



AUTHORS

Lucas Cesar Calistro¹, Eric Janses
Fernandes Tinoco¹, Salomão Barauna
Alcolumbre², Éber Coelho Paraguassu¹ e
Douglas Voss³

Corresponding Author: Éber Coelho
Paraguassu
Email: paraguassu84@yahoo.com.br

DOI (CROSSREF)

<https://doi.org/10.36557/2674-8169.2019v1n6p168>

AFFILIATED INSTITUTION

1-Departamento de ciências
Odontológicas – Faculdade São
Leopoldo Mandic – Campinas – São
Paulo - Brasil

2-Departamento de Cardiologia -
Hospital Cruz Azul - São Paulo - São Paulo
- Brasil

3- Departamento de Ciências
Odontológicas – UFPA – Belem – Pará -
Brasil

KEY WORDS

High blood pressure, dental care,
dentistry and hypertension.

SYSTEMATIC REVIEW

DENTAL CARE IN HYPERTENSE PATIENTS: SYSTEMATIC REVIEW

The dental surgeon often performs treatment in hypertensive patients and should therefore be aware of the diagnosis of the disease, its signs and symptoms and treatment. Thus, the aim of this study was to perform a literature review on dental treatment in patients with hypertension. The bibliographic survey consists of articles available in databases such as Scielo, Pubmed and Google Scholar, published from 1995 to 2016. Most patients who attend dental offices have high blood pressure, although some are unaware of their condition, making the measurement of blood pressure of all patients by the professionals is essential. In the treatment of these patients it is important to know the previous medical history, the antihypertensive drugs used and the expectations (fear, anxiety, tension, stress) regarding the proposed treatment. It was concluded that dental treatment of hypertensive patients represents a challenge for dental surgeons, who should be scientifically based in order to establish the best conduct for the management of this type of patient. Perform a very detailed anamnesis and blood pressure measurement, guide the patient about his systemic condition, Clarifying the therapies employed and recognizing the changes arising from them are fundamental for establishing the best treatment plan and for minimizing or preventing complications that may occur during dental care.

ATENDIMENTO ODONTOLÓGICO EM PACIENTES HIPERTENSOS: REVISÃO DE LITERATURA

RESUMO

O cirurgião-dentista geralmente realiza tratamento em pacientes hipertensos e, portanto, deve estar ciente do diagnóstico da doença, de seus sinais e sintomas e tratamento. Assim, o objetivo deste estudo foi realizar uma revisão da literatura sobre tratamento odontológico em pacientes com hipertensão. A pesquisa bibliográfica consiste em artigos disponíveis em bancos de dados como Scielo, Pubmed e Google Scholar, publicados de 1995 a 2019. A maioria dos pacientes que freqüentam consultórios odontológicos tem pressão alta, embora alguns não tenham conhecimento de sua condição, fazendo a aferição da pressão arterial. No tratamento desses pacientes, é importante conhecer a história médica anterior, os medicamentos anti-hipertensivos utilizados e as expectativas (medo, ansiedade, tensão, estresse) em relação ao tratamento proposto. Concluiu-se que o tratamento odontológico de pacientes hipertensos representa um desafio para os cirurgiões-dentistas, que devem estar fundamentados cientificamente para estabelecer as melhores condutas para o manejo desse tipo de paciente. Realizar uma anamnese e aferição da pressão arterial, orientar o paciente sobre sua condição sistêmica, esclarecer as terapias empregadas e reconhecer as alterações decorrentes delas são fundamentais para estabelecer o melhor plano de tratamento e minimizar ou prevenir complicações que possam ocorrer durante o atendimento odontológico.

PALAVRAS CHAVE: Hipertensão arterial, atendimento odontológico, odontologia e hipertensão.

Lucas Cesar Calistro – *Cirurgião Dentista especialista e mestre em Implantodontia*

Eric Janses Fernandes Tinoco – *Cirurgião Dentista especialista e mestre em Implantodontia*

Salomão Barauna Alcolumbre – *Médico Cardiologista*

Éber Coelho Paraguassu - *Cirurgião Dentista especialista e mestre em Implantodontia*

Douglas Voss - *Cirurgião Dentista especialista e mestre em Implantodontia*

CITATION

CALISTRO, Lucas Cesar, TINOCO, Eric Janses Fernandes, ALCOLUMBRE, Salomão Barauna, PARAGUASSU, Éber Coelho, VOSS, Douglas. *Dental care in hypertense patients: literature review*.

Brazilian Journal of Implantology and Health Sciences. v.1, n.6, p. 152-168, 2019. DOI:

<https://doi.org/10.36557/2674-8169.2019v1n6p168>

INTRODUCTION

High blood pressure (AH) or high blood pressure (BP), as it is known popularly, it is defined as an abnormal elevation of resting systolic blood pressure and is characterized by elevated systolic and / or diastolic pressure levels [1].

AH is a relatively common condition, affecting around 22% to 41% of the adult Brazilian population [2]. In addition, it accounts for more than 7 million deaths annually [3] and is considered a risk factor for cardiovascular disease [4].

Hypertension can be classified into two types: primary or essential hypertension and secondary hypertension [5]. The primary has unknown etiology and is found in about 90% of patients; On the other hand, the rarer secondary hypertension may originate from renal, endocrine, neurogenic, hereditary and cardiovascular problems, which cause can be identified [6].

Hypertension is diagnosed when the individual has systolic pressure greater than or equal to 140 mm of mercury (mmHg) or diastolic pressure greater than or equal to 90 mmHg [7]. In 2003, the international body (JNC) that brings together specialists for the study of hypertension established the following classification for BP: normal (optimal) <120 mmHg / <80 mmHg; prehypertension 120-139 mmHg / 80-89 mmHg; stage 1 hypertension 140-159 mmHg / 90-99 mmHg; and stage 2 hypertension > or equal to 160 mmHg / or > or equal to 100 mmHg [8].

AH as asymptomatic can only be diagnosed by periodic blood pressure measurement, when the dentist fits in, who maintains contact with the patient in numerous consultations and half-yearly reviews [9]. According to Varellis (2005), blood pressure should be measured at the first consultation and annually in all patients; and in cases of patients who already know to be hypertensive, it is recommended to check in all consultations. However, Caneppele et al. (2011) found in their study that 30.3% of dentists do not measure their patients' BP and 31% of respondents only measure the BP of hypertensive patients.

The dental surgeon often performs treatment on patients hypertensive patients should, therefore, perform very detailed anamneses in order to investigate the health status of their patients and the medications used by them and, in cases of need to perform surgical procedures, it is important to request some tests, such as blood count, fasting blood glucose, coagulogram, and always check blood pressure before and, if necessary during dental care [10].

The very detailed anamnesis allows obtaining data such as the patient's past medical history and hereditary components that increase the possibility of being affected by some systemic disease [11]. Ferrazzo et al. (2014) found a high prevalence of undiagnosed prehypertension and hypertension, as well as a high rate of uncontrolled disease, pointing out the importance of routine blood pressure measurement in dental appointments.

According to the Joint National Committee (JNC) in the evaluation of hypertensive patients, three objectives should be followed: to evaluate lifestyle and identify other cardiovascular risk factors; identify the causes of hypertension; and evaluate the presence of target organ injury (LOA), since medical conditions may influence the dental treatment plan. Thus, JNC proposed an updated protocol for dental treatment. In hypertensive patients, in order to guide the procedures to be adopted by the dentist, namely: patients with normal or prehypertensive BP may undergo the usual dental treatment without any change in the treatment plan; patients with stage 1 hypertension should be carefully evaluated for the presence of LOA, because in the absence of it, dental treatment can be performed normally and if LOA is suspected, the professional should refer the patient for medical evaluation and should only perform emergency treatment, such as prescription medications to relieve painful or septic symptoms, awaiting medical advice for definitive treatment; and patients with stage 2 hypertension should be postponed and should be referred to the physician and those presenting associated LOA may require immediate hospitalization [12].

Control of stress, fear and anxiety is also important during the treatment of these patients, as such situations often alter and increase BP (PERALTA et al., 1995; BRAND et al., 1995). In this regard, it is advisable to establish a trusting relationship with the patient, clarifying their dental condition, explaining the treatment plan, knowing the patient's fears and fears, and addressing pain control methods [13].

According to Muzyka and Glick (1997) the professional can use anxiolytic drugs or nitrous oxide for dental treatment of stage 1 anxious, prehypertensive or hypertensive patients. Identifying hypertensive individuals in order to avoid intraoperative problems [14].

Thus, in dentistry, one should consider the so-called "white coat hypertension", characterized as a condition of elevation of blood pressure only in the office when the patient is in expectation or tension of care, but the pressure normalizes in other situations. daily life [14].

There is also the possibility of further elevation of blood pressure by the use of anesthetics with vasoconstrictors (GOODMAN, GILMAN, 1996). In this regard, the use of vasopressors in patients treated with non-selective beta-blockers increases the likelihood of elevated blood pressure, and it is recommended to monitor preoperative

vital signs in all patients, especially those receiving beta-blockers, and to verify these signs again 5 to 10 minutes after local anesthetic administration with vasoconstrictor [15].

For Gealh and Franco (2006) the dental surgeon should actively participate as an auxiliary member in the treatment of hypertension, but whose conduct in professional practice should be scientifically based. As for local anesthetics containing vasoconstrictors, they may be used with safety in hypertensive patients, provided that the recommended dose is respected; and when prescribing specific cyclooxygenase-2 (COX-2) inhibitors, care should be taken as with conventional non-steroidal anti-inflammatory drugs because of their effects on renal function.

As observed in the literature, it is clear that the major implications of hypertension associated with dental procedures are related to patient anxiety and possible interactions of anesthetic epinephrine (vasoconstrictor) with medications.

used by the patient, as both situations can lead to a significant increase in blood pressure [16].

In addition, oral manifestations of hypertension should be highlighted, particularly as a result of the use of medicines such as diuretics (Furosemide and Hydrochlorothiazide), anti-adrenergics (Metildopa), beta-blockers (Atenolol, Nadolol, Propranolol), calcium channel antagonists (Verapamil). and Nifedipine) and angiotensin converting enzyme (ACE) inhibitors (Captopril and Enalapril [17].

Oral manifestations include xerostomia, taste alteration, stomatitis, gingival bleeding, inflammation and sore throat, temporomandibular joint (TMJ) pain, glossitis, salivary gland inflammation, darkened tongue, gingival hyperplasia, and facial angioedema. , lips, tongue and buccal mucosa [18].

Finally, the dentist should be able to treat hypertensive patients, so that the best approach to this type of patient is to make a very detailed anamnesis, in order to propose the best treatment plan and minimize or prevent complications that may occur during dental care.

METHODOLOGY

We performed a literature review about dental treatment in hypertensive patients. The bibliographic survey of this study was from 1995 to 2019.

Articles regarding the above theme were selected and according to the following descriptors: dental treatment, hypertension, hypertension and dentistry patients.

The selected works, both in Portuguese and English, were available in databases such as Scielo, Pubmed and Google Scholar; and were published in national and international journals.

The inclusion criteria were works that met the descriptors and on the aforementioned theme, review articles, case reports and research papers. Articles published in other languages such as Chinese, Japanese, German, and Spanish were excluded.

SYSTEMATIC REVIEW

[19] Described that reducing timewaiting for treatment and, if possible, consultation time may be beneficialhypertensive, as these factors may influence the degree of stress.

According to the authors, in their study, the occurrence of complications in patientswith cardiovascular disease increased significantly from 2.9% to 15.0%cases in treatments of 20 minutes or over 90 minutes, respectively.Brand in 1999 found a significant change in blood pressure beforeapplication of a local anesthetic containing adrenergic vasoconstrictor duringdental treatment. This suggests that blood pressure may change fromaccording to the anesthetic used, the type of vasoconstrictor administered and factors such as the presence of arterial hypertension, low pain threshold, experiencebad prior dental and anxiety regarding dental treatment.

[20] Pointed out that antihypertensive medicationmay cause oral changes such as salivary dysfunction due to the action ofdiuretics, calcium channel blockers and beta blockers; hyperplasiagingival by the use of calcium channel blockers; and alteration in the oral mucosa andtaste disorders by diuretics.

[21] Performed a bibliographical review about theetiopathogenesis of hypertension, the risks and preventive measures to beemployed in dental care for hypertensive patients. Atconsiderations pointed out by the authors were as follows: a well-known anamnesisstress reduction and control of anxiety and fearfacing dental treatment contributes to the care of patientshypertensive; local anesthetics associated with adrenergic vasoconstrictorsshould be avoided in hypertensive individuals taking

medication because of possible precipitations of episodes, except in controlled hypertensive patients stage I or II, in which epinephrine is the most indicated vasoconstrictor; The classification of patients according to the type of hypertension is important in indication of dental treatment categories in order to avoid accidents such as infarction, stroke, and kidney failure; as a complement to some types of treatments and to control anxiety that may affect your adverse blood pressure sedation techniques may be used; the monitoring ambulatory blood pressure (ABPM) helps in monitoring changes that the patient is subject in his day and thus realize where changes occurs significant and avoid them; blood pressure control are important. following factors: heredity, obesity control, salt and drink intake alcohol, physical activity, avoid smoking and stress; the patients hypertensive patients should be advised of the signs and symptoms of hypertension to control and access to the necessary immediate care; seizures may occur hypertensive patients in the dental office, mainly due to pain, stress and vasoconstrictor anesthetic injection stimuli; the prevention of hypertension attack can be made by the patient's psychic preparation and administration of barbiturates approximately 30 minutes before intervention with medical authorization and with sublingual coronary vasodilator drugs with vasoconstrictors may be used and avoid prolonged and painful procedures; and practitioners should write down a scouting routine blood pressure before starting any kind of treatment because the diagnosis disease will contribute to the establishment of a treatment plan for according to the patient's systemic conditions, reducing or avoiding the occurrence of hypertensive crises.

[22] Report that if there are any complications with the patient, it will not be by the vasoconstrictor but by the endogenous catecholamines released into circulation, since the amount released in situations of stress is far above that contained in a dental tube making it ridiculous to amount present there. Moreover, even in the face of increasing frequency heart rate, systolic blood pressure and diastolic blood pressure and epinephrine levels, mean blood pressure and overall hemodynamic response remain virtually unchanged. If the maximum doses of epinephrine are serious adverse effects are observed, even in heart disease. The contraindication to the use of vasoconstrictors is restricted to patients with cardiovascular disease including untreated severe hypertension or uncontrolled.

[23] Reported that dental treatment can induce anxiety and apprehension in patients. Individuals can be taken phobias or panics, often without an apparent cause, while sitting on the dentist's chair; or they can be stimulated by factors that generate stress in the dental care environment itself, such as sight of blood or instruments, especially the carpule syringe and needles; the sudden or sharp movements of the professional and the unexpected sensation of pain. According to the author, anxiety control methods may be pharmacological or non-pharmacological. The first is verbalization (iatrosedation), sometimes associated with muscle relaxation or psychological conditioning techniques. When this is not enough to reduce anxiety and fear, it is advisable to use pharmacological methods as a complementary measure. Castro and collaborators in 2003 described that individuals are considered hypertensive when their systolic blood pressure (SBP) is equal to or greater than 140 mmHg, or its Diastolic Blood Pressure (DBP) is greater than or equal to 90 mmHg. In addition, the drugs used to control hypertension Systemic Artery may interfere with salivary flow, manifestations of candidiasis oral and caries lesions, altered the oral health of these patients.

[24] Point out that the treatment medication of blood pressure causes different changes in the oral cavity, such as hyperplasia, xerostomia, reduced tongue mobility, difficulty in chewing and swallowing, change in taste sensation, increased incidence of candidiasis, increased caries and periodontal disease, nocturnal oral discomfort and burning sensation.

[25] Pointed out that antihypertensive drugs have action mechanisms are the reduction of sympathetic flow in various ways, inhibiting the uptake of catecholamines (adrenaline and noradrenaline), reducing the adrenergic neurotransmission or decreasing response to sympathetic stimulus consequently decreasing the secretory stimulus of the gland salivating which in turn leads to dry mouth. Soares and collaborators, in 2006, stated that of anesthetic solution sites containing vasoconstrictors is not contraindicated in compensated hypertensive with diastolic blood pressure up to 100 mmHg and can be used adrenaline 1: 100,000 in small doses not exceeding the 2-tube limit per session or 0.03 UI / mL felipressin plus 3% prilocaine for not producing effects on the cardiovascular system. However, in patients with abnormal pressure in urgent care, an anesthetic should be used without vasoconstrictor, such as 3% mepivacaine. Indriago, in 2007, reported that the use of hypertensive medications

may cause side effects in the oral cavity of hypertensive patients. Among the side effects include gingival hyperplasia, which is very common in patients using calcium channel blockers such as Nifedipine, with an incidence ranging from 1.7% to 38%.

[26] Performed a literature review to identify if there are restrictions on the use of vasoconstrictors associated with local anesthetics in hypertensive individuals, which are the most which dosage best meets the needs of the professional and their patient. The findings found were as follows: in patients with controlled hypertension in stage I or II local anesthetics may be used associated with vasoconstrictors such as felypressin or even some adrenergic agents; Among adrenergic vasoconstrictors, it is preferable to choose epinephrine in concentration of 1: 100,000, provided that the amount administered per session is between 18µg and 58µg which would correspond to one to three anesthetic tubes intravascular administration of the anesthetic solution should be avoided; in hypertensive patients receiving anti-hypertensive beta blockers non-selective diuretics or non-caluretic diuretics should be avoided. Local anesthetics associated with adrenergic vasoconstrictors, since these may be more susceptible to possible episodic precipitations in hypertensive patients motivated by these vasoconstrictors; and the reduction in the degree of stress as well as the control of anxiety and fear regarding dental treatment are beneficial in the care of hypertensive patients.

[27] Highlight that when the symptoms of a crisis in hypertensive patients are diagnosed in the patient, such as elevated blood pressure, headache, epistaxis, gingival bleeding after manipulation, dizziness, malaise, mental confusion and visual disturbances, care should be discontinued immediately put the patient in a comfortable position, monitor their signs reassure him and administer captopril (25 to 50 mg) sublingually. When the crisis ceases, the patient should be referred as soon as possible for medical attention.

[28] Conducted a literature review on care for hypertensive individuals and had the following considerations: hypertensive individual needs special care in dental care; the use of an oral health care protocol is recommended directed to these patients; this protocol should include measures to reduce the stress, as well as the control of anxiety and fear associated with treatment; a very detailed anamnesis, together with an anesthesia effective with an epinephrine vasoconstrictor is beneficial for

patients hypertensive; the dentist should be part of a team multidisciplinary / multidisciplinary approach that assists individuals diagnosed with hypertension in order to create strategies for this group of patients have, increasingly, adequate conditions for the search and maintenance of health; and in search of control and access to immediate and necessary care, the Dentist needs to advise hypertensive patients on signs and symptoms of this pathology.

[28] Conducted a literature review to provide an overview of concerns in treatment of patients with hypertension and to provide recommendations that are useful in the care of these patients who come to the dental office. According to the authors the treatment and management of the patient with Hypertension, especially in the dental environment, is a very discussed and approached in the literature.

New information on hypertensive patients are published frequently and management is frequently changed, however it is important to implement these new changes to maintain the best quality possible care when treating these patients. The dentist should have knowledge of the disease, to know the current therapeutic options and to have the ability to provide access to care for patients. The recommendation for the management of these patients is based mainly on the judgment of the professional and before providing care to these patients, the professional should be able to assess the patient's health status and make appropriate decisions with based on the following factors: basal blood pressure, urgency of the procedure, physical and physical function, time and invasiveness of the procedure. Most importantly, when in doubt, medical advice should be considered and consulted, as the Patient's health should always be first.

DISCUSSION

Hypertension has a well-defined concept and is characterized by abnormal elevation of resting systolic blood pressure, as described by [23]

[11] the patient is considered hypertensive when the systolic pressure is greater than or equal to 140 mmHg or diastolic pressure is greater than or equal to 90 mmHg. [14]

describe that hypertension can be classified as two types: primary or essential hypertension and secondary hypertension. Other authors agree in reporting that primary hypertension is found in approximately 90% of individuals [20]

Several authors argue that hypertension can be diagnosed by periodic blood pressure measurement, making it necessary for the surgeon dentist performs this procedure at dental appointments [7,12,18,21]

[2] Blood pressure should be measured in the first consultation and annually in all patients; and in patients who already know how to be in hypertensive patients, it is recommended that measurement be performed at all appointments. Under this point of view of this, continuing professional education is needed [5]. In most cases BP has an unknown etiology (hypertension) [9]

However, different studies point to the role of anxiety, tension, stress and fear of alteration and elevation of blood pressure [4,6,9,12,19,26]. According to [22] the control of anxiety and fear can be through verbalization associated or not with relaxation techniques muscle or psychological conditioning; and when these are not enough we can pharmacological methods should be used.

Regarding anesthetic solutions used in dentistry, [3] report that there is a possibility of additional pressure elevation by the use of anesthetics with vasoconstrictors [5]. [3] did not verify significant alteration of blood pressure in relation to the use of a local anesthetic containing vasoconstrictor. [7] Local anesthetics containing vasoconstrictors may be safely used in hypertensive patients as long as the dose recommended is respected.

[9] Also defend the use of local anesthetic solutions containing vasoconstrictors in hypertensive compensated as long as the diastolic blood pressure is 100 or less mmHg and adrenaline 1: 100,000 may not be used, not exceeding the limit of 2 tubes per session. However, [11] highlights the type of hypertension presented by the patient and the use of vasoconstrictors because, according to authors local anesthetics associated with adrenergic vasoconstrictors should be prevented in hypertensive individuals taking medication because of possible precipitations of hypertensive episodes, except in

hypertensive controlled in the stage I or II, in which epinephrine is the most indicated vasoconstrictor.[13] Suggest the use of another vasoconstrictor, such as 0.03UI / mL felipressin plus 3% prilocaine. And when there is absolute indication of the use of vasoconstrictors an anesthetic may be used without vasoconstrictor, such as 3% mepivacaine [2].

In the case of hypertensive crises, [1] propose the following protocol: stop care immediately, put patient in position monitor your vital signs, administer captopril (25 to 50 mg) via sublingual and when the crisis ceases refer the patient for medical attention.[3] state that in case of hypertensive urgency, it can be medicate the patient with an antihypertensive; in emergency cases hypertensive patient, they should be referred to an emergency room immediately.[8] Describe that a way to prevent the hypertensive attack is to perform the psychic preparation of the patient and administer about 30 minutes before the procedure with medical authorization, and with sublingual coronary vasodilators.

Hypertensive patients may present with oral alterations due to use of antihypertensive drugs [10]. Among these changes are salivary dysfunction, gingival hyperplasia, alteration in oral mucosa and taste disturbances [28].

[21] Highlights the occurrence of gingival hyperplasia in patients who use of calcium channel blockers. Many studies describe oral manifestations in patients hypertensive patients, such as altered taste, stomatitis, gingival bleeding, sore throat and inflammation, TMJ pain, glossitis, inflammation of the gland salivars, darkened tongue, gingival hyperplasia, and angioedema of the face, lips, tongue and buccal mucosa [11, 14, 18].

[5] Described other changes: flow altered salivary, manifestations of oral candidiasis and caries lesions. [10] agree with these changes and point out others such as xerostomia, reduced tongue mobility, difficulty chewing and swallowing food, change in taste sensation, increased disease periodontal disease, nocturnal oral discomfort and burning sensation. Care of hypertensive patients requires very detailed anamnesis in order to investigate the health status of their patients and the medications used by them [2,8,9,15,17,27]

In addition, it is essential to obtain complementary examinations and perform periodic blood pressure measurement [24, 25].

FINAL CONSIDERATIONS

Dental treatment of hypertensive patients represents a challenge for dentists, who must be scientifically based on way to establish the best conduct for the management of this type of patient. Perform a very detailed anamnesis and blood pressure measurement, guide the patient about their systemic condition, clarify the therapies employed and recognizing the changes arising from these are fundamental to establishing the best treatment plan and to minimize or prevent the complications that may occur during dental care .

REFERÊNCIAS

1. VARELLIS, M. L. Z. **O paciente com necessidades especiais na Odontologia. Manual prático**. São Paulo: Santos; 2005.
2. SALKIC, S.; et al. Clinical presentation of hypertensive crises in emergency medical services. **Mater Sociomed**, v. 26, n. 1, p. 12–16, 2014.
3. RODRIGUES, K. P.; PINHEIRO, H. H. C.; ARAÚJO, M. V. A. Percepção de acadêmicos de Odontologia sobre seus conhecimentos para o atendimento odontológico de hipertensos e diabéticos. **Revista da ABENO**, v. 15, n. 4, p. 19-28, 2015.
4. OLIVEIRA, A. E. M. **Anestésicos locais associados a vasoconstritores adrenérgicos em pacientes hipertensos (contribuição ao estudo)**. 2000. 86f. Dissertação (Mestrado em Clínica Integrada) – Faculdade de Odontologia, Universidade de São Paulo, São Paulo, 2000.
5. NICHOLS, C. Dentistry and hypertension. **J Am Dent Assoc**, v. 128, n. 11, p. 1557- 62, 1997.
6. MOSEGUI, G. B. G.; et al. Avaliação da qualidade do uso de medicamentos em

idosos. **Rev. Saúde Pública**, v. 33, n. 5, p. 437-444, 1999.

7. MALAMED, S. F. **Manual de anestesia local**. 5. ed. Rio de Janeiro: Guanabara Koogan, 2005.

8. LÚCIO, C.S.P.; BARRETO, C.R., Emergências médicas no consultório odontológico e a insegurança dos profissionais. **Revista Brasileira de Ciências da Saúde**, v.16, n. 2, p. 267-272, 2012.

9. KIM, Nam-Hee; et al. Provision of oral hygiene services as a potential method for preventing periodontal disease and control hypertension and diabetes in a community health centre in Korea. **Health Soc Care Community**, p. 1–8, 2017.

10. JOINT NATIONAL COMMITTEE on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. **The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure**. Washington DC: National Institutes of Health, National Heart, Lung, and Blood Institute; 2003.

11. HIRATA, M. **Duração de ação anestésica e efeitos cardiovasculares da lidocaína, mepivacaína ou prilocaína com felipressina em hipertensos essenciais tratados com bloqueadores**. 2003. Dissertação (Pós-Graduação) - Faculdade de Odontologia, Universidade de São Paulo, São Paulo, 2003.

12. GOULART, Jean Carlos Fernandes; et al. Influence of anxiety on blood pressure and heart rate during dental treatment. **Rev Odonto Cienc**, v. 27, n. 1, p. 31-35, 2012.

13. GEALH, W. C.; FRANCO, W. P. G. Atendimento odontológico ao paciente hipertenso protocolo baseado no VII JNC. **J Bras Clin Odontol Int**, p. 01-09, 2006.

14. FERNÁNDEZ-FEIJOO, J.; et al. Screening for hypertension in a primary care dental clinic. **Med Oral Patol Oral Cir Bucal**, v. 15, n. 3, 2010.

15. DELGADO-PÉREZ, V. J.; et al. Diabetes or Hypertension as Risk Indicators for Missing Teeth Experience: An Exploratory Study in a Sample of Mexican Adults. **Nigerian Journal of Clinical Practice**, v. 20, n. 10, 2017.

16. DANAEI, G.; et al. Global Burden of Metabolic Risk Factors of Chronic Diseases Collaborating Group (Blood Pressure). National, regional, and global trends in systolic blood pressure since 1980: systematic analysis of health examination surveys and epidemiological studies with 786 country-years and 5.4 million participants. **Lancet**, v. 377, p. 568–577, 2011.

17. CASTRO, M. E.; et al. Necessidades humanas básicas afetadas pela hipertensão arterial e estilo de vida. **Revista Brasileira em Promoção da Saúde**, v. 16, n. 1, p. 21-27, 2003.

18. CACHAPUZ, A. M. **Avaliação do potencial de xerostomia em usuários de antihipertensivo.** 2006. 47f. Dissertação (Mestrado) - Universidade Vale do Rio Verde, 2006.
19. BRONZO, A. L. A. **Procedimentos odontológicos em hipertensos com ou sem o uso de anestésico local prilocaína associada ou não ao vasoconstritor felipressina.** 2005. 85 f. Dissertação (Mestrado em Ciências) – Faculdade de Medicina, Universidade de São Paulo, São Paulo, 2005.
20. BRAGA, T. M. S. Análise das condições facilitadoras de doenças cardiovasculares. In: Sobre o comportamento e cognição. **Arbytes**, v. 3, p. 49-56, 1997.
21. ARADA, Juan Marques Garcia. Innovation of the chemical-sanitary industry and biotechnology in health: in search of a sustainable practice. **Periódicos Brasil.Pesquisa Científica**. v.1, n.1, p. 01-08, 2019.
22. ARAÚJO, I. C.; ARAÚJO, M. V. A. **Etiopatogenia Da Hipertensão Arterial, Riscos e Condutas Preventivas a Serem Empregadas no Atendimento Odontológico a Pacientes Hipertensos.** 2001. Seminário (Disciplina de Fundamentos de Clínica Integrada) - Faculdade de Odontologia, Universidade Federal Do Pará, Belém-Pará, 2001.
23. LEMOS, Pedro Gabriel Silva, DUQUE, Antônio Moraes, MACHADO, Carla Nery. Componentes que afetam o medo no tratamento dentário em adultos: um estudo seccional. *Brazilian Journal of Implantology and Health Sciences*. v.1, n.4, p. 41-54, 2019. DOI: [10.36557/2674-8169.2019v1n4p41](https://doi.org/10.36557/2674-8169.2019v1n4p41)
24. PARAGUASSU, Éber Coelho et al. Qualidade de vida e satisfação em usuários de prótese total no estado do Amapá, Brasil. *Revista Eletrônica Acervo Saúde*, n. 27, p. e876-e876, 2019
25. ANDRADE, E. D. Cuidados com o uso de medicamentos em diabéticos, hipertensos e cardiopatas. **Anais do 15º Conclave Odontológico Internacional de Campinas**, n. 104, p. 230, 2003.
26. Jamille dos Passos Lacerda e Karina da Silva Figueira. Retirement, elderly health and worker health: integrative review of Brazilian production. **Periódicos Brasil.Medicina e Ciências da Saúde**. v.1, n.1, p. 11-26, 2019.
27. PARAGUASSU, Éber Coelho; DE CARDENAS, Anneli Mercedes Celis. Systematic review of current medical literature on the impact of oral health on quality of life. *International Journal of Advanced Engineering Research and Science*, v. 6, n. 3, 2019.

28. Jamille dos Passos Lacerda. Análise fotoelástica da distribuição do estresse produzido na mandíbula pela simulação do esforço mastigatório em overdenture com suporte de muco e prótese total. **Periódicos Brasil.Odontologia**. v.1, n.3, p. 32-41, 2019