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DENTITION STATE OF THE SUBADULT INDIVIDUALS OF THE SLAV-AVAR POPULATION OF ŠEBASTOVCE (EASTERN SLOVAKIA)

ABSTRACT: The state of the dentition was evaluated in 86 subadult individuals from the Slav-Avar burial ground at Šebastovce village (Eastern Slovakia).
Caries frequency, i.e. the percentage of individuals affected by dental decay, comes to 27.91%. Caries intensity, i.e. the percentage of teeth affected by dental decay, reaches 4.96% in deciduous teeth, and 3.49% in permanent teeth.
Caries rate in this Slav-Avar population of Šebastovce is lower than in the current children population in Slovakia.

KEY WORDS: Caries intensity and prevalence – Slav-Avar Population – Def and DMF index – Slovakia

INTRODUCTION

Anthropologists often meet the question whether the pathological changes of the set of teeth, in particular dental caries, were also present in the past in such an amount as today. The question arises, when and why this disease overspread so much, or whether it is a worldwide phenomenon.

A predominant role in the increase of caries occurrence in populations may have been played by lower function of the dentition, the consumption of refined sugar and white flour, the production of which began in this country at the end of the 18th century (Andrik, Müncnerová 1961). The way of nutrition of the prehistoric populations living on this territory has been the subject of several studies carried out in Central Europe.

In the Palaeolithic, cereals represented a traditional food component and they were roasted on fire. Soups and porridge were prepared from the ground grain and were eaten as the main meal not only in the Neolithic and the Bronze Age periods, respectively, but also in the Hallstadt period. The use of cereals brought along higher conduction of polysacharides, as a consequence of an imperfect grinding of the cereals, and thus products had high ratios of proteins, fats, cellulose, mineral salts and vitamins (Měška 1956).

It is known that the Slavs in the 10th century A.D. consumed different types of milk – sweet, sour and coagulated, the so-called curd, and cheese. The main food at that time were still cereals, legumes and vegetables. Fruit was eaten ungrafted for a long time. The main drink was honey, boiled with water and fermented, and since the 10th century A.D. the Slavs had known also beer made from barley, or oat (Meška 1956).

From the above mentioned facts it follows that food of the prehistorical and historical populations did not contain cariogenic components to such a high degree as today. The casual connection between the caries disintegration of teeth and food composition, as well as softening of the food, is indisputable. In contrast with prehistorical times when teeth started to decay only in adulthood, at present an overwhelming majority of pre-school children have an increased frequency of dental caries (Andrik 1962).

MATERIAL AND METHODS

The Slav-Avar cemetery Šebastovce lies in Eastern Slovakia, in the Košice basin, and has been dated into the advanced phase of the Slav-Avar period, i.e. approximately between 630–890 A.D. (Budínsky–Krička, 1968).

The sample consits of 86 subadult individuals. The age categories used in this study are in conformity with Thurzo and Korbačková (1980), who accomplished the anthropological analysis of the burial site. The traits establishing age and sex were evaluated in accordance with the classification of Acsádi and Nemeskéri (1970). The age distribution of subadult individuals is given in *Table 1.*

The dentistry classification was used to evaluate caries. On the basis of this rate of caries the frequency of caries (percentage of individuals affected by caries), the intensity of caries (percentage of carious teeth), the DMF index (number of carious teeth, cervical stumps and ante-mortem losses per individual) in permanent teeth and the def index in deciduous teeth were calculated.

TABLE 1. The age distribution of subadult individuals.

	Age	Infans I (0–6)	Infans II (7–14)	Juvenis (15–20)
	N			
Male				
Female	6			6
Indetermined	80	41	32	7
	86	41	32	13

RESULTS AND DISCUSSION

Table 2 gives the number of individuals with intact and carious dentition in our sample. An unimpaired dentition was found in 62 individuals (72.09%), while 24 children (27.91%) had at least one caries.

Because there are only a few papers in which the dental caries rates would be examined in subadult individuals, we were able to compare some of our results with only the dentition state of the present Slovak children.

Veselá and Javorka published that in 1988 there were 43.1% of pre-school children living in Bratislava who needed deciduous teeth treatment. Palkovičová *et al.* (1998) found that nowadays 79.53% of Slovak children at the age of 5 years have carious deciduous teeth. At the age of 12 years about 85.5% of children have at least one carious permanent tooth.

Table 3 shows that caries intensity in deciduous dentition reaches 4.96%, and in permanent dentition 3.49%.

Caries prevalence of deciduous and permanent teeth in children from Šebastovce depends upon the age of the individuals.

With increasing age also the amount of carious teeth per individual increases. Because we have found neither intravital loss of teeth nor cervical stumps, the def and DMF indices include only carious teeth.

The average number of carious teeth (def and DEF index, respectively) among 0–6-year-old children (*Infans I, Infans II*) was of 0.33, and in 7–14-year-old individuals (*Infans II, Juvenis*) 0.53, respectively (*Table 4*).

Nowadays 5-year-old children have 4.5 carious teeth per individual, 12-year-old 3.49 respectively (Palkovičová *et al.* 1998).

All carious defects, in both deciduous and permanent teeth, were found only on molars. Caries were localized on crowns, namely on the occlusal or approximal surfaces. Besides only approximal defects also carious lesions with broken occluso-proximal bridge were found.

With increasing age in the deciduous dentition approximal caries predominate, which is typical also for the present population.

TABLE 2. The number of individuals with intact and carious dentition, respectively.

	Intact dentition n	Carious dentition n
Infans I	35	6
%	85.37	14.63
Infans II	19	13
%	59.38	40.62
Juvenis	8	5
%	61.54	38.46
Total	62	24
%	72.09	27.91

TABLE 3. The intensity of caries.

	Deciduous teeth					Permanent teeth				
		Intact teeth		Carious teeth			Intact teeth		Carious teeth	
	N	n	%	n	%	N	n	%	n	%
Infans I	356	344	96.63	12	3.37	7	7	100		
Infans II	128	116	90.62	12	9.38	439	429	97.72	10	2.28
Juvenis						241	227	94.19	14	5.81
Total	484	460	95.04	24	4.96	687	663	96.51	24	3.49

N – number of examined teeth

TABLE 4. The def index and the DMF index, respectively.

	Deciduous teeth			Permanent teeth	
	N	n	def	n	DMF
Infans I	41	12	0.29		
Infans II	32	12	0.38	10	0.31
Juvenis	13			14	1.08
Total	86	24	0.33	24	0.53

CONCLUSION

The caries rate in the children population of Šebastovce is lower than that in the present Slovak population. According to the findings reported here it can be assumed that the nutrition of that Slav-Avar population contained cariogenic components in a lower degree than the present one.

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