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THE INCIDENCE OF SYSTEMIC DISEASES IN DENTAL PRACTICE AND THE READINESS OF DENTISTS IN THEIR MANAGEMENT

(ANGKA KEJADIAN PENYAKIT SISTEMIK PADA PRAKTEK DOKTER GIGI DAN KESIAPAN DOKTER GIGI DALAM PENATALAKSANANNYA)

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ABSTRACT

Systemic disease is a medical condition that can affect dental care and cause complications during and after dental treatment, so it needs special attention and treatment by dentists. Systemic diseases consist of heart disorders and hypertension, diabetes, blood disorders, and others. The purpose of this study is to determine the readiness of dentists to treat patients with systemic diseases. The study was conducted by distributing questionnaires in an electronic form to dentists in West Bandung Regency (KBB) and its surroundings in the form of experience in finding patients with systemic diseases in practice and readiness in their management. Questionnaires were obtained from 83 dentists, with the results describing that 98.8% of dentists had treated patients with systemic diseases. Systemic diseases that were often found in practice are hypertension (96.2%), then diabetes (89.2%), heart disorders

(65.1%), asthma (47%), allergies (45.8%), stroke (37.3%), blood disorders (27.7%), kidney disorders (25.3%), thyroid disorders (24.1%), liver disorders (14.5%), and others (2.4%). The results show that dentists in the KBB area were well-prepared to treat patients with systemic diseases. Dental and oral care in patients with systemic diseases were found in daily practice. Based on the research results, most dentists have encountered patients with systemic diseases and are ready to treat patients with controlled systemic diseases. However, when the systemic disease conditions are not governed, the dentist chooses to consult the patient with a general practitioner or internal medicine specialist first. Most dentists in the West Bandung Regency and its surroundings have found patients with systemic diseases who were well-prepared for their management plans at their practice sites.

Keywords: dentist; dental treatment readiness; systemic disease

ABSTRAK

Penyakit sistemik merupakan suatu kondisi medis yang dapat berpengaruh terhadap perawatan gigi dan dapat menyebabkan terjadinya komplikasi baik saat perawatan maupun setelah perawatan gigi, sehingga perlu perhatian dan penanganan khusus oleh dokter gigi. Penyakit sistemik terdiri dari kelainan jantung dan hipertensi, diabetes, kelainan darah, dan lain-lain. Tujuan dari penelitian ini yaitu untuk mengetahui kesiapan dokter gigi dalam menangani pasien dengan penyakit sistemik. Penelitian ini dilakukan dengan cara menyebarkan kuesioner berupa formulir elektrik pada dokter gigi di daerah Kabupaten Bandung Barat (KBB) dan sekitarnya berupa pengalaman dalam menemukan pasien dengan penyakit sistemik di tempat praktek serta kesiapan dalam penatalaksanaannya. Kuesionar didapat dari 83 dokter gigi, dengan hasil menggambarkan sebanyak 98,8% dokter gigi pernah melakukan perawatan pada pasien dengan penyakit sistemik. Penyakit sistemik yang sering ditemukan di tempat praktik adalah hipertensi (96,2%), lalu diabetes (89,2%), kelainan jantung (65,1%),

asma (47%), alergi (45,8%), stroke (37,3%), kelainan darah (27,7%), gangguan ginjal (25,3%), kelainan tiroid (24,1%), gangguan hepar (14,5%), dan lainnya (2,4%). Hasil menunjukkan bahwa dokter gigi di daerah KBB memiliki kesiapan yang cukup baik dalam menangani pasien dengan penyakit sistemik. Perawatan gigi dan mulut pada pasien dengan penyakit sistemik merupakan merupakan hal yang dapat ditemukan pada praktek sehari-hari. Berdasarkan hasil penelitian, sebagian besar dokter gigi pernah menemukan pasien dengan penyakit sistemik dan mereka memiliki kesiapan untuk melakukan perawatan pada pasien dengan penyakit sistemik yang terkontrol. Namun, jika kondisi penyakit sistemik tidak terkontrol maka dokter gigi memilih untuk mengkonsultasikan pasien tersebut ke dokter umum atau spesialis penyakit dalam terlebih dahulu. Dokter gigi di daerah Kabupaten Bandung Barat dan sekitarnya sebagian besar pernah menemukan pasien dengan penyakit sistemik di tempat praktek sudah memiliki kesiapan yang cukup baik untuk rencana penatalaksanaannya.

Kata kunci: *dokter gigi; kesiapan; penyakit sistemik; perawatan gigi*

INTRODUCTION

Systemic disease is a medical disorder that can affect the whole body. Systemic diseases include disorders of hematology, metabolic-endocrine, cardiovascular, coagulation, kidney, and others. Patients with systemic diseases have complex problems requiring special attention during dental and oral care, especially when tooth extraction.[1,2]

The problem usually arises with how a dentist can perform the treatment safely and with as little risk as possible. For this reason, a dentist must have an adequate understanding of systemic diseases or disorders and must know with certainty the patient's general health and condition for action.[1]

Systemic conditions also affect dental procedures. Many adult and geriatric patients have systemic medical diseases, with slightly lower rates in young patients. The world population is estimated at 7 billion, with a large proportion of the elderly. Therefore it is predicted to produce individuals with medical compromises

which may affect oral health and dental care. Dental management in patients with these systemic disorders can be problematic regarding oral complications, dental care, and emergency care.[3,4]

The first step in managing a patient with a systemic disease is obtaining a thorough medical history, and the second is for the physician to fully understand the significance of the disease that the patient may have. Each identified condition may affect dental care in a unique way, such as a drug prescribed post-intervention in certain patients with medical compromise may cause problems during the administration of local anesthetics or may interact with pain medications prescribed afterward.[5-8]

Dental and oral care in patients with systemic diseases is a critical aspect of the dental practice, so if neglected, it can lead to adverse consequences.[14,15] Therefore, dentists need to understand the potential complications that can result from dental treatment in patients with systemic disorders when either pre-treatment or post-treatment, or emergency treatment is indicated. Patients with medical compromise should only be treated in a hospital setting where, if an emergency occurs, it can be treated promptly and controlled.[5-8]

Patients with systemic disease may experience oral signs, including ulceration, infection, hyperpigmentation, and benign to malignant neoplasms. Likewise, chronic conditions such as dyslipidemia and asthma are independently associated with oral leukoplakia. One of the most common systemic disorders is diabetes mellitus (DM), a chronic disease complex due to carbohydrate metabolism disturbances due to insulin deficiency, and is characterized by blood sugar levels that are higher than usual.[9]

Manifestations of DM in the oral cavity are xerostomia, candidiasis, caries, gingivitis, periodontitis, periapical abscesses, and dry mouth.[10] In DM patients, controlled blood sugar levels play an essential role in managing periodontal disease. Periodontitis in DM patients who are controlled has a positive response to non-surgical therapy, periodontal surgery, and maintenance which is the same as in people without DM.[10-13]

Appropriate and accurate evaluation is needed in determining the systemic condition of patients with medical compromise, which is focused on the pathophysiology of the disease, signs, and symptoms, laboratory test results, medical therapy the patient is currently undergoing, and recommendations from related specialists, to be able to carry out preparatory care properly and safe and avoid complications that may occur.[1,2], In

this case, the report discusses the incidence of systemic diseases in dental practice and the readiness of dentists in its management.

METHOD

This research was conducted by distributing questionnaires in an electronic form to dentists in West Bandung Regency (KBB) and its surroundings through experience in finding patients with systemic diseases in practice and readiness in their management. The questionnaires obtained were then counted and analyzed for later presentation.

RESULT AND DISCUSSION

Thoroughly answered questionnaires were obtained from 83 dentists at KBB. Based on the results of the assessment, it is known that around 98.8% of the dentists at KBB have had patients with systemic diseases (Figure 1). It is in line with the research conducted by Poojaashree and Subramania, in which it is pretty common to find patients with systemic diseases in dental practice. So this is an important problem for every dentist. A dentist must understand the relationship between dental and oral disease and systemic disease.[16]

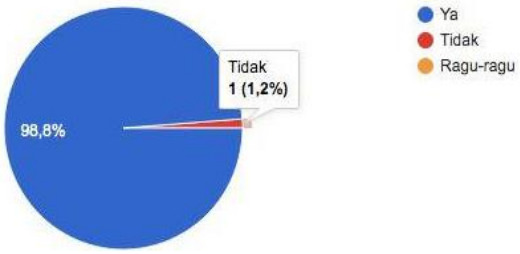
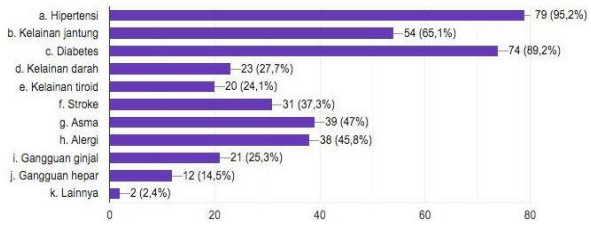


Figure 1. Percentage of the dentist who has seen a patient with a systemic disease.

Most systemic disorders ever found in dentistry practices were hypertension (96.2%), while other cases were diabetes (89.2%), heart disorders (65.1%), asthma (47%), allergies (45.8%), stroke (37.3%), blood disorders (27.7%), kidney disorders (25.3%), thyroid disorders (24.1%), liver disorders (14.5%), and others (2.4%). Hypertension is a systemic disease that is the most significant cause of morbidity and mortality worldwide (Table 1).[17]

Table 1. Percentage of systemic disorders in dental practice



Based on Table 1 above, it can be seen that hypertension is the most common systemic disease found in dental practice; therefore, blood pressure checks are vital for patients who are going to have a tooth extraction procedure. Checking blood

pressure should be done in all patients, not those with hypertension. It was because several factors affect the growth of blood pressure, such as gender, age, type of activity, family history, weight, and emotional or psychological state.[18]

The action taken by dentists when they find patients with a history of systemic abnormalities is first to consult a general practitioner or internal medicine as much as 88% (Figure 2). Consultation with the patient's doctor is an integral part of the evaluation. Before treatment, a dentist must know the patient's physical and emotional status. In patients who do not understand the problem they are experiencing, dentists can ask for a list of drugs consumed so that it can help to find out the systemic disease that the patient is experiencing, then further consultation with the patient's doctor is needed.[14]

Figure 2. Percentage of actions taken when finding patients with a history of systemic disorders.

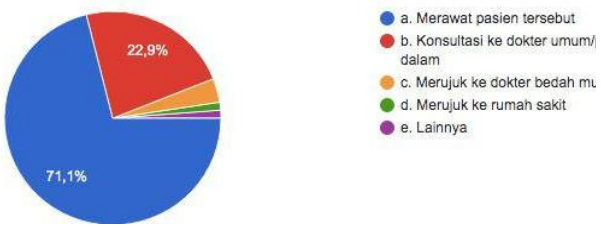


Figure 3. Percentage of action when finding patients with controlled systemic disorders.

Figure 3 shows that if dentists find a patient with a controlled systemic disorder, 71.1% of them will still treat the patient.

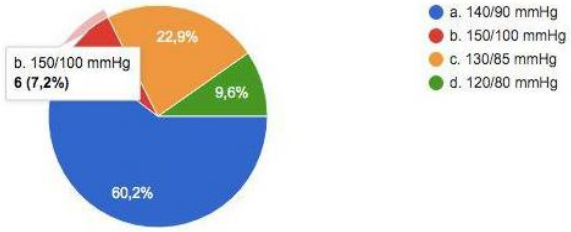


Figure 4. Percentage of tooth extractions ever performed in patients with maximal high blood pressure.

Tooth extraction is an action that is often performed by dentists. Before administering dental treatment or tooth extraction, a physical examination should be conducted at the initial visit to obtain an overview of the patient's vital signs. Examination of critical symptoms is a way to provide an overview of the condition of the body's performance functions. These vital signs include blood pressure, heart rate, respiratory rate, and body temperature. Determination of blood pressure is essential in patients who will do tooth extraction[18-19]

Based on the information in Figure 4, it is known that most dentists (60.2%) will perform an extraction procedure with a

maximum high blood pressure of 140/90 mmHg, and only 7.2% will dare to perform a tooth extraction procedure with a blood pressure reaching 150/100 mmHg. (7.2%), while the rest will take revocation if the blood pressure is below 130/85 mmHg. It is in line with the patient risk classification based on the American Society of anaesthesiologists (ASA), where the patient's risk status is classified into ASA I, ASA II, ASA III, and ASA IV. For ASA I patients with normal blood pressure 120/80 – 130/89 mmHg, no systemic disease), routine dental care can be provided. ASA II patient, with stage 1 hypertension, with blood pressure 140/90 - 159/99, medically stable, no limitation of physical activity, it is necessary to monitor blood pressure after local anesthesia containing adrenaline, and routine dental care can be carried out.20 As for other ASA, special treatment is required before tooth extraction is carried out.

Stage 2 hypertensive patients with blood pressure 160/100-179/109 mmHg, medically unstable, and with limited physical activity tolerance (ASA III) need to limit vasoconstrictors in the local anesthetic used. Stage 2 hypertensive patients, with blood pressure 180/110-209/119 mmHg, medically unstable, and minimal physical activity (ASA IV), are at risk for treatment with local anesthetics containing vasoconstrictors only nonstressful emergency dental treatment can be provided.[20]

Stage 2 hypertensive patients with a blood pressure of 210/120 mmHg or more cannot accept physical or emotional stress. Usually, for hypertensive patients who are immediately life-threatening (ASA IV), all emergency dental procedures must be considered that dental therapy is genuinely beneficial compared to complications arising from hypertension.[20]

Blood pressure measurement is not only performed on patients suspected of hypertension but can be performed on all patients. This examination can also prevent unwanted or detrimental events at any time or after dental treatment. Factors that influence changes in blood pressure include gender, age, type of activity, family history, weight, and emotional or psychological state. In dentistry, the goal of managing and preventing hypertension is to provide care with appropriate preventive and curative strategies according to the patient's physical condition and emotional ability to receive and respond to treatment so that further complications due to hypertension during dental treatment can be avoided.[18-20]

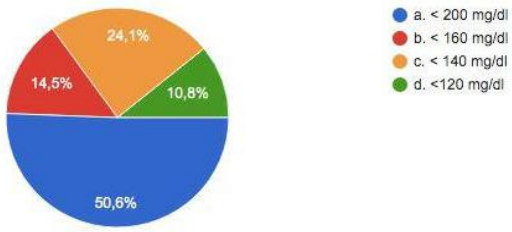


Figure 5. Percentage of tooth extraction procedures that have been performed on patients with transient blood sugar levels.

Based on Figure 5, it is known that 50.6% of dentists perform a tooth extraction in patients with blood sugar levels <200 mg/dl (50.6%); the rest will only remove them when blood sugar levels <160 mg/dl (14.5%), <140 mg/dl (24.1%) and <120 mg/dl (10.8%). The participants performed the most retraction actions with blood sugar levels <200 mg/dl.

Tooth extraction in diabetic patients requires special attention because high glucose in blood vessels will cause complications during the bleeding process during extraction. Therefore, special attention is needed regarding extraction treatment in patients with diabetes. Diagnostic criteria for diabetes mellitus, according to the American Diabetes Association 2010, are classic symptoms of DM with blood glucose > 200 mg/dl. Temporary blood glucose results from a momentary check one day without paying attention to the time of the last meal. Signs and symptoms are usually polyuria, polydipsia, and weight loss without cause.[21,22]

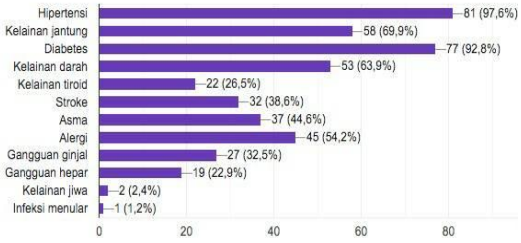
Dental treatment is better postponed if the patient has a sugar level of <70 mg/dl or >150 mg/dl. One study revealed several conditions that occur after extraction in diabetic patients. Patients with blood sugar levels of 170–220 mg/dl have complications in the form of pain and swelling around the extraction area. Other studies state that for blood sugar levels of 220-250 mg/dl, a burning sensation around the alveoli is the main obstacle in healing internal wounds in patients with blood sugar levels of around 250 mg/dl who tend dry sockets.[23,24]

Extraction performed on diabetic patients is a complex problem because it is related to complications that diabetic patients will experience after tooth extraction, such as bleeding and a long wound healing process. Tooth extraction in patients who have diabetes is not as simple as in other normal patients. There are clinical procedures that must be known and carried out before the doctor finally decides to take action.[25]

Response to treatment depends on several factors, such as dental health, diet, smoking habits, proper dental care and follow-up, oral health, and regular diabetes control. Controlled sugar levels play an essential role in the treatment of periodontal disease. In general, patients with systemic diabetes mellitus respond to treatment in the

same way as patients who do not have diabetes mellitus. Periodontitis in patients with controlled diabetes mellitus has the same positive response to non-surgical therapy, periodontal surgery, and maintenance as people without diabetes mellitus.[1]

Table 2. Participants' knowledge of the risks of tooth extraction in patients with systemic disorders.



Based on Table 2, the percentage level of knowledge of dentists regarding the risk of tooth extraction in patients with systemic disorders varies, including hypertension (97.6%), diabetes (92.8%), heart disorders (69.9%), blood disorders (63.9%), allergies (54.2%), asthma (44.6%), stroke (38.6%), kidney disorders (32.5%), thyroid disorders (26.5%), liver disorders (22.9%), mental disorders (2.4%) and infectious infections (1.2%).

Participants have a good level of knowledge regarding the risk of extraction in patients with hypertension. Dentists must have an adequate understanding of systemic diseases and disorders and need to know with certainty whether the patient's general health is safe enough to take action, especially regarding surgery. Dentists need to know about various medical conditions, risks, and treatment management in patients with systemic disorders. Therefore, every dentist must take a proper medical history and carry out a general examination so that he can treat the patient in a good way and thereby prevent medical emergencies from occurring.[26]

Dental care for patients with medical compromise is the responsibility of the dentist who treats them and the dental clinic staff/paramedics. Examples include treating patients with kindness and compassion, regardless of the nature of the patient's condition, and carefully evaluating the patient's dental and oral health. And consulting with the relevant specialist doctor, if necessary, to find out the patient's medical status before carrying out treatment or dental procedures, especially treatment that is invasive procedures, obtaining the patient's medical history and current medical status, and always monitoring the patient's vital signs at every visit to the dentist, provide proper dental care according to the competence of the dentist, as well as carrying out appropriate procedures according to SOPs including administering prophylactic antibiotics, reducing stress and pain, controlling infection, and maintaining OH so that

possible complications can be avoided.[1]

The management of patients who have systemic disease requires a thorough medical history of the patient. Dentists must recognize and have appropriate knowledge about dental and oral health care and potential interactions with the patient's medical condition.[16]

Based on the research results, dentists have encountered patients with systemic disorders and are ready to treat patients with controlled systemic disorders. However, if systemic abnormalities were not managed, the patient is consulted with a general practitioner or internal medicine specialist.

CONCLUSION

Based on the study results, dentists in West Bandung Regency and its surroundings have seen patients with systemic disorders and are ready to treat them with systemic disorders. As a dentist, it is necessary to pay attention to the patient's medical history and carry out an appropriate general examination to avoid complications or medical emergencies that may occur.

CONFLICT OF INTEREST

We declare no potential conflict of interest in the scientific articles we write.

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