILLO PUEDE TRANSMITIR UN MÉDICO A UN PACIENTE ANTES DE OPERARSE?

"Cuida tu boca. Cepíllate dos veces al día dos minutos. Si no has ido al dentista en el último año, mejor hazlo ahora." Es simple, barato y puede evitar problemas grandes.

18. ¿CÓMO PODEMOS INTEGRAR ESTO SIN SATURAR LAS CONSULTAS PREQUIRÚRGICAS?

Con un checklist rápido en la historia clínica: "¿Revisión dental en los últimos 12 meses? ¿Signos de inflamación oral?". Con eso ya se pueden detectar muchos pacientes de riesgo.

19. ¿SERÍA ÚTIL INCORPORAR ESTO EN PROTOCOLOS DE CALIDAD O SEGURIDAD QUIRÚRGICA?

Absolutamente. Igual que se hace cribado de anemia o función renal, puede añadirse una valoración bucodental básica, especialmente en cirugía mayor o pacientes frágiles.

20. ¿CUÁL SERÍA TU MENSAJE FINAL PARA UN EQUIPO DE QUIRÓFANO?

No subestiméis la boca. Una encía inflamada puede parecer menor, pero en quirófano todo cuenta. Invertir un minuto en mirarla puede ahorrar días de complicaciones.

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TORRES DENTAL INDEPENDENCIA

976 23 43 33
625 39 86 40

P°. de la Independencia, 5
50001 Entresuelo, Zaragoza

TORRES DENTAL SAN JOSÉ

876 28 79 47
605 33 28 49

Avenida de San José, 145,
50007 Zaragoza

TORRES DENTAL ROMA

876 53 70 23
686 17 29 36

Plaza de Roma, 8
50010 Zaragoza

torresclinicadental.com