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The fundamental role of the dentist in the prevention of endocarditis: Knowledge of the bacteria involved

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María Luisa Hermosilla de Olmedo
Mg., Faculty of Dentistry, Universidad Privada del Este. City Pdte. Frank. Paraguay
ORCID: https://orcid.org/0000-0003-4910-6562
E-mail: maluolme31@gmail.com

Jessica Celinne Arami Romero Correa
Univ., Faculty of Dentistry, Universidad Privada del Este. City Pdte. Frank. Paraguay
E-mail: jessarami.romero@gmail.com

Sofia Bethlehem Adaro Ferreira
Univ., Faculty of Dentistry, Universidad Privada del Este. City Pdte. Frank. Paraguay
E-mail: adarosofi@gmail.com

Sany Lorena Martinez Gomez
Univ., Faculty of Dentistry, Universidad Privada del Este. City Pdte. Frank. Paraguay
E-mail: Ofwaj121@gmail.com

Melanie Luján Alderete Rodas
Univ., Faculty of Dentistry, Universidad Privada del Este. City Pdte. Frank. Paraguay
E-mail: lujanridas@gmail.com

Liza Graciela Brítez Lezcano
Dr., Faculty of Dentistry, Universidad Privada del Este. City Pdte. Frank. Paraguay
ORCID: https://orcid.org/0009-0008-3875-6301
E-mail: lizabritezlezcano@gmail.com

ABSTRACT
The prevention of cardiovascular diseases, such as infectious endocarditis, is an aspect in both medical and dental care. It is a serious condition that involves the inflammation of the inner lining of the heart, usually caused by the invasion of bacteria or other pathogens. To concretize the problem statement, the objective was established, which reads, Determine the essential role of the dentist in the prevention of endocarditis, emphasizing the importance of their knowledge about the bacteria involved in infectious heart disease, with the purpose of improving dental care. The research approach responded to the qualitative, because it worked with the characteristics of phenomenon. The design was non-experimental cross-sectional. It responded to exploratory-descriptive scopes, observational level. The samples were composed of two doctors, six dentists and a biochemist, being the sampling technique non-probabilistic, with the discretionary choice technique. The data collection instrument was the interview. The result yielded interesting data, for having total similarity between all responses in professionals, from their different areas of knowledge. In conclusion, the prevention of endocarditis is a fundamental aspect in dental practice, and knowledge of the bacteria involved plays a crucial role. Through this review, we have been able to highlight the importance of the dentist in preventing endocarditis, focusing on their knowledge of bacteria involved in this potentially deadly heart infection and the need for multidisciplinary work among them.

Keywords: Infected, Health, Endocarditis, Onia, Odontology.

1 INTRODUCTION

The prevention of cardiovascular diseases, such as infective endocarditis, is a critical aspect of medical and dental care. Infective endocarditis is a serious condition involving inflammation of the inner lining of the heart, usually caused by invasion by bacteria or other pathogens. While this disease

can affect anyone, individuals with pre-existing heart conditions or artificial heart valves are at especially high risk. (1)

In this context, the dentist plays a crucial role in the prevention of infective endocarditis, as oral bacteria can be a potential source of infection affecting the heart. Bacteria that reside in the oral mucosa can enter the bloodstream during invasive dental procedures, such as tooth extraction or deep cleaning. Therefore, it is essential for dental professionals to have a thorough understanding of the bacteria involved in this process, their specific characteristics, and their ability to cause heart infections.

This research focuses on exploring the fundamental role of the dentist in the prevention of infective endocarditis through knowledge of the oral bacteria involved. By understanding the relationship between oral health and heart disease, dentists can play a proactive role in identifying and managing risk factors that contribute to infective endocarditis. In addition, this knowledge allows them to provide safer, more personalized dental care to patients with pre-existing heart disease, thereby minimizing the likelihood of serious heart complications.

In the following sections of this study, the oral microbiota, its relationship with infective endocarditis, and dental professionals' awareness of this topic will be explored in depth. This research aims not only to shed light on the importance of oral bacteria knowledge in the prevention of endocarditis, but also to promote more comprehensive and collaborative medical and dental care for the benefit of patients' cardiovascular health. Comments (2)

The mouth is a complex ecosystem, harboring a diversity of microorganisms, including oral bacteria. While these bacteria are a normal part of the oral flora, their imbalance can have detrimental consequences for oral health and, surprisingly, overall health as well. This essay explores the importance of oral bacteria in the formation of dental plaque, the oral diseases they can cause, and how they can enter the bloodstream, causing adverse effects on the body. (3)

Bacteria in the mouth that end up in the bloodstream may be able to cause blood thrombosis and lead to endocarditis. (4). Oral bacteria are a normal part of the bacterial flora in the mouth. However, when these bacteria build up and form dental plaque, they can cause diseases such as tooth decay, gingivitis, and periodontitis.

In some cases, oral bacteria can enter the bloodstream through bleeding gums or canker sores. Once in the bloodstream, these bacteria can travel to other parts of the body and cause infections. (5). Based on the above, the following problem statement is established, which indicates: How can dentists play an essential role in the prevention of endocarditis, recognizing the importance of their knowledge about the bacteria involved in infectious heart disease? What is the role of the dentist in the prevention of endocarditis?, What is the current level of knowledge of dentists about the bacteria associated with endocarditis?, What are the bacteria involved in infectious heart disease and what is their relationship

to dental procedures? and What are the long-term benefits of interdisciplinary collaboration between dentists and cardiologists in the prevention of endocarditis?

In order to follow up on the problem, the general objective was proposed, which reads: To determine the essential role of the dentist in the prevention of endocarditis, emphasizing the importance of his knowledge about the bacteria involved in infectious heart disease, in order to improve dental care.

2 METHODOLOGY

2.1 RESEARCH FOCUS

In this research, a qualitative approach was chosen to carry out a comprehensive characterization of the bacteria found in the oral mucosa. This involved identifying its specific characteristics and exploring its relationship to infective endocarditis. In addition, the level of knowledge that dental professionals have on this topic was reviewed. By considering these suggestions, we strengthened research and contributed to a more complete understanding of the relationship between the oral microbiota and infective endocarditis, as well as to the improvement of medical and dental care in this context.

2.2 RESEARCH DESIGN

The research responded to a non-experimental design, because it is a type of research that does not involve the manipulation of variables. In this type of research, the researcher observes phenomena as they occur in their natural context. Non-experimental designs are used for a variety of purposes, including: Describe the characteristics of a population or phenomenon. Identify relationships between variables. This study adopted a cross-sectional research design, characterized by data collection that was carried out simultaneously or in the same period in which the review of the phenomenon studied was carried out. The cross-sectional type allowed us to capture a snapshot of the situation at a specific time, which was critical to obtain an accurate and up-to-date view of the phenomenon of interest.

The choice of this design was based on the need to analyze both the causes of infective endocarditis and the perceptions and knowledge of dental professionals at a point in time, thus allowing a real-time assessment of the relationship between the disease and dental procedures. By collecting data in this context, we were able to make stronger connections between the factors studied and gain a more detailed understanding of the current dynamics related to infectious heart disease in the context of dental practice. This time-matched approach translates into accurate and relevant research that contributes significantly to the field of study.

2.3 SCOPE OF RESEARCH

The present study adopts an exploratory and descriptive scope with the purpose of presenting the potential causes of infective endocarditis, in addition to analyzing in detail the perceptions and knowledge held by dental professionals in relation to the interaction between this condition and dental procedures. These outreaches not only seek to understand the roots and underlying mechanisms of the disease, but also to shed light on the information and beliefs of dental experts who are on the front lines of prevention.

It is essential to highlight that the research design is characterized by its intrinsic flexibility, which allows it to adapt in an agile and effective way to continuous scientific advances and new emerging knowledge in the field of infective endocarditis. If, for example, a new bacterial species is discovered that plays a relevant role in this disease, our methodology can be quickly modified to include this new information. This adaptive approach ensures that our study remains up-to-date and aligned with the most recent developments, contributing to an ever-evolving understanding of this important issue.

To fulfill the purpose of this research, rigorous scientific methods and techniques were employed to carry out the precise identification of bacterial species that play a crucial role in the pathogenesis of infective endocarditis. This process included the detailed characterization of the biological and genetic characteristics of these bacteria, which provided a clearer view of the attributes that confer their pathogenic capacity and affinity for cardiac tissue.

In addition, the study focused on comprehensively investigating factors that may increase the risk of infection by these bacteria, particularly in relation to dental procedures. This encompassed consideration of clinical, behavioral, and environmental factors that may influence the transmission and proliferation of bacteria in the context of the oral cavity and circulatory system. By exploring these factors, we were able to gain a deeper, more holistic understanding of the underlying mechanisms of infectious heart disease and how they relate to dental practices. This expanded knowledge not only contributes to the comprehensive understanding of the disease, but also provides valuable information for the development of more effective prevention and treatment strategies in this critical area of health in relation to Dentistry.

2.4 POPULATION AND SAMPLE

2 DOCTOR**.** 6 DENTIST. 1 BIOCHEMIST

3 SAMPLING TECHNIQUE

3.1 PROBABILISTIC METHOD

For the sampling elements of this research, it was decided to use a non-probabilistic sampling technique, specifically of a discretionary type. This approach allowed us to gather valuable information without exposing the identity of the participants involved. The discretionary method gives us the flexibility to carefully select participants according to specific criteria relevant to the study.

3.2 DATA COLLECTION TECHNIQUE

The choice of data collection technique in research is a crucial aspect that influences the quality and validity of the results. In this study, we chose to use the interview technique as the main instrument for data collection. Below are the rationale for this choice. Depth of information: The interview allowed us to obtain detailed and in-depth information about the research topic.

Unlike other methods, such as questionnaires, which tend to provide shorter, more standardized responses, interviews allow participants to express their opinions, experiences, and knowledge more fully. This is especially relevant in a study that seeks to understand dental professionals' knowledge of the relationship between oral bacteria and infective endocarditis, as detailed answers can reveal important nuances.

3.3 ANALYSIS OF COLLECTED DATA

A descriptive analysis was carried out in order to describe and understand in detail the data collected in the context of qualitative research. This analysis approach is oriented towards exploring the intrinsic characteristics of the data and interpreting its current state. In addition to its descriptive function, the analysis was used to anticipate possible trends or patterns of behavior in the data, considering the qualitative nature of the research. This process of analysis allowed for a deeper and enriching understanding of the information collected.

4 RESULTS

The results of a research that used interviews as a method of data collection needed to include an analysis of emerging points and patterns, taking into account the participants, the interpretation of the findings and their implications . It was constructed according to semantics, which are presented below.

4.1 RESULTS OF THE INTERVIEW WITH DENTAL PROFESSIONALS

4.1.1 What are the most common bacteria involved in infective endocarditis and how can they enter the bloodstream through the oral cavity?

Dentists one, two, three and five report that endocarditis is an infection of the inner lining of the heart (the endocardium), which usually affects the heart valves. The most common bacteria involved in this disease are generally; Staphylococcus aureus, Streptococcus viridans, some involved with periodontitis: Porphyromonas gingivalis and actinomycetemcomitans. As for the entry of bacteria into the bloodstream through the oral cavity, this usually occurs during invasive dental procedures or oral surgeries. When tooth extractions or dental cleanings are performed, small amounts of bacteria from the mouth may enter the bloodstream through small wounds or lesions on the gums. However, dentist two believes that professionals should be aware of the possibility of bacteremia secondary to dental procedures and periodontal disease, and that appropriate preventive measures should be taken to reduce the risk of infective endocarditis in patients with pre-existing heart conditions.

Dentists four and five have another differentiation which is the absence of regular brushing or flossing can cause bacteria to grow into the bloodstream through a cut of the gums.

4.1.2 How to assess the risk of infective endocarditis in patients who come to your dental office? What dental risk factors are relevant?

Dentists one and four, they suggest. To assess the risk of infective endocarditis in dental patients, including the patient's medical history. The severity of heart disease, the type of dental procedures planned, oral health, the presence of periodontal disease, age, history of endocarditis, the condition of prosthetic valves, and immune status. Dentist two has another differentiation which is for procedures that can cause bleeding gums, such as deep teeth cleaning, tooth extractions, implant insertion and treatment of these conditions. Acute dental infections, such as abscesses or untreated infections that can increase the risk of bacteremia. There is another differentiation that is shared with dentist two, according to dentists two, third and fifth; antibiotic prophylaxis should be performed in patients with heart problems and those who are at risk independent of treatment should be consulted with their general clinician or specialist.

4.1.3 Can you explain what is the fundamental role of the dentist in the prevention of infective endocarditis and why it is relevant in dental practice?

The first dentist differentiates that the fundamental role of the dentist in the prevention of infective endocarditis involves identifying patients at risk, recommending antibiotic prophylaxis when necessary, education on oral hygiene, safe management of dental procedures, and collaboration with other health professionals. This is essential in dental practice to prevent serious complications in patients

with heart disease. The second dentist has a certain relationship with the first dentist, but with the difference that she complements with the prevention of bacteremia, education and guidance, implementation of prophylactic protocols. The third and fifth dentists related their differentiations to trying to avoid cross-infection and persistence in other treatments. The fourth dentist differs with the recommendation of good brushing, flossing, mouthwashes and thus having a good control of bacterial plaque that reduces the volume of microorganisms that could enter the bloodstream during dental treatment.

4.1.4 What are the strategies you implement in your practice to maintain a safe dental environment and prevent cross-infection, especially in high-risk patients?

Strategies to maintain a safe dental environment and prevent cross-infection in high-risk patients include sterilization, use of personal protective equipment, hand washing, risk diagnosis, administration of antibiotic prophylaxis when necessary, isolation techniques, use of disposable instruments, Thorough cleaning and proper appointment scheduling. Although the second dentist believes that appointments should be scheduled at specific times to minimize exposure to other patients. The third and fifth dentists say that the use of PPE (use of protective clothing) should be implemented more, the fourth dentist believes that the use of oral antiseptics (extractions, periodontal surgeries) should be implemented.

4.1.5 What is your opinion on the importance of continuous training and updating in the prevention of endocarditis for dentists? How do you keep abreast of the latest research and recommendations in this field?

The first dentist believes that continuous training and updating are essential for dentists when it comes to endocarditis prevention and another aspect of medical care. Dentistry, like medicine, is an ever-evolving field with advances in research, technology, and care protocols. The second dentist believes that students should participate in continuing education courses and programs, get involved in conferences and symposiums, read specialized journals and scientific publications, participate in associations and research groups, and use online resources with the accompaniment of medical education platforms. The third dentist believes that there has to be a vanguard with respect to up-to-date medications and treatments. The fourth dentist believes that professionals should go to seminars and training courses. The last dentist is related to the third dentist, but she also says that you need to be proactive about oral health, you can protect yourself from developing a connection between oral health and heart disease.

4.2 OUTCOME OF THE INTERVIEW WITH MEDICAL PROFESSIONALS

4.2.1 To question 1, the answer given by medical professionals

Endocarditis associated with dental procedures, also known as bacterial endocarditis, is a potentially serious infection of the inner lining of the heart or heart valves. The most common bacteria involved in its development are usually of oral origin. Some of the most common oral pathogens that can cause endocarditis associated with dental procedures include: Streptococcus viridans: This group of composite bacteria is found in the oral cavity and is responsible for a large proportion of cases of infective endocarditis.

Importantly, endocarditis associated with dental procedures is a rare but potentially serious complication, and antibiotic prophylaxis measures are recommended in certain cases to reduce risk in people with specific risk factors. The choice of antibiotic and the need for prophylaxis should be evaluated by a healthcare professional, usually a cardiologist or dentist, depending on the patient's individual clinical situation.

4.2.2 While the answer to question 2 was

The dentist must have a solid understanding of infective endocarditis and its relationship to dental procedures, as this is crucial to providing safe dental care to patients and reducing the risk of complications. You should be knowledgeable about risk factors by familiarizing yourself with the risk factors that increase a patient's likelihood of developing endocarditis associated with dental procedures. This includes conditions such as heart valve disease, congenital heart disease, prosthetic valves, and a history of previous endocarditis. You should be aware of the most common bacteria that can cause endocarditis associated with dental procedures, such as viridans group streptococci. You need to understand when antibiotic prophylaxis is recommended before certain dental procedures in at-risk patients. This involves being aware of current medical and dental society guidelines regarding the administration of antibiotics prior to invasive dental procedures. Must be willing to communicate with other health care professionals, such as cardiologists, to coordinate care for patients with cardiac risk factors. This is essential to ensure that appropriate decisions are made regarding antibiotic prophylaxis and dental care.

4.2.3 In relation to question three, the answer indicates that

Dentists must follow strict infection controls to prevent infection by bacteria involved in endocarditis, especially in patients with cardiac risk factors. Some specific precautions to take include: Taking a thorough medical history to identify patients at risk for endocarditis, such as those with heart valve disease, prosthetic valves, or other risk factors. Use protective barriers, such as gloves, goggles, and gowns, to prevent exposure to the patient's blood and saliva. Make sure all equipment, instruments,

and surfaces are properly disinfected and sterilized before each procedure. Implement to prevent cross-infection, such as proper cleaning and disinfection of treatment areas and sterilization of instruments between patients. And administering prophylactic antibiotics according to current guidelines to at-risk patients prior to certain invasive dental procedures, in accordance with the recommendations of relevant medical and dental societies.

4.2.4 To the fourth question, the following answer was obtained

Collaboration between doctors and dentists is essential to ensure the prevention of endocarditis in at-risk patients, especially those with underlying heart conditions. Doctors and dentists must establish effective communication and fluid coordination. Doctors should tell dentists about patients who have risk factors for endocarditis, such as heart valve disease, valve replacements, or a history of endocarditis. Dentists should obtain a complete medical history of patients, including any pre-existing heart conditions. This ensures that proper precautions are taken before and after dental procedures. In cases where it is required, antibiotic prophylaxis should be administered according to current guidelines. Both doctors and dentists should be aware of current recommendations and apply them consistently. Both doctors and dentists have a responsibility to educate patients about the importance of reporting any pre-existing heart conditions and following recommendations to prevent endocarditis. After a dental procedure, dentists should report any suspicious complications or infections to the patient's doctor. This ensures continuous and appropriate care.

4.2.5 And to the last question they say that

For patients with pre-existing heart disease, it's important to pay attention to both their oral health and dental visits. And it's critical to tell your doctor about any pre-existing heart disease and follow the recommendations and treatments they've prescribed. Also, be sure to communicate your medical history and current medications to your dentist.

4.3 RESULTS OF THE INTERVIEW WITH A BIOCHEMIST

4.3.1 What are the most common bacteria involved in the development of endocarditis associated with dental procedures?

Streptococci of the "Viridans Group":

a. Streptococcus mutans
b. Streptococcus Sanguinis
c. Streptococcus mitis
d. Streptococcus oralis
e. Streptococcus gordonii

4.3.2 What knowledge should a dentist have about endocarditis?

Etiology and Pathogenesis: Understand the causes and mechanisms by which endocarditis develops. This includes knowledge of the common bacteria that can cause endocarditis, as well as the conditions that predispose a patient to developing this infection. Risk Factors: Identify patients who are at higher risk of developing endocarditis, such as those with pre-existing heart disease, artificial heart valves or prostheses, a history of previous endocarditis, among others. Antibiotic prophylaxis: Understand when prophylactic antibiotics need to be given before certain dental procedures in high-risk patients to prevent endocarditis.

High-Risk Procedures: To know which dental procedures have a greater potential to cause bacteremia (the entry of bacteria into the bloodstream), and therefore present a higher risk of developing endocarditis in vulnerable patients. Recommended Antibiotics: Be aware of current guidelines and recommendations on which antibiotics to use for prophylaxis in specific cases. Patient Medical History: Obtain a detailed medical history of the patient to determine if there are any risk factors for endocarditis. Communication with the Medical Team: Work closely with other healthcare professionals, especially cardiologists and treating physicians of at-risk patients, to coordinate appropriate care and prophylaxis.

Patient Education: Be able to educate the patient on the importance of maintaining good oral health and to inform their dentist of any pre-existing heart conditions. Surveillance and Symptom Recognition: Be alert to signs and symptoms of endocarditis in high-risk patients, such as fever, fatigue, joint pain, among others. Post-Procedure Follow-Up: Monitor high-risk patients after dental procedures to identify any signs of possible infection.

4.3.3 What specific precautions should dentists take to prevent infection with bacteria involved in endocarditis?

Detailed Medical History: Obtain a complete medical history of the patient, especially as it pertains to pre-existing heart conditions and a history of endocarditis. This will help determine if the patient is at risk and if antibiotic prophylaxis is required. Know the Indications for Prophylaxis: Become familiar with the specific indications for the administration of prophylactic antibiotics before dental procedures in high-risk patients. These indications may vary depending on clinical guidelines and the patient's health status. Proper Antibiotic Selection: If prophylaxis is required, choose the right antibiotic based on current recommendations. Common antibiotics for endocarditis prophylaxis include amoxicillin, clindamycin, and cephalexin, among others.

Appropriate Antibiotic Administration: Ensure that the prophylactic antibiotic is given at the right dose and time. This is usually done about an hour before the procedure. Good Aseptic Technique:

Maintain rigorous aseptic technique during dental procedures to reduce the risk of infection in general. Minimize Trauma and Bleeding: Minimize trauma during dental procedures to reduce the chance of bacteremia. This includes careful techniques when performing extractions, manipulating gum tissue, and performing other invasive procedures. Use of Absolute Isolation: Employ absolute isolation techniques, such as the use of rubber dam (or "dental dam"), to minimize bacterial contamination of the oral cavity.

Use of Antimicrobial Rinses: Consider the use of preoperative antimicrobial rinses to reduce the bacterial load in the oral cavity prior to the procedure. Post-Procedure Monitoring and Follow-Up: Maintain close surveillance of the patient after the procedure to identify any signs of infection, especially in high-risk patients. Patient Education: Educate the patient on the importance of maintaining good oral health and informing the dentist of any changes in their medical history, especially as it pertains to heart conditions.

4.3.4 How do you approach collaboration between doctors, biochemists, and dentists to ensure the prevention of endocarditis in at-risk patients?

Establishing Communication Channels: It is essential to establish effective communication channels between the health professionals involved. This may include regular meetings, exchange of information electronically, and establishment of clear communication protocols. Mutual Knowledge of Roles and Responsibilities: Each team member should have a clear understanding of their roles and responsibilities in preventing endocarditis. This includes understanding updated guidelines and recommendations. Comprehensive Medical History: Dentists should provide physicians and biochemists with a complete and up-to-date medical history of the patient, including any pre-existing heart conditions and history of endocarditis.

Identification of High-Risk Patients: Physicians and biochemists should identify patients who are at higher risk of developing endocarditis and communicate this information to dentists. This can include patients with pre-existing heart disease, artificial heart valves, a history of endocarditis, among others. Antibiotic Prophylaxis Recommendation: If a patient is determined to be at risk and requires antibiotic prophylaxis, physicians and biochemists should provide guidance on the type of antibiotic, dosage, and timing of administration. Education and Awareness: Dentists should educate patients on the importance of maintaining good oral health and informing their health care team of any changes in their medical history, especially as it pertains to heart conditions.

Care Coordination: Healthcare professionals must coordinate patient care holistically. This may include planning appointments and procedures to ensure that all recommendations are followed. Post-Procedure Follow-Up: After a dental procedure, dentists should provide doctors and biochemists with any relevant information about the procedure and the patient's condition to facilitate follow-up.

Constant Updating of Knowledge: All team members should stay up-to-date on current guidelines and recommendations regarding endocarditis prevention and be aware of any changes in clinical practices. Respect for Care Team Decisions: It is important for all healthcare professionals to respect the decisions and recommendations of the care team, and to work together in the best interest of the patient.

4.3.5 What recommendations would you provide to dentists regarding pre-existing heart disease in terms of oral health?

Detailed Medical History: Obtain a complete and up-to-date medical history of the patient, paying special attention to pre-existing heart diseases, such as coronary heart disease, heart failure, valvular heart disease, among others. Risk Assessment: Determine the patient's individual risk based on their heart condition and other risk factors, such as the presence of prosthetic valves or a history of endocarditis Coordination with the Medical Team: Work closely with the patient's medical team, including cardiologists and primary care physicians, to fully understand their health status and any specific restrictions or recommendations. Dental History Deepening: Conduct a thorough review of the patient's dental history, including any previous procedures, medications they are taking, and any other factors that may influence oral health.

Consideration of Antibiotic Prophylaxis: If the patient is at risk for endocarditis, follow updated guidelines on administering prophylactic antibiotics prior to certain dental procedures. Make sure the antibiotic is given at the right dose and time. Managing Anxiety and Stress: Anxiety and stress can negatively affect heart health. Consider strategies to minimize patient anxiety during dental visits, such as relaxation techniques or conscious sedation if necessary. Rigorous Aseptic Technique: Maintain strict aseptic technique during dental procedures to prevent infection and minimize the risk of bacteremia. Patient Education: Provide patient education on the importance of maintaining good oral health as an integral part of their overall health. It highlights the relationship between oral health and heart disease.

Blood Pressure Monitoring: If the patient has hypertension, consider measuring their blood pressure before and after the dental procedure and taking action if significant changes are detected. Planning Appointments and Procedures: If the patient is undergoing cardiac treatment, coordinate dental appointments in consultation with the medical team to ensure there are no conflicts with their cardiovascular treatment. Post-Procedure Follow-Up: After invasive dental procedures, ensure that the patient is being closely monitored and that the medical team is informed about the procedure and the patient's condition. Keep a Detailed Log: Keep a detailed record of the procedures performed and any relevant findings to facilitate follow-up and coordination with the medical team.

5 CONCLUSION

The prevention of endocarditis is a fundamental aspect of dental practice, and knowledge of the bacteria involved plays a crucial role in this process. Through this review, we have been able to highlight the importance of the dentist in the prevention of endocarditis, focusing on their knowledge of the bacteria involved in this potentially fatal heart infection and the need for multidisciplinary work among them.

First of all, it is evident that the dentist plays an essential role in the prevention of endocarditis by understanding the bacteria that can cause this disease. Since endocarditis is an infection of the heart valves, it is crucial for dentists to be familiar with the oral bacteria that can enter the bloodstream during dental procedures and potentially stick to damaged areas of the heart. This understanding allows the dentist to take appropriate preventative measures to minimize the risk of endocarditis in patients with pre-existing heart conditions.

Second, education and effective communication between the dentist and the patient are vital. Patients with heart conditions should inform their dentist of their medical history so that extra precautions can be taken during dental procedures. In addition, the dentist should be able to explain to patients the importance of antibiotic prophylaxis in high-risk situations and to ensure that the recommended guidelines are followed.

In summary, the fundamental role of the dentist in the prevention of endocarditis lies in their knowledge of the bacteria involved and their ability to take appropriate preventive measures. This awareness and collaboration with the patient are essential to reducing the risk of serious heart infection and improving dental care in patients with pre-existing heart conditions. Constant education and updating on best practices in endocarditis prevention are crucial to ensuring the safety and well-being of patients.

REFERENCES

MACUCA PORTILLO, M. C. (2021). ACTUALIZACIÓN SOBRE ENDOCARDITIS BACTERIANA Y ODONTOLOGÍA. FACULTAD DE ESTOMATOLOGÍA. SEVILLA. HTTPS://IDUS.US.ES/BITSTREAM/HANDLE/11441/134637/TFG%20487-GARC%C3%8DA%20MOTI%C3%91O.PDF?SEQUENCE=1&ISALLOWED=Y

BASCONES-MARTÍNEZ, A., MUNOZ-CORCUERA, M., & BASCONES-ILUNDAIN, J. (2012). INFECCIONES ORALES Y ENDOCARDITIS INFECCIOSA. *MEDICINA CLINICA*, *138*(7), 312-317. HTTPS://WWW.SCIENCEDIRECT.COM/SCIENCE/ARTICLE/ABS/PII/S0025775311004301

Ramos, J. M. F., & Orozco, S. H. A. (2012). Antimicrobianos en odontología: resultados de una encuesta sobre el tratamiento y prevención de infecciones, la profilaxis de endocarditis infecciosa y la combinación de antibióticos. *Revista de la Asociación Dental Mexicana*, *69*(1), 22-30. https://www.medigraphic.com/cgi-bin/new/resumen.cgi?IDARTICULO=33525

Pangol, O. E. M., Cabrera, O. F. G., Izquierdo, L. A. V., & Granda, B. H. V. (2023). Relación entre la endocarditis infecciosa y estreptococos del grupo viridans presentes en la cavidad oral. *Polo del Conocimiento*, *8*(5), 304-319. https://mail.polodelconocimiento.com/ojs/index.php/es/article/view/5565

Pangol, O. E. M., Granda, B. H. V., Vega, A. D. C. A., & Castillo, D. A. L. (2023). Influencia a nivel sistémico del Streptococcus mutans presente en caries y prótesis dentales: una revisión bibliográfica. *Odontología Activa Revista Científica*, *8*(1), 57-64. https://oactiva.ucacue.edu.ec/index.php/oactiva/article/view/747

Ladrón-de-Guevara, H., Canelo, L., Bitar, H., & Ramón Soto, J. (2021). Imágenes en endocarditis infecciosa: No todo es ecocardiografía. *Revista chilena de infectología*, *38*(2), 260-270. https://www.scielo.cl/scielo.php?pid=S0716-10182021000200260&script=sci_arttext

Allende González, A., Bermúdez Yera, G. D. J., Mirabal Rodríguez, R., Quintero Fleites, Y. F., López de la Cruz, Y., & Chaljub Bravo, E. (2020). Caracterización clínico-epidemiológica con enfoque quirúrgico de la endocarditis infecciosa en la región central de Cuba. *CorSalud*, *12*(2), 138-145. https://dialnet.unirioja.es/servlet/articulo?codigo=8106555

Merello, L., Salazar, R., Elgueta, F., González, D., Elton, V., Quiroz, M., ... & Aránguiz-Santander, E. (2019). Sobrevida a 10 años de pacientes egresados luego de cirugía por endocarditis infecciosa en un hospital público. *Revista médica de Chile*, *147*(12), 1535-1542. https://www.scielo.cl/scielo.php?pid=S0034-98872019001201535&script=sci_arttext&tlng=en

Roa, D., Silva, V., & Hernández, R. (2021). Endocarditis infecciosa en hospital clínico Herminda Martín de Chillán: experiencia de los últimos cinco años.: Infective endocarditis at Herminda Martin clinical hospital of Chillan: last five years experience. *ARS MEDICA Revista de Ciencias Médicas*, *46*(1), 20-26. https://www.arsmedica.cl/index.php/MED/article/view/1759

Hernández, D. L. D. G., Canelo, A., Bitar, P., & Soto, J. R. (2021). Imágenes en endocarditis infecciosa: No todo es ecocardiografía. *Revista Chilena de Infectología*, *38*(2). https://www.revinf.cl/index.php/revinf/article/view/818

Romero Flecha, J. R., & Aveiro Figueredo, A. C. (2020). Características clínicas, bacteriológicas y demográficas de las endocarditis infecciosas. *Revista del Nacional (Itauguá)*, *12*(1), 42-54. http://scielo.iics.una.py/scielo.php?script=sci_arttext&pid=S2072-81742020000100042

Reyes Cea, A. (2023). Utilidad clínica de PET/CT 18F-FDG ante pacientes con sospecha de Endocarditis Infecciosa. https://repositorio.uchile.cl/bitstream/handle/2250/194509/Minitesis-Utilidad-clinica-de-PET-CT-18F-FDG.pdf?sequence=1

Humeres-Flores, P., Medel-Castro, G., & Montenegro, U. (2022). ¿Cómo se articulan los aspectos éticos con la formación clínica de los futuros odontólogos en Chile? Una pregunta crucial. *FEM: Revista de la Fundación Educación Médica*, *25*(2), 63-71. https://scielo.isciii.es/scielo.php?pid=S2014-98322022000200003&script=sci_arttext&tlng=pt

Torres, F., Renilla, A., Flórez, J. P., Secades, S., Benito, E. M., & de la Hera, J. M. (2012). Grado de conocimiento de la profilaxis de endocarditis infecciosa entre los dentistas españoles. *Rev. esp. cardiol.(Ed. impr.)*, 1134-1135. https://pesquisa.bvsalud.org/portal/resource/pt/ibc-107886

Chumpitaz-Cerrate, V., Aguirre-Montes, P. M., & Chávez-Rimache, L. K. (2020). Nivel de conocimiento sobre profilaxis antibiótica de endocarditis infecciosa en estudiantes de Odontología de Lima. *Revista Habanera de Ciencias Médicas*, *19*(1), 125-142. https://scholar.google.es/scholar?hl=es&as_sdt=0,5&q=tesis+sobre+endocarditis+infecciosa+y+la+odontologia

Bascones-Martínez, A., Munoz-Corcuera, M., & Bascones-Ilundain, J. (2012). Infecciones orales y endocarditis infecciosa. *Medicina Clinica*, *138*(7), 312-317. https://www.sciencedirect.com/science/article/abs/pii/S0025775311004301

Chumpitaz-Cerrate, V., Aguirre-Montes, P. M., & Chávez-Rimache, L. K. (2020). Nivel de conocimiento sobre profilaxis antibiótica de endocarditis infecciosa en estudiantes de Odontología de Lima. *Revista Habanera de Ciencias Médicas*, *19*(1), 125-142. https://scholar.google.es/scholar?as_ylo=2019&q=tesis+sobre+endocarditis+infecciosa+y+la+odontologia&hl=es&as_sdt=0,5

Fuentes, O. C. R., & Izquierdo, L. A. V. (2023). Endocarditis bacteriana por S. aureus en paciente con Valvulopatías, un enemigo silencioso en la consulta odontológica, revisión de literatura. *Polo del Conocimiento*, *8*(4), 1720-1742. https://polodelconocimiento.com/ojs/index.php/es/article/view/5525

Portilla Arias, I. (2022). Nivel de conocimientos de los cirujanos dentistas sobre la atención odontológica en pacientes con endocarditis bacteriana, Cusco-2021. https://repositorio.uandina.edu.pe/handle/20.500.12557/5041

Méndez Archila, M. P., Quintero Suárez, J. D., & Reyes Pinzón, Y. B. (2019). *Nivel de conocimientos de los estudiantes de Odontología de la Universidad Santo Tomás acerca de Profilaxis Antibiótica en la prevención de Endocarditis Infecciosa* (Doctoral dissertation, Universidad Santo Tomás). https://repository.usta.edu.co/handle/11634/17433