



RESEARCH ARTICLE

Prevalence of Dental Amalgam in Uninassau School of Dentistry Clinic

Ana Kaline da Silva Pereira* and Lívia Andrade Rodrigues

University of Mauritius, Mauritius

*Corresponding author: Ana Kaline da Silva Pereira, University of Mauritius, Mauritius



Keywords

Prevalence of amalgam

Introduction

The dental amalgam is any alloy consisting of mercury, in which we can also find silver (Ag), tin (Sn) and copper (Cu) in its conventional filings. This type of restorative material is the focus of discussion in several countries, raising a great discussion about the continuity or elimination of its use, the reasons are: For the sake of offering little aesthetics or for providing possible risks for the dentist and the patient, due to the presence of mercury in its composition, since it is a volatile and toxic metal. Amalgam still in a certain way has a great importance in the present day, in a matter of value, for example (it is a material with a better cost/benefit, mainly in underdeveloped countries where the composite resin and the porcelain have very high values), provides excellent physical and mechanical properties such as high durability and tensile strength/dental attrition.

The objective of this study is to analyze the prevalence of amalgam use, based on the data obtained from the clinical records of the Uninassau School of Dentistry.

Materials and Methods

A retrospective analysis was made from the clinical records obtained at the dentistry clinical school of Uninassau, Recife, Brazil, in the year 2015, which were digitized by the students of the dentistry course of Uninassau of the 5th period, with the guidance of Prof. Dr. Thiago Antônio de Souza Araújo.

In a sum of 1255 clinical records, we obtained an

amount of 1017 patients who presented some type of restoration, having as exclusion criteria the individuals who did not present restored teeth and the clinical records with omitted data.

Through a detailed medical examination and an extrabuccal and intrabuccal physical exam performed by the graduates of Uninassau College, we analyzed the prevalence of dental amalgam, emphasizing the respective ages of each patient attended; being also observed, in more detail, the factor of the incidence of AgHg restorations with the type of dentition, be it anterior or posterior.

It is extremely relevant to note that no distinction was made regarding factors such as race, color, gender, social class or type of treatment performed; taking into account, only, the age range of each patient.

For a correct and precise analysis, absolute and relative distributions (percentage) were used in the two types of tables elaborated, one approaching the quantitative of people who presented amalgam or another type of restorative material; and another table showing the amount of AgHg-type restorations in each dentition.

This work was based on a proposal aimed at a descriptive statistical study with the tabulated and detailed results, showing the quantitative outcome of the prevalence of dental amalgam.

Results

According to the data reported, it is evident that the use of amalgam has been decreasing over the years, because in remote times the practice of using the amal-

Table 1: Patients attended at the uninassau clinic.

Age	Patients with AgHg restoration		Total	AgHg restoration Percentage
	yes	No		
18-24	121	190	311	38.9%
25-34	89	142	231	38.52%
35-44	83	83	166	50%
45-60	76	88	164	46.34%
> 60	19	126	145	13.1%

Table 2: Detail of the percentage of AgHg restorations in each type of dentition.

	Number of AgHg restorations	Percentage
Incisivo central (11, 21, 31, 41)	9	0.5%
Incisivo lateral (12, 22, 32, 42)	13	0.67%
Canino (13, 23, 33, 43)	36	1.87%
1° Pre-molar (14, 24, 34, 44)	225	11.71%
2° Pre-molar (15, 25, 35, 45)	300	15.61%
1° Molar (16, 26, 36, 46)	590	30.71%
2° Molar (17, 27, 37, 47)	603	31.38%
3° Molar (18, 27, 38, 48)	145	7.54%

gam was greater due to the lack of a restorative material with characteristics similar to that of the same. If we take into account the total number of patients with amalgam restorations, we have the highest percentage in patients aged 35-44 years, this value is 50%, that is, half the people who were treated in this age group have some type of restoration of the AgHg type. And the group between 45 and 60-years-old showed a percentage of 46% of the total number of patients attended, that is, it is clarified that amalgam is predominant in older patients. Making a caveat that individuals over 60 are more prone to extraction and use of dental prosthesis, so they presented a lower percentage of 13.1%.

One of the notorious causes of the decrease in AgHg is that people are increasingly looking for procedures with a more favorable aesthetic, together with the fact that resins with amalgam-like characteristics (with respect to strength and durability) have been developed. This can be demonstrated through [Table 1](#) with the following age groups: 18 to 24 years and 25 to 34 years, the figures are 39%, a decrease of almost 11% in the prevalence of the use of this restorative material.

The teeth observed with a higher prevalence of AgHg-type restorations were the 1st molars (16, 26, 36 and 46) and 2nd molars (17, 27, 37 and 47), for the reason that they are areas of great masticatory efforts, thus using restorative materials capable of withstanding the load exerted on the movements of dental occlusion. In comparison to the anterior teeth (central incisors, lateral incisors and canines) we noticed that there is a

very significant difference when it comes to the use of amalgam, while in the second molar we have a 31.38% prevalence of amalgam use in the group of canines (dentition of the previous ones) was the one that presented a greater percentage, 1.87% of teeth that have restoration in amalgam. This is due to the reason that the anterior teeth do not have great relevance at the moment of chewing, thus not requiring a material that is highly resistant to compression, another factor would be in relation to aesthetic purposes, since the anterior teeth are the teeth that remain more visible [1-6] ([Table 1](#) and [Table 2](#)).

Conclusion

The objective sought in this study was to show the prevalence of amalgam according to age groups. A selection was made with 1,017 patients in 2015, and these were attended at the Clinical School of Dentistry of the Mauricio University of Nassau. The research performed demonstrated a high index of restorative amalgam material, predominantly in patients from 35 to 60 years. It was also found that molars are the ones that present the most use of AgHg. It is considered, therefore, that amalgam was the most used material in dentistry in the 1990s, with the updating of dentistry and the search for esthetics these days, AgHg has a decrease in its use, because they do not present this requirement.

References

1. Nagem FH, Maria VS, Aragão HDN, Uchida MA, Carvalho JR, et al. (1997) Materiais restauradores: Aamálgama dental, Bauru.
2. Adair Luiz Stefanello Busato (1996) Dentística: Restauração em dentes posteriores, Artes médicas.
3. Luis Antonio Felippe, Luiz Clovis Cardoso Vieira, Andreas Lorenz Danker (1999) Amalgama dental: Fatos e controvérsias. Rev APCD 53: 41-45.
4. Garone N, Oliveira EC (1990) Atualização das principais questões relativas ao amálgama. Rev Paulista de Odontologia 12: 2-8.
5. Clóvis Pagani, Ana Lúcia Marsílio, Alessandra Bühler Amendola, Cláudio Antonio Talge Carvalho, João Cândido de Carvalho (1999) Amálgama dental: Considerações gerais e atualidades. JBC 3: 25-28.
6. Silveira Rodrigo Richard da, Francisconi Paulo Afonso Silveira, Mondelli José (2000) Amálgama-mais de 160 anos de serviços prestados à odontologia. JBC 4: 85-88.