

Epidemiological Aspect of Periodontal Diseases in Smoking Patients Consulting in the Service of Odontology Hospital Military of Bamako (IHB).

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Abstract

Periodontal diseases are multifactorial infectious diseases with inflammatory manifestation resulting in the destruction of the supporting tissues of the tooth. The objective of this study was to assess the epidemiological aspect of periodontal disease in smokers who came for consultation at the dentistry department of the Bamako Hospital Infirmery (IHB).

This was a descriptive cross-sectional study based on observation of the periodontal status of smoking patients consulted in the dentistry department of the Bamako Hospital Infirmery (IHB). The study took place from January 15 to April 15, 2020. It involved all smokers who came for consultation in the department.

The most represented age group was that of 28-37 years with 37% of cases. The male sex was represented in 100% of cases. The soldiers were the most numerous with 30% of cases. We found that 33% of smokers smoked between 16-20 beats per day per person and 26% of smokers who had a smoking time of between 6-10 years. Gingival recession was the most common in 42% of cases.

Although the various influences of smoking and in particular exposure to cigarette smoke on the supporting tissues of the teeth are not yet fully explained or understood, it is nevertheless shown that the physiological functions of almost all periodontium tissues are negatively affected.

Keywords: Epidemiology, periodontal disease, periodontal disease, Smoking, Cigarettes, Smoker, dentistry department of the Bamako Hospital Infirmery (IHB).

INTRODUCTION

Periodontal diseases are multifactorial infectious diseases with inflammatory manifestation resulting in the destruction of the supporting tissues of the tooth [1]. They are widespread and can affect up to 90% of the population with varying degrees of disease severity [2].

The term Periodontal disease encompasses all periodontal pathologies characterized by an infectious process and an inflammatory reaction which reach the supporting tissues of the tooth, the periodontium [3]. These supporting tissues include a covering tissue made up of the gum, the alveolar bone in which the tooth is anchored, the cementum that covers the root and the alveolar-dental ligament or periodontium that fits between the cementum and the bone. alveolar. All of these tissues form the periodontium [4].

The majority of the 35-40 year old population is affected by periodontal disease, with a prevalence of 25 to 50% [5].

In Africa the prevalence of periodontal diseases was 33% in Ghana, 27.5% in Nigeria and 30% in Senegal [6].

Smoking is defined as inhaling cigarette smoke or chewing tobacco. It is considered to be an epidemic that strikes almost all continents.

According to the results of the available partial studies carried out across Bamako in 2001 on smoking, tobacco consumption constitutes a real public health and development problem. The population estimated at 13,796,354 inhabitants in 2010 is predominantly young (47.5% under 14) and constitutes an appropriate target for the phenomenon of smoking [7]. The substances contained in tobacco can exert very diverse and potentially pathogenic effects on the tissues of the periodontium [8].

The objective of this study was to assess the epidemiological aspect of periodontal disease in smokers who came for consultation at the dentistry department of the Bamako Hospital Infirmary (IHB).

METHODOLOGY

This was a descriptive cross-sectional study based on observation of the periodontal status of smoking patients consulted in the dentistry department of the Bamako Hospital Infirmary (IHB).

The study took place from January 15 to April 15, 2020. It involved all smokers who came for consultation in the department. In the framework of the research, we adopted a non-probabilistic method. The sampling was exhaustive including all the tobacco users seen in consultation.

Were included in the study, any patient, smoker who came for consultation in the Odontology department presenting oral diseases and who had agreed to answer the questions and be examined.

The patients consulted for oral diseases or with a periodontal problem who did not agree to participate in the study. The sample consisted of 100 patients.

To carry out this work, a survey sheet comprising questions addressed to respondents with socioeconomic (age, sex, profession) and clinical (prevalence, number of cigarette sticks) variables was drawn up.

Data entry was performed using World 2010 software, statistical calculations and analysis performed using Epi-info 7.2.2.2 and Excel 2010 software.

RESULTS

1. SOCIODEMOGRAPHIC ASPECT

• **Age**

Table I: Distribution of patients by age

Age (years)	Effective	Percentage (%)
18–27	18	18
28–37	37	37
38–47	26	26
48–57	17	17
58–67	2	2
Total	100	100

The 28-37 age group was the most represented with 37% of cases

• **Sex**

Distribution of patients by sex

All smokers were men (100% of cases)

• **Profession**

Table II: Distribution of patients according to their professions

Profession	Effective	Percentage (%)
Commercial agents	21	21
Security agent	5	5
Social Agent	2	2
Drivers	3	3
Breeder	1	1
Teachers	2	2
Students	7	7
Footballer	1	1
Military	30	30
Workers	23	23
Technicians	5	5
Total	100	100

The military were the most represented with 30% of cases.

2. CLINICAL ASPECTS

Table III: Prevalence of smoking patients among the patients consulted

Prevalency	Effective	Percentage (%)
Smoking patients	100	15,31
Non-smoking patients	553	84,69
Total	653	100

Among the patients consulted, 15.31% of cases were smoking.

Table IV: Distribution of patients according to the number of sticks smoked per day

Number of smoked sticks per day	Effective	Percentage (%)
1-5	7	7
6 -10	28	28
11-15	24	24
16-20	33	33
21-25	2	2
26-30	4	4
31-35	0	0
36-40	2	2
Total	100	100

People who smoked 16-20 cigarette sticks per day accounted for 33% of cases.

Table V: Distribution of patients according to the period of smoking time in years

Smoking time (year)	Effective	Percentage (%)
1-5	8	8
6 -10	26	26
11-15	20	20
16-20	22	22
21-25	9	9
26-30	5	5
31-35	6	6
36-40	4	4
Total	100	100

People with a smoking time of 6-10 years accounted for 26% of cases.

Table VI: Distribution of patients according to the pathologies encountered

Pathologies encountered	Effective	Percentage (%)
Localized chronic periodontitis	6	6
Generalized chronic periodontitis	9	9
Generalized Aggressive Periodontitis	6	6
Localized Aggressive Periodontitis	8	8
Periodontal abscess	16	16
Acute localized gingivitis	7	7
Generalized acute gingivitis	6	6
Gum recession	42	42
Total	100	100

Gingival recession was the most common pathology with 42% of cases.

DISCUSSION

The study was cross-sectional and descriptive, lasting 3 months /January 15 to April 15, 2020.

SOCIODEMOGRAPHIC ASPECT

Our study is carried out on a sample of 100 smoking patients.

○ *According to age*

Our study population consists mainly of young people with an average age of 18 years, the most represented age group was 28-37 years with 37% of cases. This result is comparable to that of the survey report "Tobacco and Poverty in Mali" [15] which found that the highest bracket was that of 20 - 29 years with 30% of cases. This can be explained by the fact that it is the most active age group to the exposure of the cigarette because it constitutes an elegance or an enhancement of their virility.

○ *By sex*

The male sex was the most represented with 100% of the cases of tobacco addicts seen in consultation with the dentistry department of the Military Hospital of Bamako, which would explain a higher consultation rate for smoking men than for women. This result is comparable to that of the survey report "Tobacco and Poverty in Mali" [15] which found 95% of smokers are men against 4.5% of women. Culturally in Africa, cigarette consumption is reserved for men than for women. The woman who smokes is very frowned upon in Malian society, which explains the absence of cases of women who smoke in consultation in this service.

○ *According to profession*

The military were the most numerous with 30% of cases, followed by workers with 16%. This result is close to that of CAMARA M. M. [18] who found 37.6% were pupils and students at Kati CSRef. This result could be explained by the fact that the service within the military camp. It was created for the purpose of providing medical care to the military.

 **CLINICAL ASPECT**

○ *According to prevalence*

We recorded 15.31% of tobacco users among the 653 patients consulted at the Bamako Hospital Infirmary, this result is consistent with that of BAH M. [20] who found an overall smoking prevalence of 15.2% in the high schools of commune VI of the district of Bamako. This could be explained by the fact that smoking for certain tobacco users is an act of asserting oneself, of identifying with one's role models, or a proof of perfect integration into the modern world.

○ *According to the number of smoked sticks per day and person*

We found that 33% of smokers smoked between 16-20 beats per day per person and 26% of smokers who smoked between 6-10 years. This figure remains higher than that of DIAWARA M. I [19] who found in 2011 that 38.30% of smokers consumed 3-10 cigarettes per day per person lasting 1-5 years. These differences may be explained either by the quality of cigarettes smoked by smokers or by their income, which means that smokers are exposed to periodontal disease by the number of sticks smoked and the duration of tobacco consumption.

○ *Pathological aspects or disease*

Gum recession was the most common in 42% of cases. According to a meta-analysis, the prevalence of gum recession and loss of periodontal attachment is greater in tobacco users than in non-users and is the main clinical sign of periodontal disease (PD) affecting the whole teeth and more importantly the teeth of the anterior maxillary region [21]. This could explain that smokers are exposed to the risks of worsening and complicating periodontal disease.

CONCLUSION

At the end of this descriptive cross-sectional study on the epidemiological aspect of periodontal diseases in smoking patients consulted at the Dentistry Department of the Bamako Hospital Infirmary and on the basis of epidemiological studies and evidence of some fundamental pathogenic mechanisms of smoking on the periodontium, the present work has highlighted the influence of tobacco as a real risk factor on the pathogenesis of periodontal diseases. Even though the various influences of smoking and in particular exposure to cigarette smoke on the supporting tissues of the teeth are not yet fully explained or understood, it is nevertheless considered to be demonstrated that the physiological functions of almost all the tissues of the periodontium are negatively affected.

BIBLIOGRAPHIES

1. **STABHOLZ WA I...**Genetic and environmental risk factors for periodontitis and aggressive periodontitis. *Periodontal* 2000; 53 :138-53
2. **MOHAN R, MARK R, SING I, JAIN A.** Diagnostic Accuracy of CBCT for Aggressive Periodontitis. *J Clin Imaging Sei.* 2014 ; 4(2) :2.
3. **PEYRET LACOMBE A.** Etude de l' Immuno-Réactive Epithéliale Gingivale en réponse aux bactéries commensales. Thèse Chir. dent. France 2007.p13

4. **BOILLOT A.** Pathogènes parodontaux, marqueurs inflammatoires et maladie cardiovasculaire. Thèse : Doctorat 3eme cycle, Santé publique-épidémiologie, France 2016,p12
5. **BERCY.TENENBOUM** Parodontologie de diagnostic à la pratique. 1^{ere} Edition, 2e triage 1979, 3^e triage, Bruxelles 2003. P29-46-51-54
6. **KAMAGATE A ET AL.** Les prévalences des parodontites en Afrique Noire : influences des facteurs socio-économiques et habitudes culturelles. *Odonto-Stomatol.Trop.* 2001 ; 24 :37-41
7. **ALUTAS MALI**, Rapport d'enquête Tabac et Pauvreté réalisée, Aout 2010. p.5
8. *Re v M e n s Suisse O d o n t o s t o m a t o l, V o l 1 1 7 : 1 / 2 0 0 7*
9. **GANDEGA SALOUM.** Les maladies parodontales au Centre Hospitalier Universitaire d'Odontostomatologie de Bamako (Thèse Chir. Dent, Mali 2013, p19,77,83,84,85,865)
10. **ARMITAGE G.C.** Development of a classification system for periodontal diseases and conditions. *Annals of Periodontology* 1999;4: 1-6
11. **SUZUKI JB, CHARON JA.** Classification actuelle des maladies parodontales. *J Parodontol* 1989 ;8 :31-51
12. **RANNEY RR.** Classification of periodontal diseases.*Periodontol* 2000 1993 ; 2 :13 25
13. **ADEMOLA OLAJIDE ET AL.;** L'incidence du tabagisme sur le développement sanitaire et socio-économique en Afrique 2013
14. **CLEMENS WALTER ET AL.,** Influence du tabagisme sur le parodonte – une mise à jour (I) *Re v M e n s Suisse O d o n t o s t o m a t o l, V o l 1 1 7 : 1 / 2 0 0 7*
15. **RAPPORT D'ENQUETE « Tabac et la Pauvreté au Mali »** Association de Lutte Contre le Tabac, l'Alcool et le Stupéfiants au Mali réalisée en 2010
16. **KONATE O.** Prévalence de la carie dentaire chez les Militaires consultant le service d'odontologie de l'Infirmierie Hôpital de Bamako à propos de 62cas, mémoire Master en OdontostomatologieBAMAKO-MALI-INFSS-2016. P35
17. **DIARRA D.S,**Etude rétrospective des activités du service de chirurgie orthopédique et traumatologique du CHU GABRIEL TOURE de Janvier à Décembre 2014, thèse de médecine, FMOS BAMAKO, 2016, p.57
18. **CAMARAM.Malick,** Prévalence des motifs de consultation dans le service de médecine de Kati, thèse de médecine, FMOS BAMABO, 2009, p.35
19. **DIAWARA M. I** Etude des connaissances, attitudes et pratiques de la consommation du tabac au lycée Kankou Moussa de Daoudabougou Bamako thèse de médecine FMOS BAMAKO, 2011, 75p
20. **BAH M.** Tabagisme dans les Lycées de la commune VI du District de Bamako thèse de médecine FMOS Bamako, 2012.
21. **UNDERNER M. ET AL.** Effets du tabac sur la maladie parodontale, *Rev Mal Respir* 2009 ; 26 : 1057-73,106