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ORIGINAL

Analysis of patients with systemic diseases and their prevalence of periodontal disease in the clinic of the Specialty of Periodontics at the School of Dentistry of the Universidad Abierta Interamericana

Análisis de pacientes con Enfermedades sistémicas y su prevalencia de enfermedad periodontal en la clínica de la Especialidad de Periodoncia en la Facultad de Odontología de la Universidad Abierta Interamericana

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ABSTRACT

Periodontal diseases, especially periodontitis, were associated with systemic and social factors. Recent studies showed their relationship with cardiovascular diseases, diabetes, osteoporosis and smoking, with diabetes being a significant factor that aggravated the progression and severity of periodontitis. The prevalence of severe periodontitis increased between 30 and 40 years of age and remained stable at older ages. Factors such as socioeconomic level, habits such as smoking and poor oral hygiene, and systemic conditions, such as hypertension and diabetes, played a determining role in the progression of this pathology.

Smoking represented a critical risk, associated with greater severity and incidence of periodontitis. Abandoning this habit significantly reduced the risk. Likewise, people with diabetes had a 2.6 to 3 times higher risk of developing periodontitis, with a more aggressive progression. The studies also suggested a relationship between periodontal disease and hypertension, although further research was needed to establish causality.

The data analyzed revealed that prevalence varied with age, habits and systemic conditions. Although factors such as lifestyle and socioeconomic status were not directly associated with systemic pathologies, they significantly influenced periodontal health. It was concluded that these patients required personalized treatment and follow-up to prevent complications. It was essential to standardize evaluation and diagnostic methods to improve the understanding and management of this disease.

Keywords: Periodontal disease; smoking; diabetes; socioeconomic factors; oral health; oral health; periodontal disease.

RESUMEN

Las enfermedades periodontales, especialmente la periodontitis, estuvieron asociadas con factores sistémicos y sociales. Estudios recientes mostraron su relación con enfermedades cardiovasculares, diabetes, osteoporosis y tabaquismo, siendo la diabetes un factor significativo que agravó la progresión y severidad de la periodontitis. La prevalencia de la periodontitis severa se incrementó entre los 30 y 40 años y se mantuvo estable en edades avanzadas. Factores como el nivel socioeconómico, hábitos como el tabaquismo y la higiene oral deficiente, y condiciones sistémicas, como hipertensión y diabetes, desempeñaron un papel determinante en la progresión de esta patología. El tabaquismo representó un riesgo crítico, asociado con mayor severidad e incidencia de la periodontitis. Abandonar este hábito redujo significativamente el riesgo. Asimismo, las personas con diabetes presentaron un riesgo entre 2.6 y 3 veces mayor de desarrollar periodontitis, con progresión más agresiva. Los estudios también sugirieron una relación entre enfermedad periodontal e hipertensión, aunque se necesitaron más investigaciones para establecer causalidad. Los datos analizados revelaron que la prevalencia varió con la edad, hábitos y condiciones sistémicas. Aunque factores como el estilo de vida y el nivel socioeconómico no se asociaron directamente a patologías sistémicas, influyeron significativamente en la salud periodontal. Se concluyó que estos pacientes requirieron tratamiento y seguimiento personalizados para prevenir complicaciones. Fue esencial estandarizar los métodos de evaluación y diagnóstico para mejorar la comprensión y manejo de esta enfermedad.

Palabras clave: Enfermedades periodontales; tabaquismo; diabetes; factores socioeconómicos; salud bucodental.

INTRODUCTION

According to the World Health Organization, periodontal disease affects the tissues surrounding and supporting the teeth; the disease manifests itself with bleeding and inflammation of the gums, with gingivitis being the initial stage. In the more advanced stages, the gum tissue loses its attachment to the teeth and bone, which causes tooth mobility and loss, known as periodontitis. Gingivitis has two main etiologies: whether or not it is plaque-induced, the latter meaning that systemic diseases, malnutrition, infections, and endocrine disorders can cause it. The patient returns to a healthy state if treated appropriately and, if not, can progress to periodontitis. (4)

Although systemic conditions can evidence periodontitis, we must also consider that the majority of oral microorganisms are not pathogenic but opportunistic commensals that maintain stable oral health and protect against pathogenic microorganisms.

General objective

To evaluate the prevalence of periodontal disease in patients with systemic diseases.

METHODS

An observational, descriptive, cross-sectional study was conducted on the medical records of patients who attended the periodontology specialty at the Inter-American Open University.

Type of research and design:

•Observational and descriptive: Patients' medical records in the periodontics clinic at the Universidad Abierta Interamericana were examined.

•Cross-sectional: Different patient cases were evaluated according to their periodontograms.

Población y Muestra:

Se analizaron n=70 historias clínicas médicas odontológicas de pacientes que asistieron a la clínica de especialización de la Universidad Abierta Interamericana (UAI).

Durante los años 2019 a 2022 los mismos fueron atendidos por odontólogos cursantes de 1 a 3 años de dicha especialidad.

De esa población solo 43 historias clínicas cumplieron con los siguientes criterios:

Criterios de inclusión:

• Medical records of patients with different pathologies classified according to what was mentioned in the introduction.

Exclusion criteria:

● Medical records of children.
● Medical records of pregnant women.
● Incomplete medical records.
● Medical records without panoramic radiographs.
● Medical records without periapical radiographs.

Procedure:

Authorization was requested from the director of the Periodontology Department at the Universidad Abierta Interamericana (UAI) in order to access patients' medical records. Once this authorization was granted, the information was compiled in a table (see Table 3.2.3) designed for this study, beginning with reviewing medical records of patients who attended the Periodontics Specialty Clinic. The review covered 70 medical records, of which, according to the information of complete usefulness, 43 were selected, taking into account the inclusion criteria mentioned above. Periodontal charts and panoramic and periapical radiographs were then systematically analyzed.

Once all the necessary information had been compiled, taking into account patient data such as sex, age, periodontal stage and grade, medical history, habits such as smoking, and whether or not the patient had diabetes, a spreadsheet was created in Excel, where all the data for each patient was entered for the corresponding statistical analysis, which consisted of calculating percentages.

Subsequently, tables and graphs were produced, and the results and conclusions were discussed.

Table 3.2.3. Data collection table

Nombre	Sexo	Edad	Estadio Periodontal	Grado Periodontal	Antecedentes Medicos	Diabetes	Fumador

Source: Author's own creation

RESULTS

In this section, the results obtained from the information gathered in the Periodontics Specialty at the Universidad Abierta Interamericana (UAI) were analyzed.

In terms of gender, it was found that a total of 43 patients attended the clinic, of which 30 were women, constituting 69.7%, and 13 were men, constituting 30.3%. (Table 4.1 Graph 4.1)

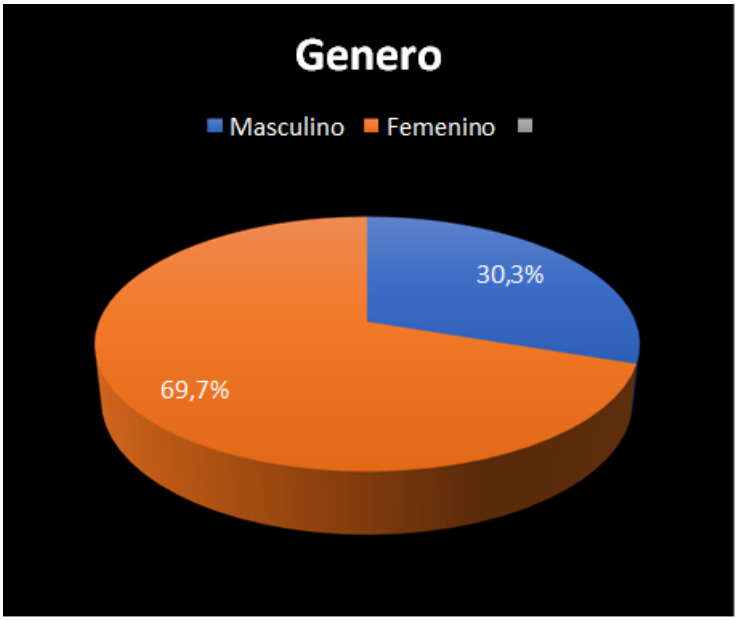
https://doi.org/10.56294/piii2025403

Table 4.1 Frequency according to Gender.

Género	número	Porcentaje
Masculino	13	30,3
Femenino	30	69,7
Total	43	100

Source: Author's own creation.

Figure 4.1



Source: Author's own creation

The distribution of the population by age was found to be within a range from 20 to over 70 years old. The highest frequency was detected in the 30 to 60 age range. Frequency by age is analyzed based on the 43 patients in whom the prevalence of periodontal disease could be observed in patients with systemic diseases (Table 4.2 Graph 4.2)

Table 4.2

Rango Etario	Numero	Porcentaje
Entre 20 y 30	5	11,62
Entre 30 y 40	9	20,93
Entre 40 y 50	10	23,25
Entre 50 y 60	10	23,25
Entre 60 y 70	4	9,30
Mayores de 70	2	4,65

Source: Author's own creation

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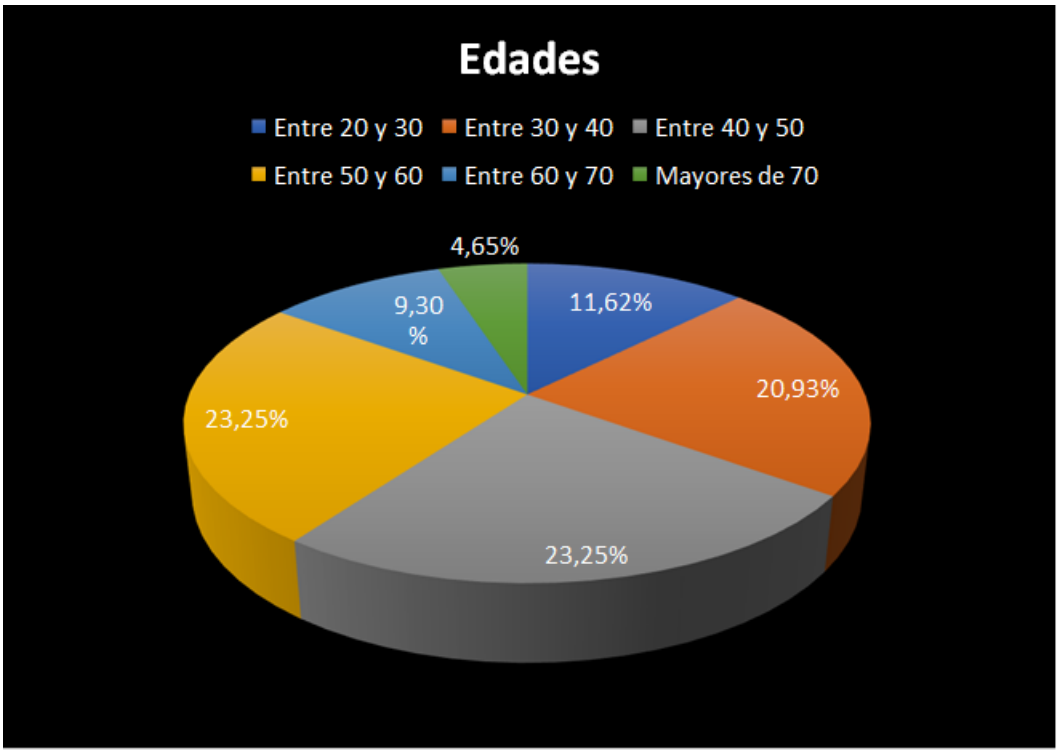
Figure 4.2



Regarding the frequency of risk factors presented by patients treated in the Periodontics Specialty at the Universidad Abierta Interamericana (UAI), it was analyzed that of the 43 patients, the highest prevalence presented habits such as tobacco use, diabetes, and hypertension in a higher percentage, in terms of patients without underlying pathology, and finally osteoporosis, asthma, hepatitis, and hypothyroidism. (Table 4.3, graph 4.3)

Table 4.3

Factores de riesgo	Numero	Porcentaje
Diabetes	11	25,28
Osteosporosis	2	4,65
Hepatitis	1	2,32
Hipotiroidismo	1	2,32
Tabaquismo	13	30,23
Asma	2	4,65
Hipertension arterial	7	16,27
Sin patologia de base	6	13,98

Source: Author's own creation

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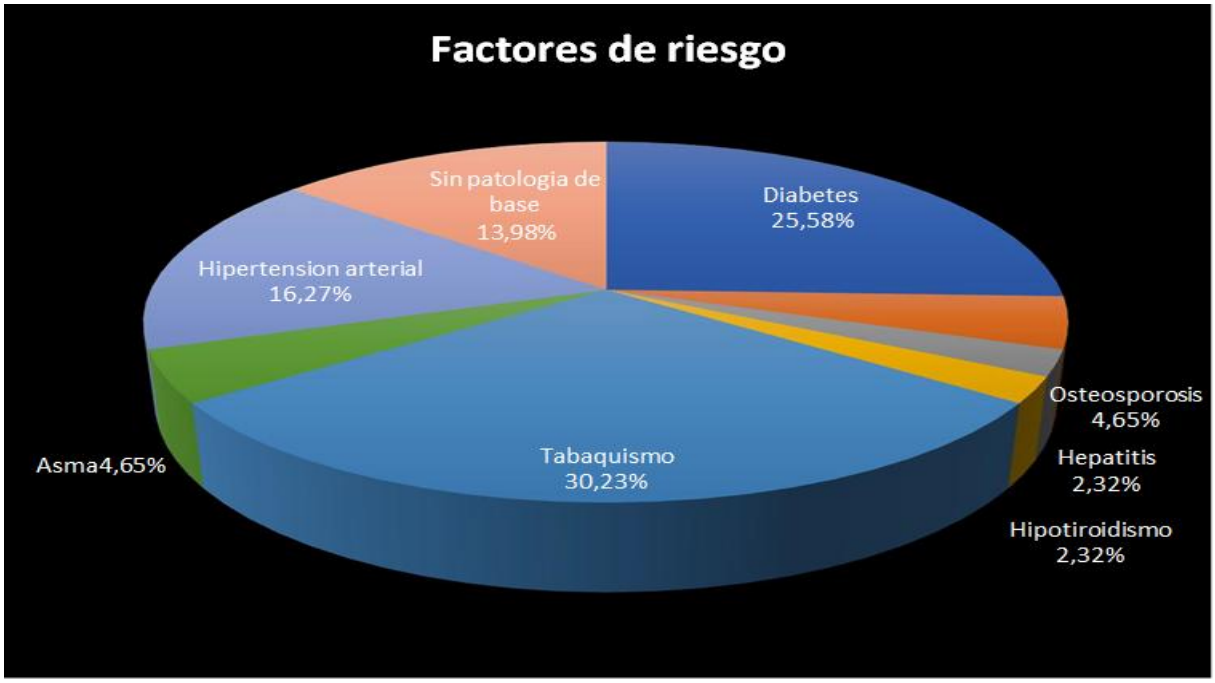
Figure 4.3



Source: Author's own creation

Regarding the progression of insertion loss represented by grades A, B and C, its distribution was observed with greater relevance in patients who smoked, following a high percentage in patients with diabetes, hypertension and patients without underlying pathology, and finally osteoporosis, asthma, hepatitis and hypothyroidism. (Table 4.4 and Graph 4.4)

Table 4.4

Factor de Riesgo	Grado A	Grado B	Grado C
Tabaco	6	3	4
Hipertension	4	1	2
Diabetes	5	4	2
Osteosporosis		2	
Asma	1		1
Hipotiroidismo	1		
Hepatitis	1		
Sin patologia de base	4	2	

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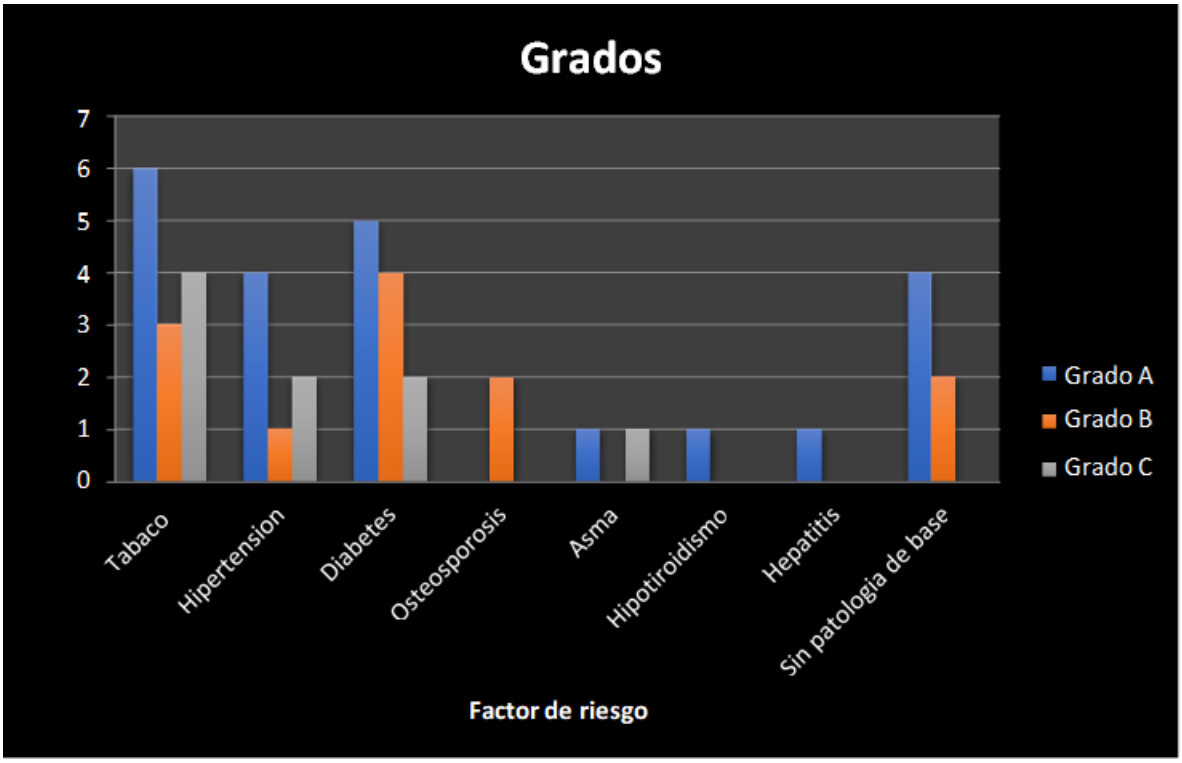
Source: Author's own creation

Figure 4.4



Source: Author's own creation

Finally, the severity, complexity, and distribution represented by stages that classify periodontal disease were analyzed for each risk factor. In the case of patients who consumed tobacco, more significant progress was observed in terms of stage II as already established moderate periodontitis; in less prevalence concerning this, stages I and III were observed.

In terms of the patients who presented with diabetes, there was a notable increase to stage III, in which severe periodontitis has the potential for additional tooth loss. This condition produces significant damage to the attachment apparatus, causing the loss of one or more teeth. Stage I was in second place, and finally, stage II.

In patients with hypertension, stage III was also observed, followed by stage I and finally stage II.

In the case of patients who did not present any underlying pathology, if they clinically presented periodontal alterations that indicated some deficit in terms of habits that had a notable impact, a greater predominance could be seen in stage II, in which periodontitis is established, then stage I, and finally stage III.

In patients with osteoporosis, its higher prevalence was reflected in stage II, with no alterations observed in stages I and III.

In patients with hypothyroidism and hepatitis, prevalence was observed in stage I, and finally, asthmatic patients presented stage I and stage III in the same conditions.

None of the patients analyzed were observed to reach stage IV. (Table 4.5 and Graph 4.5)

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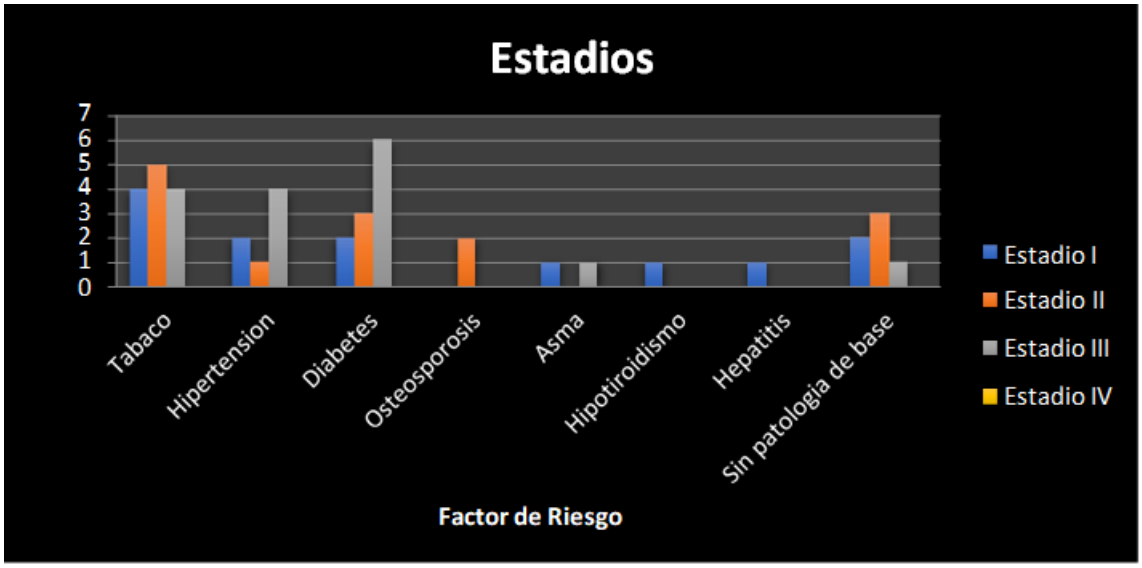
Table 4.5

Factor de Riesgo	Estadio I	Estadio II	Estadio III	Estadio IV
Tabaco	4	5	4	
Hipertension	2	1	4	
Diabetes	2	3	6	
Osteosporosis		2		
Asma	1		1	
Hipotiroidismo	1			
Hepatitis	1			
Sin patologia de base	2	4	1	

Source: Author's own creation

Figure 4.5



Source: Author's own creation

CONCLUSIONS

According to the comparisons made in the clinical histories of each of the patients treated in the Periodontics specialty at the Inter-American Open University, it was concluded that the analysis carried out, the measurement of central tendency (mode) observed in patients with diabetes, high blood pressure, smoking and the association with patients who do not present systemic diseases but are conditioned by habits such as correct oral hygiene, are closely associated with periodontal disease, significantly interfering with the severity and progression of the disease.

Other risk factors are involved with periodontal disease, although they cannot be measured by means of staging, as in the case of a patient with underlying diseases. However, it can be observed at a clinical level that these risk factors, such as habits, such as oral hygiene, tobacco consumption, and socioeconomic levels, are present. This has a significant impact on the patient's periodontal health.

It is important to clarify that these patients require treatment and follow-up to avoid further complications. The number of medical records samples is expected to increase, and all operators are

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calibrated to achieve a more secure diagnosis in these patients and thus conclude with the appropriate treatment for each of them.

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CONFLICT OF INTEREST

None.