

DETECTING MEDICAL PROBLEMS IN BRAZILIAN DENTAL PATIENTS

Detecção de problemas médicos em pacientes odontológicos

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Abstract

OBJECTIVE: The purpose of this study was to survey dental patients to determine the medications they were using and to compile information on their medical histories. Information about medications used along with a current medical history on all dental patients is essential for safe dental practice. Dental patients presenting with chronic diseases have been on the rise. Drug interactions and adverse drug reactions are likely to occur in an ever-growing polypharmaceutical environment. **MATERIALS AND METHODS:** Information regarding medical conditions and medication use was obtained from interview by a dentist of 230 dental patients. Epidemiological data, medical histories and/or drug therapies and allergies were evaluated. The data was analyzed to assess any potential oral side-effects, pertinent drug interactions, or potential complications of dental treatment. **RESULTS:** At least one significant medical problem was reported by 26% of the patients. Allergies to different drugs (12%) and cardiovascular disorders (8%) were the items most frequently mentioned. Seventeen per cent of the patients reported taking medications. The most prevalent drugs were antihypertensives, antiarrhythmic and psychotherapeutic agents. **CONCLUSION:** This study revealed that medical problems and allergies of dental patients are very common. Approximately a quarter of dental patients attending for routine dental care reported at least one relevant medical problem. Allergies to different drugs, cardiovascular disorders and depression were the items most frequently reported. The prevalent drugs used were antihypertensives, antiarrhythmic and psychotherapeutic agents. In order to protect the safety of a patient it is prudent for a dental practitioner to obtain a current and thorough medical history before proceeding with planned treatment.

Keywords: Drug interactions; Medical history; Cardiovascular disease; Allergies;

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Resumo

OBJETIVO: O objetivo deste estudo foi investigar pacientes odontológicos para determinar os medicamentos que utilizavam e compilar informações a respeito de suas histórias médicas. A informação a respeito de medicação utilizada em todos os pacientes odontológicos é essencial para uma prática clínica segura. O número de pacientes que se apresenta com doenças crônicas tem aumentado. A interação entre drogas e reações adversas são mais prováveis de ocorrer num meio polifarmacêutico crescente. **CASUÍSTICA E MÉTODO:** Informações referentes às condições médicas e medicamentos utilizados foram obtidas pela entrevista de 230 pacientes odontológicos. Dados epidemiológicos, histórias médicas e/ou terapias por drogas e alergias foram avaliadas. Os dados foram analisados para determinar qualquer potencial de efeitos colaterais bucais, interações pertinentes ou complicações potenciais do tratamento dentário. **RESULTADOS:** Pelo menos um problema médico significativo foi relatado por 26% dos pacientes. Alergias a diferentes drogas (12%) e desordens cardiovasculares (8%) foram os itens mais freqüentemente mencionados. Dezesete por cento dos pacientes relataram tomar medicamentos. As drogas mais prevalentes foram anti-hipertensivos, antiarrítmicos e agentes psicoterapêuticos. **CONCLUSÃO:** Este estudo revelou que problemas médicos e alergias em pacientes odontológicos são comuns. Aproximadamente um quarto dos pacientes que procuram atendimento de rotina relata pelo menos um problema médico relevante. Alergias a diferentes drogas, desordens cardiovasculares e depressão foram os itens relatados com mais freqüência. Para proteger a segurança dos pacientes, é prudente para o cirurgião-dentista obter uma história cuidadosa e atualizada, antes do início do tratamento planejado. **Palavras chave:** Interações entre drogas; História médica; Doenças cardiovasculares; Alergias.

Introduction

Information about medications used along with a current medical history on all dental patients is essential for safe dental practice. Dental patients with cardiovascular diseases, especially hypertensive and ischemic heart disease, i.e., have been increasing. Performing dental procedures on these patients could bring about the acute exacerbations of preexisting cardiac diseases. Anxiety, tension, pain, and discomfort during dental treatment and the catecholamines contained in local anesthetic solutions are thought to be causative factors (1). Other examples include the need for antibiotic cover in patients at risk from infective endocarditis (2) and uncontrolled diabetes mellitus (3). These patients may have complications with healing or infections.

Drug interactions, as well as adverse drug reactions are likely to occur in this polypharmaceutical setting. In order to be aware of the likelihood of interactions of the drugs prescribed by the dentist, drugs-prescribed by the physician, and drugs that are self-administered, it is important that the dentist is continually informed of the medical and pharmacologic status of each patient (4). Brindley et al. (5) reported that approximately a quarter of dental patients attending for routine

dental care were taking prescribed medication. The majority of these drugs have significant implications for the general dental practitioner.

Respiratory disorders in the upper respiratory tract are most often part of a continuous pathological process of long standing. Three clinical syndromes, with increasing severity can be described: breathing with the mouth open, snoring and sleep apneal hypopnea syndrome. The signs and symptoms may be recognizable in the dental practice. Besides the medical approach itself, the treatment sometimes is surgical, always orthopedic: the earlier it is initiated the more effective, simple and unrestraining it is (6). The early diagnosis and prevention of these pathologies are the focus attention on primary dental care about respiratory disorders.

Further about respiratory disorders, a limited number of asthmatics show bronchial hyperresponsiveness to specific agents such as chemical sensitizers in the workplace, aeroallergens, aspirin, NSAIDs, and sulfiting agents (sulfur dioxide and the sodium and potassium salts of bisulfite, sulfite, and metabisulfite) (7). Sodium metabisulfite is present in local anesthetic solutions with adrenaline vasoconstrictor (8). Investigations suggest that sulfiting agents can induce

wheezing and steroid-dependent asthmatic patients are most at risk (9). Thus, dentists have been warned not to use local anesthetics with adrenergic vasoconstrictors in asthmatic patients (10).

Rheumatoid arthritis is a chronic, inflammatory, systemic disease affecting the musculoskeletal connective tissue of the body with a strong predilection for the joints. The temporomandibular joint (TMJ) is commonly affected with rheumatoid arthritis in adults and children, but it is usually among the last joints to be affected (11). In case TMJ is involved, it is associated with long disease duration and previous pain on jaw opening (12). Poor oral health is a risk factor for systemic infection, and especially when patient is immunosuppressed through the use of corticoids (13). If present, radiographic changes in these patients are: cortical erosions and subcortical cysts (14).

Sodium hypochlorite (NaOCl) is the most popular irrigation solution used in root canal treatment but it is known to be an irritant to vital tissues. It is an effective solvent of both necrotic and vital tissues, which makes it toxic to the surrounding tissues. Although several patients claim NaOCl allergy and the allergic potential of NaOCl has been described in the medical literature, only one case of known hypersensitivity to NaOCl has been reported in the dental literature (15). It is probable that the patients who claimed have NaOCl allergies had experience with the irritant characteristic of NaOCl, but not a really case of allergy. However, it is important to emphasize to the patient to protect the eyes and take care not to force inadvertently it out the apex of tooth.

The purpose of this study was to survey dental patients to determine the medications they were using and to compile information on their medical histories.

Materials and methods

From March 2005 to January 2006, information regarding medical conditions and medication use was obtained from interviews of 230 dental patients conducted by a dentist at

the Joinville Public Health Assistance facility in Santa Catarina, Brazil. Epidemiological data (patient gender and age, smokers, alcohol intake), medical histories and/or drug therapies and allergies were evaluated. The data was analyzed to assess any potential oral side-effects, pertinent drug interactions, or potential complications of planned dental treatment.

Results

Among the 230 patients, were 81 men and 149 women resulting in a female-to-male ratio of 1.8:1. The average age was 25 years (ranging from 5 to 73 years-old); with 14% (33 patients) being smokers, and alcohol often intake (one or more times per week) was observed in 16% (37 patients). In all, 26% of these patients reported at least one medical problem and / or allergy. Allergies, cardiovascular disorders, depression, and gastrointestinal problems were the items most frequently mentioned (Table 1).

Seventeen per cent of the patients reported taking medications. The most prevalent drugs were antihypertensives, antiarrhythmic and antidepressants (psychotherapeutic agents). Dipyron, penicillin, sodium hypochlorite, non-steroidal anti-inflammatory agents (NSAIDs), sulfas, tramadol and paracetamol (acetaminophen) accounted for all claimed drug allergies (12%) (Table 2). Association between age group and medical records is shown in Table 3.

Several studies revealed that medical problems of dental patients are very common: 27.7% (16); 37.2% (17); 30.6% (18). Although the sample in the present study was small and women represented the majority among the subjects, our findings were similar to such studies, recording a significant medical problem in 26% of dental patients. Allergies and cardiovascular disease were the items most frequently mentioned. Others reported diseases were: respiratory problems, gastrointestinal problems, endocrine disorders, disorders of the central nervous system and musculoskeletal disorders.

Table 1

Medical records	N. patients
Medical problems	60 (26%)
At least one drug allergy	28 (12%)
Cardiovascular disease	19 (8%)
Hypertension	16
Myocardial infarction	3
Arrhythmia	1
Cerebrovascular accidents	1
Depressive disorders	9 (4%)
Gastrointestinal problems	6 (3%)
Hypothyroidism	3 (1%)
Epilepsia	3 (1%)
Type 2 diabetes mellitus	2
Respiratory problems	1
Rheumatoid arthritis	1
Thrombocytopenic purpura	1
Fibromyalgia	1

Table 2.

Medication information's	N. patients
Taking medications	38 (17%)
Antihypertensives and Antiarrhythmic agents	18 (8%)
Psychotherapeutic agents	14 (6%)
Analgesics	6 (3%)
Non-steroidal anti-inflammatory	4 (2%)
Antibiotics	3 (1%)
Levothyroxine	3 (1%)
Hypoglycemic agent	1 (0.5%)
Drugs allergies	
Dipyrone	11 (5%)
Penicillin	8 (3%)
Sodium hypochlorite	5 (2%)
Non-steroidal anti-inflammatory (including ASA)	5 (2%)
Sulfas	1 (0.5%)
Tramadol (opiate narcotic analgesic)	1 (0.5%)
Paracetamol (acetaminophen)	1 (0.5%)

Table 3. Association between age group and medical records

Age group (n. patients)	5-10 (30)	11-18 (52)	19-30 (74)	30-55 (67)	Over 56 (7)	Women (149)	Men (81)	Total (250)
Cardiovascular disease	0	0	0	13	6	13	6	19
Respiratory problems	0	0	1	0	0	1	0	1
Gastrointestinal problems	0	2	1	3	0	4	2	6
Type 2 diabetes mellitus	1	0	0	1	0	2	0	2
Rheumatoid arthritis	0	0	0	1	0	1	0	1
At least one drug allergy	1	5	11	10	1	22	6	28
Hypothyroidism	0	0	0	3	0	3	0	3
Epilepsia	0	0	2	1	0	2	1	3
Thrombocytopenic purpur	1	0	0	0	0	1	0	1
Depressive disorders	0	1	2	4	2	7	2	9
Fibromyalgia	0	0	0	1	0	1	0	1

Discussion

Patients with a history of systemic disease, especially chronic disease, must be carefully evaluated. The health of these patients may influence the issues of bleeding, infection and delay healing. Moreover, psychological stress, anesthesia and daily pharmacological therapy may aggravate these complications.

The high prevalence of cardiac disease in the population makes it one of the most common medical problems encountered in dental practice. In such patients, systemic management during dental treatment should include the application of psychosedation, proper selection of vasoconstrictor in the local anesthetic, and control of blood pressure with vasodilating agents (consistent with a medical consultation) and continuous careful monitoring during the procedure (1). Waters (19) offers the following guidelines: "1. Properly assess to the patient; 2. Establish which medications the patient is taking along with the dose and timing and note any potential drug interactions and side effects; 3. Use short appointments (less than one hour), preferably in the morning; 4. Premedication should be considered to alleviate anxiety. The intraoperative use of nitrous oxide and oxygen is also a reasonable strategy for patients with cardiovascular disease, particularly those with ischemic heart disease; 5. Effective local anesthesia is important in order to avoid undue

stress during the appointment as long as the guidelines for the administration of epinephrine are followed. The use of epinephrine impregnated gingival displacement cord should be strictly avoided in patients with cardiovascular disease; 6. For patients with angina pectoris, a fresh supply of nitroglycerin should be available at the time of the appointment. Prophylactic nitroglycerin has been shown to be effective in the prevention of both hypertension and angina pectoris during dental treatment. The use of blood pressure measurements on all patients will help to screen for undiagnosed hypertension and all patients who are potentially hypertensive should be referred for medical evaluation."

Patients with a previous history of hypothyroidism that was being controlled with medications represented 1% of our patients. Studies suggests that medically controlled hypothyroid patients treated with dental implants are not at higher risk of implant failure when compared with matched controls, and that a history of controlled hypothyroidism does not appear to be a contraindication for implant therapy with endosseous implants (20). The lower frequency of complications founded with this surgical procedure maybe allows we extend this conclusion to primary dental care.

It is estimated that 10% of the population will suffer at least one epileptic convulsion in their lives and the global incidence is 0.5% (21). Convulsions are more

frequent in children, 4% of children suffer a convulsion during the first 15 years of life. Luckily these convulsions tend to disappear with age in most children. Approximately 1 out of every 15 patient claims that their convulsions take place after exposure to specific circumstances (blinking light, monotonous sounds, loud noises, video games) (21).

Convulsions can be controlled completely in 60-80% of epileptic patients. In our study it was found that 1% of the total population studied has suffered an epileptic crisis and they were being treated for this condition. It is very important to consider because there are factors, such as stress, that can trigger an epileptic attack (18).

Idiopathic thrombocytopenic purpura (ITP) is the most common acquired bleeding disorder occurring in previously healthy children. The condition is benign and self-limiting, with a high possibility of recovery. Only 15-30% of children with acute ITP develop the chronic form. Clinically, ITP presents with petechia, ecchymoses, hematomas, epistaxis, hematuria, mucocutaneous bleeding, and occasionally, hemorrhage into tissues. Oral manifestations include spontaneous gingival bleeding, petechia or hematomas of the mucosa, tongue or palate (22). In this study, only one pediatric case (female, 10 years old) was diagnosed with ITP. Standard dental treatment should be performed with a platelet count higher than 50,000/mm³. The importance of adequate dental plaque control to prevent inflammation, potential bleeding and infection, as well as the avoidance of acetylsalicylic acid (ASA) in these patients must be emphasized. The pediatric dentist should be aware of the clinical appearance of ITP in order to recognize the condition and successfully manage the patient (22). The best procedure to find a bleeding disorder is a good medical history and family history. If the review of the medical history indicates a bleeding problem, a more detailed history and blood count are needed.

Although only one patient presented with fibromyalgia, it represents one of the most frequent musculoskeletal problems. This condition, associated with widespread pain, is characterized by multiple areas of tenderness, as well as symptoms such as tiredness, limb stiffness, depression and a lack of adequate

sleep (23). Patients suffering from fibromyalgia can also demonstrate the same clinical features as temporomandibular disorders or myofascial pain. Dentists should be aware that certain dental treatments will not be effective in patients suffering from temporal and masseter pain if fibromyalgia has been diagnosed (23).

In this study, 5% of the dental patients reported having a dipyrone allergy; 3% a penicillin allergy and 2% an NSAID allergy. These findings emphasize the importance of obtaining an adequate drug history prior to commencing dental treatment. Penicillins are the antibiotics generally chosen to prevent endocarditis, while cephalosporins, clindamycin, azithromycin or clarithromycin are indicated for patients with penicillin allergies (2). Different studies have shown that 5 to 10% of patients taking penicillin will have an allergic reaction, and 0.04%-0-2% will suffer an anaphylactic shock (24). In a study of 151 deaths in the world caused by anaphylactic shock to penicillin (25), death was shown to have occurred 15 minutes after administration of the drug in 85% of cases, and the allergic reaction had commenced immediately after administration in 50% of cases. At the same time, it is known that about 90% of these patients are not truly allergic and could safely receive beta-lactam antibiotics (26). Most of the reactions reported by children were probably attributable to infectious diseases or to interactions between drugs and infectious agents rather than to hypersensitivity to beta-lactams (27). NSAIDs are the second most important cause of drug anaphylaxis after penicillin in hospitalized patients, whereas they are the leading cause in ambulatory patients seen in emergency services (28). However, isolated periorbital angioedema constitutes the most frequent manifestation of NSAID intolerance (29). Antihypertensives and antiarrhythmic agents, and psychotherapeutic agents were the medications more usual among the patients in this study. Co-administration of local anesthetics solutions (with adrenergic vasoconstrictors) with monoamine oxidase inhibitors (MAOIs), non specific beta adrenergic blockers, tricyclic antidepressants, phenothiazides and cocaine abusers may result in subtle hypertension. Among several local anesthetics, 3% prilocaine with 0.03 U/ml felypressin must be used in these patients (30).

Conclusion

This study revealed that medical problems and allergies of dental patients are very common. Approximately a quarter of dental patients attending for routine dental care reported at least one relevant medical problem. Allergies to different drugs, cardiovascular disorders and depression were the items most frequently reported. The prevalent drugs used were antihypertensives, antiarrhythmic and psychotherapeutic agents. In order to protect the safety of a patient it is prudent for a dental practitioner to obtain a current and thorough medical history before proceeding with planned treatment.

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Recebido em 30/07/2005; aceito em 15/09/2005
Received in 07/30/2005; accepted in 09/30/2005