

研 究

Systemic conditions among inpatients
for presenting periodontal treatment

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Abstract : A total of 161 inpatients, 90 males and 71 females, aged 12-80 years, were seen at the Department of Periodontology upon referral from Iwate Medical University Hospital and the following information was obtained from each patient's medical conditions based on the interview with inpatients and the data from physicians at first visit : (1) age, (2) sex, (3) medical problems. The medical problems were divided into following categories ; cardiovascular, respiratory, neuropsychiatric, digestive, genitourinary, metabolic disease, muscle, joint, and bone, endocrine, hematologic, dermatologic and eye, ear, nose, and throat problems. The age was also divided into four groups : 10-20, 21-40, 41-60 and 61-80. The number of cardiovascular disorder was reported by 51, 1 in the age group of 21-40, 28 in the age group of 41-60 and 22 in the age group of 61-80. Neuropsychiatric disorder was next in reported frequency (31), followed by digestive and metabolic disorders (29 respectively). Other disorders were reported by less than 20 for each condition. Four diseases above mentioned were reported in 63.1% of all medical problems. Hypertension was reported in 27.5% (14 of 51) in cardiovascular disorder, and hepatitis was in 31.0% (9 of 29) in digestive disorder. Diabetes mellitus was represented in 68.9% (20 of 29) in metabolic disorder, and cerebral infarction was 22.6% (7 of 31) and schizophrenia was 32.3% (10 of 31) in neuropsychiatric disorder.

The majority of the types of systemic conditions were in 41-60 age group with the highest incidence of all age groups. The highest incidence of inpatients with single and two medical problems among inpatients was in 41-60 age group (59.5% and 58.8%), but the incidence of inpatients with three and over medical problems among inpatients was the same in both 41-60 age group and 61-80 age group (43.8% respectively).

In this study, the information obtained from medical conditions for inpatients based on the interview with inpatients and on the data from physicians seems to be valid for every specific condition rather than that information obtained from a "patient-provided" history.

Key words : systemic conditions, inpatients, periodontal disease, interview with inpatients, data from physicians

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Table 1. Number and percentage of inpatients by age group and sex

Age group	Male	Female	Total (%)
10-20	3	6	9 (5.6%)
21-40	10	8	18 (11.2%)
41-60	50	43	93 (57.8%)
61-80	27	14	41 (25.4%)
Total	90	71	161

Introduction

Improvements in lifestyles, habits, and medical care have enhanced human longevity. They have also led to the creation of a population with chronic health problems that may require special precautions in dental therapy¹⁾. The frequency of medical problems, in a given patient population, is related to age²⁻⁶⁾ and possibly socioeconomic background⁷⁾, but is not related to sex⁴⁾.

The patient's demands for tooth preservation with increasing age have also resulted in comprehensive periodontal therapy for elderly patients.

In a previous study⁶⁾, the authors surveyed outpatients requiring extensive therapy referred to the Department of Periodontology, School of Dentistry, Iwate Medical University. Patients were interviewed concerning past and present systemic conditions and their systemic conditions were recorded. Because differences according to sex were minimal, data for male and female were combined. Of 302 patients, 40-49, 50-59, and 60-78 year age group, 41.7% had present illness, with a marked increase in the incidence of systemic factors in the 60-78 year age group. In the present medical conditions and even when the past and present medical conditions were combined, cardiovascular

abnormalities were the most prevalent in any age group. The number and percent of patients with present disease problems increased with age and those free from disease problems, at present as well as in the past, decreased with age. The number and percent of patients affected by two and over systemic disorders, including both the present and past illness increased with age.

The present report is based on a survey of male and female inpatients referral from Medical center at Iwate Medical University and the aim of this study is to document the types of systemic conditions and frequency of patients with single and multiple medical problems among patients studied by age group.

Material and Methods

Background information on medical history was obtained for 161 inpatients (90 males ; 71 females) referred for various periodontal conditions at the Department of Periodontology, School of Dentistry, Iwate Medical University. Inpatients were interviewed concerning present illness and were confirmed concerning their present ones on the basis of written medical histories coupled with data from their physicians. The following information was obtained on the basis of each patient's record and data from the patient's physicians : (1) age, (2) sex, and (3) medical problem(s). The medical problems were divided into several categories : cardiovascular, neuropsychiatric, digestive, metabolic, genitourinary, respiratory, endocrine, muscle, joint, and bone, hematologic, dermatologic and eye, ear, nose and throat problems. The age factor was also divided into four groups : 10-20, 21-40,

Table 2. Number and percentage of various types of systemic condition by sex

Types of systemic condition	Male	Female	Total (%)*
Cardiovascular	32	19	51 (22.9%)
Hypertension	9	5	14
Angina pectoris	5	5	10
Valvular	4	3	7
Aneurysms of the aorta	3	3	6
Myocardial infarction	3	1	4
Others	8	2	10
Neuropsychiatric	20	11	31 (13.9%)
Schizophrenia	5	5	10
Cerebral infarction	5	2	7
Others	10	4	14
Digestive	17	12	29 (13.1%)
Hepatitis	6	3	9
Cancer	5	3	8
Liver cirrhosis	3	2	5
Others	3	4	7
Metabolic	18	11	29 (13.1%)
Diabetes mellitus	14	6	20
Hyperlipidemia	3	3	6
Gout	0	2	2
Others	1	0	1
Eye,ear,nose and throat	13	7	20 (9.0%)
Genitourinary	6	9	15 (6.8%)
Hematologic	11	4	15 (6.8%)
Muscle, joint and bone	6	6	12 (5.4%)
Dermatologic	3	8	11 (4.9%)
Respiratory	0	6	6 (2.7%)
Endocrine	1	2	3 (1.4%)
Total	127	95	222

*Parenthesis denotes the percentage of number of various types of systemic condition to total number of ones.

41-60, and 61-80.

Results

Table 1 presents the number and percent of all inpatients examined by age groups and sex. The age group with the highest incidence (57.8%) was 41-60 years of age. The second was 61-80 years of age (25.4%), followed by 21-40 years of age (11.2%) and 10-20 years of age (5.6%). A percentage of males of total patients in any age group except 10-20 years of age was higher than females.

Table 2 shows the total number of various

types of systemic conditions by sex in 161 patients. The condition with the highest incidence was cardiovascular disorders with 22.9% of all systemic conditions. A majority of the cardiovascular disorders were hypertension followed by angina pectoris, valvular, aneurysm of the aorta, and myocardial infarction. The second most frequently reported condition was neuropsychiatric disorder with 13.9% followed by metabolic disease with 13.1% and digestive disease with 13.1%. The incidence of the rest systemic conditions

Table 3. Number of various types of systemic conditions by age group

Types of systemic conditions	Age group				Total
	10-20	21-40	41-60	61-80	
Cardiovascular	0	1	28	22	51
Neuropsychiatric	3	4	14	10	31
Digestive	0	4	20	5	29
Metabolic	1	2	15	11	29
Eye, ear, nose and throat	0	4	12	4	20
Genitourinary	1	4	5	5	15
Hematologic	1	1	10	3	15
Dermatologic	2	2	3	4	11
Muscle, joint and bone	2	0	9	1	12
Respiratory	0	0	3	3	6
Endocrine	1	0	2	0	3

Table 4. Number and percentage of inpatients with single, two, and three and over medical problems

Number of medical problems	Age group				total
	10-20	21-40	41-60	61-80	
Single	7 (6.3%)	13 (11.7%)	66 (59.5%)	25 (22.5%)	111
Two	2 (5.9%)	3 (8.8%)	20 (58.8%)	9 (26.5%)	34
Three and over	0	2 (12.5%)	7 (43.8%)	7 (43.8%)	16
Total	9	18	93	41	161

was less than 10%.

Table 3 shows the number and percentage of various types of systemic conditions by age group. The majority of the types of systemic conditions were in the 41-60 age group with highest incidence of all age groups.

Table 4 shows the number and percent of inpatients with single, two and three and over medical conditions by age group. The incidence of inpatients with single medical condition among inpatients was the highest in the 41-60 age group (59.5%), followed by in the 61-80 age group (22.5%), in the 21-40 age group (11.7%) and in the 11-20 age group (6.3%). The incidence of inpatients with two systemic conditions was the highest in the 41-60 age group (58.8%), followed by the 61-80 age group (26.5%), in the 10-20 age group (5.9%) and in the 21-40 age group (8.8%). The incidence of inpatients with three and over

systemic conditions was the highest in the 41-60 age group and in the 61-80 age group (43.8% respectively), followed by the 21-40 age group (12.5%). The number of inpatients with single medical condition among all inpatients was 111, that of ones with two medical conditions was 34 and that of ones with three and over systemic conditions was 16.

Discussion

In this study, all inpatients had some medical problem at the time of periodontal evaluation as the data from their physicians to our department have shown. So, we did not calculate the incidence of medical problems among total inpatients.

As with other studies²⁻⁵⁾ and previous study⁶⁾, cardiovascular disease was the most prevalent medical problems in this study. Patients with cardiovascular diseases

require careful management, to include preoperative sedation, antibiotics, alterations in local anesthetics, and monitor of blood pressure during operation. On the other hand, Motoya *et al.*⁸⁾ reported that incidence of the periodontal disease in patients with cardiac disease was higher compared with that of in patients with other various types of systemic conditions over 40 years. Josphipura *et al.*⁹⁾ reported that tooth loss may be associated with increased risk of coronary heart disease(CHD), primarily among those with a positive periodontal disease history. Those may indicate that periodontal diseases and heart disease share a common etiologic pathway¹⁰⁾.

As to other systemic disorders, a doctor must confirm the types and dose of the drugs before treatment for the patients presented neuropsychiatric diseases including schizophrenia and cerebral infarction, because those patients are taking many medications. In patients suffered from diabetes, they are susceptible to infection and wound healing retards in them, so diabetes must be under control. Also, a doctor must be careful for hyperglycemia in insulin-dependent diabetes patients. A doctor must protect his hands and skin from blood of patients using gloves and he must be careful during the injection of the needle as not to inject his hand by accident for patients with hepatitis. In patients with hematologic and renal disease, hemorrhage and infection must be controlled during treatment. Cancer patients are receiving chemotherapy and the particular drugs are used. In irradiated patients for head and neck cancer, irradiated areas should not be included in surgical procedures. In the respiratory patients, the operator must be

careful to control hemorrhage, maintain a patient airway and keep the procedures brief.

In the study of the prevalence of patients with medical problems among three different facilities, Nery *et al.*⁴⁾ found that patients from the hospital dental clinic had the highest frequency of medical problems, compared to the private office and academic dental center⁴⁾. Sonis *et al.*¹¹⁾ found the frequency of patients with medical problems was highest in the specialty practice, but the university-hospital practice had the most patients with multiple problems as determined by the ratio of medical problems to patients. Oi *et al.*⁵⁾ found the frequency of patients with medical problems was the highest in the general hospital, compared to the university medical hospital and private medical practice. This fact may indicate that inpatients are presumably ill and are seeking help for their medical problems rather than their dental condition⁴⁾, and they can not afford medical or dental care as they are not on the high economic level⁴⁾, and as they are referred to academic dental center from general hospital or academic medical center, dentists must be careful for their medical conditions. Oi *et al.* in other study⁵⁾ and authors in previous study⁶⁾ reported the prevalence of patients with multiple medical conditions were the highest in 60 and over age group. This finding is consistent with the result of this study except for the result in the 41-60 age group.

To obtain a medical history for dental patients, a question concerning a patient's past medical history and referral of patients to medical clinic for evaluation²⁾, written medical history questionnaire^{12,13)} and a

combination of written and verbal medical history procedures^{3,11)} are used practically. Oi et al.⁵⁾ interview patients concerning past medical conditions at the time of oral evaluation and confirm the patients concerning their present medical conditions on the base of data from physicians or refer to the physician for a patient's medical conditions if necessary. Rees and Brasher³⁾, and Sonis et al.¹¹⁾ reported the importance of obtaining both written and verbal histories to get the most accurate information, but the information from the methods employed by Oi et al. in other study⁵⁾ and authors in this study seem to be valid for every specific condition rather than that obtained from only a "patient-provided" history^{12,13)}.

Conclusion

Cardiovascular, neuropsychiatric, digestive and metabolic disorders were reported 63.1% of all medical problems. Hypertension was reported in 27.5%(14 of 51) in cardiovascular disorder, hepatitis was in 31.0%(9 of 29) in digestive disorder, diabetes mellitus was represented in 68.9%(20 of 29) in metabolic disorder, and cerebral infarction was 22.6 %(7 of 31) and schizophrenia was 32.3% (10 of 31) in neuropsychiatric disorder.

The majority of the types of systemic conditions were in the 41-60 age group with the highest incidence of all age groups. The highest incidence of inpatients with single and two medical problems among inpatients was in the 41-60 age group, but the incidence of inpatients with three and over medical problems was the same in both the 41-60 age group and the 61-80 age group.

The information obtained from each patient's medical condition based on the interview with patients and on the data

from the patient's physician seems to be valid for every specific condition rather than that obtained from a "patient-provided" history.

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歯周疾患治療のために訪れた入院患者の全身状態について

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抄録：岩手医科大学医学部付属病院から歯学部付属病院第2保存科に紹介された161名の入院患者（男性90名，女性71名，年齢12－80歳）について，（1）年齢，（2）性別，（3）全身状態を調査した。全身状態については，入院患者からの問診と医師からのデータを参考にした。全身状態は，循環器系，呼吸器系，精神・神経系，消化器系，代謝疾患，耳鼻・眼科，泌尿器系，皮膚疾患，筋・関節・骨，血液，内分泌に分類した。年齢は，10－20歳，21－40歳，41－60歳，61－80歳の4群に分類した。

循環器系疾患の総数は51で，21－40歳群で1，41－60歳群で28，61－80歳群で22であった。精神神経系疾患は第2位（31）で，以下，消化器系疾患と代謝疾患は同数（いずれも29）であった。それ以外は，各疾患ともに20以下であった。

以上4つの疾患は，全ての全身状態の63.1%を占めていた。循環器系疾患では，そのうちの27.5%は高血圧症であり，消化器系疾患では，肝炎が31.0%を占めていた。代謝疾患は，68.9%は糖尿病であり，精神・神経系疾患では，脳血管障害は22.6%，精神疾患は32.3%認められた。どの全身疾患の出現率も年齢群でみると41－60歳群で最高であった。全身疾患の種類を1つあるいは2つ有する患者の比率は41－60歳群で最高（それぞれ59.5%，58.8%）であるが，3つ以上有する患者の比率は41－60歳群と61－80歳群で最高（それぞれ43.8%）であった。

本研究から，患者の全身状態を把握するためには，患者の問診からのデータのほかに医師からの詳細なデータを収集することが効果的であると思われる。