CONDITION OF HARD TISSUES OF TEETH, PARODONTAL TISSUES AND ORAL HYGIENE IN CHILDREN OF EARLY SCHOOL AGE WITH EPILEPSY

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Annotation. *Epilepsy is a chronic disease characterized by the risk of repeated seizures; its prevalence in developing countries is 5.59 per 1000 people, and in developed countries - 5-7 per 1000 people. It is known that, regardless of age, a decrease in bone mineral density is observed in patients with epilepsy. In addition, seizures along with mental deterioration can compromise oral and dental care, which can lead to various dental diseases.*

The purpose of the study was to examine the state of hard tooth tissues, parodontal tissues and oral hygiene in children of early school age with epilepsy.

44 children with epilepsy of 7-9 years age (main group) and 90 children of the same age without somatic pathology (comparison group) were examined and observed in the children's hospital №5, living in Odessa and Odessa region. The state of the hard tissues of the teeth was evaluated using the indices DFT, DFS, DMFT, DMFS and their components. Oral hygiene was assessed using Silness-Loe and Stallard indices, and parodontal tissues using Parma indices, bleeding and Schiller-Pisarev test.

The results of a study of the dental status of children with epilepsy indicate a negative effect of this neurological pathology on the state of hard tooth tissues and parodontal tissues.

Key words: *hard tooth tissues, parodontal tissues, level of oral hygiene, epilepsy, children.*

The World Health Organization (WHO) [1] defines epilepsy as a chronic disease of multifactorial etiology, characterized by recurring episodes of paroxysmal brain dysfunction caused by sudden random and excessive excretion of neurons. This is a chronic disease characterized by the risk of repeated seizures; its prevalence in developing countries is 5.59 per 1000 people [2], and in developed countries - 5-7 per 1000 people [3]. Epileptic seizures begin in a healthy child aged 6 to 14 months, often with focal or generalized status, while hemiclonia can be alternating character. Later, other types of seizures appear - myoclonus, partial, atonic and absences, which are often triggered by fever [4, 5].

Epilepsy along with impaired intelligence and other neurological disorders can have social, physical and psychological consequences. There are publications on the occurrence of gingival hyperplasia due to prolonged use of anticonvulsant drugs of the hydantoin group (diphenin) [1, 2]. It is known that, regardless of age, a decrease in bone mineral density is observed in patients with epilepsy [6]. In addition, seizures along with mental deterioration can compromise oral and dental care, which can lead to various dental diseases. [7-9].

The purpose of the study was to examine the state of hard tooth tissues, parodontal

tissues and oral hygiene in children of early school age with epilepsy.

Materials and methods. 44 children with epilepsy of 7-9 years age (main group) and 90 children of the same age without somatic pathology (comparison group) were examined and observed in the children's hospital №5, living in Odessa and Odessa region. The state of the hard tissues of the teeth was evaluated using the indices DFT, DFS, DMFT, DMFS and their components. Oral hygiene was assessed using Silness-Loe and Stallard indices, and parodontal tissues using Parma indices, bleeding and Schiller-Pisarev test [10].

Results and discussion. The results of studies of the dental status of children with epilepsy are shown in tables 1-3 and figures 1-4.

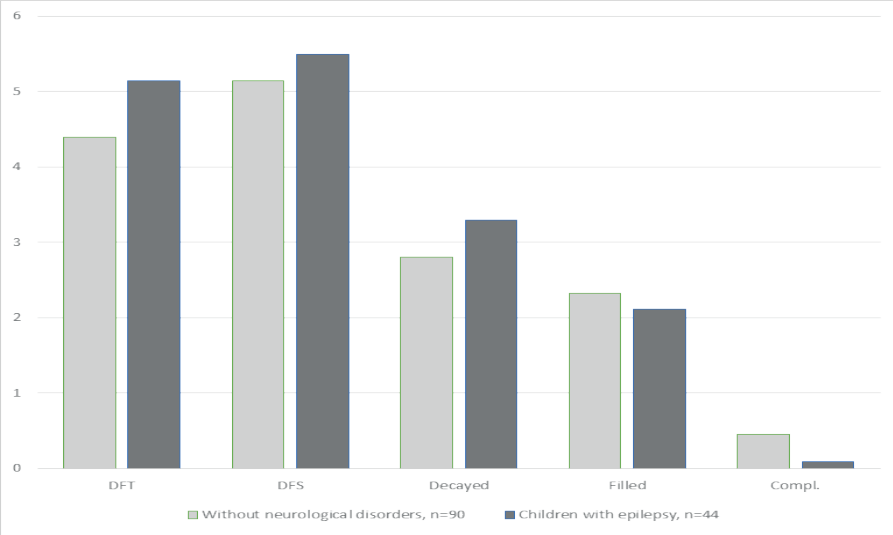

Fig 1. Chart of comparative evaluation of hard tissue parameters of temporary teeth in children with epilepsy and neurologically healthy children.

Table 1

Comparative evaluation of hard tissue parameters of temporary teeth in children with epilepsy and neurologically healthy children, M ± m

Indicators/ Group	DFT	DFS	Decayed	Filled	Compl.
Without neurological disorders, n=90	4,39 ±0,23	5,14 ±0,24	2,81 ±0,91	2,33 ±0,36	0,45 ±0,07
Children with epilepsy, n=44	5,14 ±0,38 p<0,05	5,50 ±0,53 p<0,05	3,30 ±0,63 p>0,1	2,11 ±0,24 p>0,1	0,09 ±0,05 p<0,001

Note: p – reliability index of differences from the comparison group.

A comparative assessment of the state of hard tissues of temporary teeth in children with epilepsy and children without this neurological pathology showed an excess in the indicator such as «Decayed» of group of children with epilepsy. Moreover, the indices DFT and DFS of children with epilepsy significantly exceeded the values of healthy children by 1,2 and 1,1 times, respectively (p<0,05; table 1; figure 1).

Table 2

Comparative evaluation of hard tissue parameters of permanent teeth in children with epilepsy and neurologically healthy children, M±m

Indicators/ Group	DMFT	DMFS	Decayed	Filled
Without neurological disorders, n=90	0,48 ±0,05	0,54 ±0,05	0,43 ±0,47	0,06 ±0,01
Children with epilepsy, n=44	3,02 ±0,37 p<0,001 p1<0,001	3,07 ±0,39 p<0,001 p1<0,001	2,14 ±0,39 p<0,001	0,95 ±0,20 p<0,001
Average for Ukraine, n = 1800	0,70± 0,08	0,77± 0,10	-	-

Note:p – reliability index of differences from the comparison group.
p_1 – reliability index of differences from the average for Ukraine.

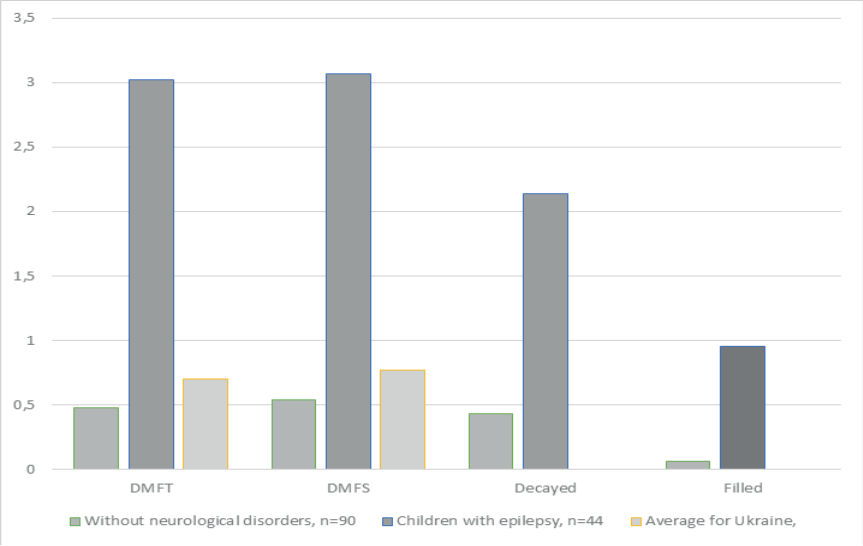

Fig 2. Chart of comparative evaluation of hard tissue parameters of permanent teeth in children with epilepsy and neurologically healthy children

A comparative assessment of the state of hard tissues of permanent teeth in children

with epilepsy and children without this neurological pathology showed a significant excess of 4.98 and 15.8 times in the group of children with epilepsy in the indicators such as «Decayed» and « Filled», respectively (p<0,001; table. 2; figure 2.).

When comparing the average values of the hard tissues of the permanent teeth in children of the main group, children without neurological pathology and average indicators in Ukraine, it is seen that the indices of DMFT and DMFS in children with epilepsy were 4,5 and 4,15 times higher, respectively, than the average for Ukraine (p1 <0.001), as well as 6,29 and 5,68 times, respectively, than in healthy children (p<0,001; table 2; figure 2).

Table 3

Comparative evaluation of parodontal and oral hygiene indices in children with epilepsy and neurologically healthy children, M±m

Indicators/ Group	PMA %	Bleeding, scores	Sample of Sh-P, scores	Tartar, scores	Silness-Loe, scores	Stallard, scores
Without neurological disorders, n=90	12,6 ±1,13	0,13 ±0,02	1,27 ±0,14	-	1,26 ±0,12	1,59 ±0,10
Children with epilepsy, n=44	15,63 ±1,35 p>0,05	0,50 ±0,06 p<0,001	1,39 ±0,05 p>0,1	0,01 ±0,01	0,87 ±0,09 p<0,05	1,03 ±0,09 p<0,001

Note:p – reliability index of differences from the comparison group.

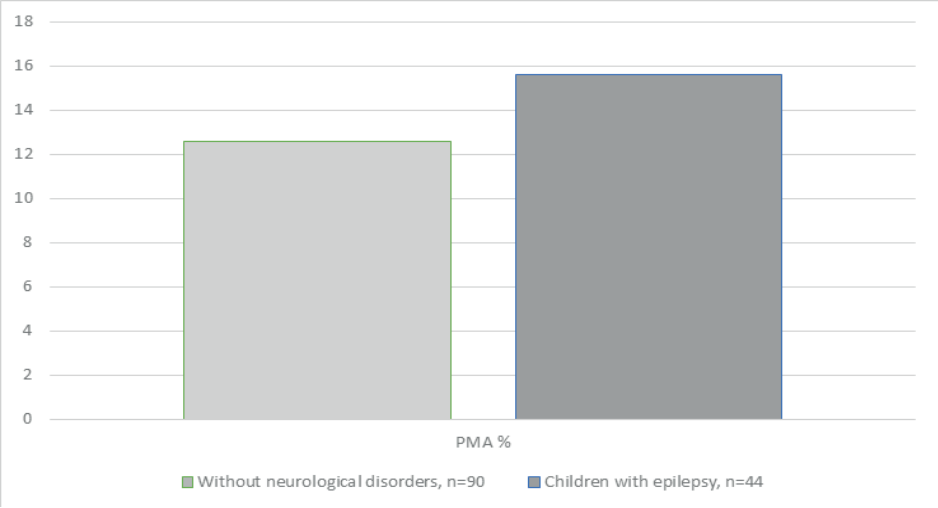

Fig 3. Chart of comparative evaluation of PMA % index in children with epilepsy and neurologically healthy children

A comparison of the average values of parodontal and hygiene indices in children with epilepsy and children without neurological pathology shows that the severity of the inflammatory process (PMA %) in children with epilepsy was 24,1% higher than in children of the comparison group ($p > 0,05$; table 3; figure 3).

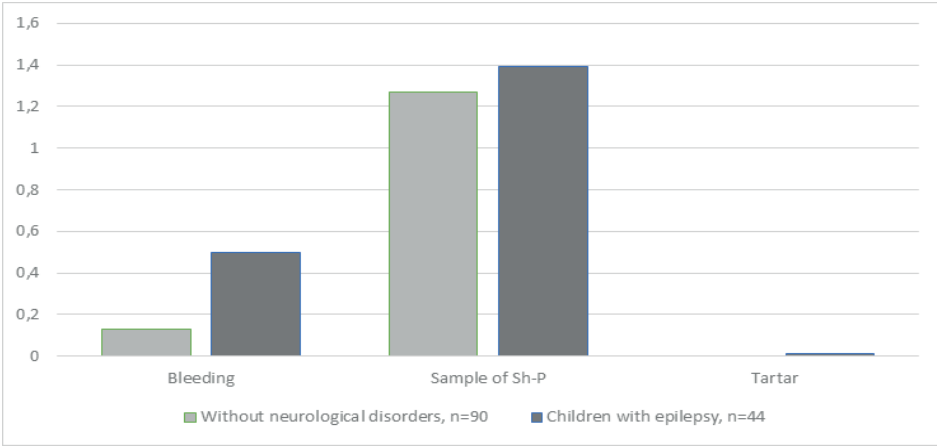

Fig 4. Chart of comparative evaluation of parodontal indices in children with epilepsy and neurologically healthy children

The bleeding index for neurological pathology was 3,84 times reliably higher ($p <0,01$) than in children without this pathology. In children with epilepsy, unlike children in the comparison group, the presence of tartar was observed (table 3; figure 4).

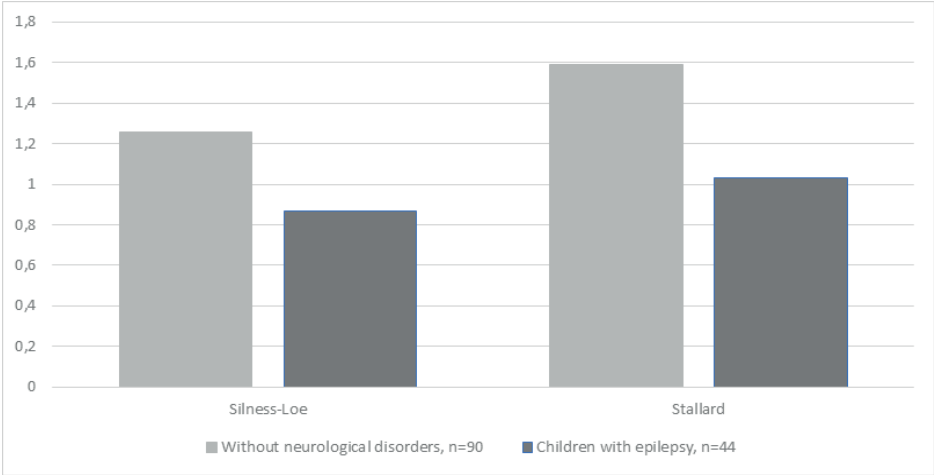

Fig 5. Chart of comparative evaluation of oral hygiene indices in children with epilepsy and neurologically healthy children

It should be noted that the Stallard and Silness-Loe indices in children of the main

group were reliably lower than in children without epilepsy by 31% (p <0,001) and 35,3% (p <0,05), respectively.

Conclusions. The results of the examination of the dental status of children with epilepsy indicate the following:

1. The intensity of decay of permanent teeth according to DMFT and DMFS in children with epilepsy exceeds 4,5 and 4,15 times the corresponding indicators on average in Ukraine, as well as 6,29 and 5,68 times, respectively, than in healthy children;

2. The severity of the inflammatory process in parodontal tissues in children with epilepsy is reliably higher than in children of the comparison group by 24.1%, bleeding - 3.84 higher;

3. The level of oral hygiene in children with epilepsy was significantly better than in children of this age group without neurological pathology;

4. It is necessary to take into account the results of epidemiological studies for the development of schemes of treatment and prevention of the morphological and functional disorders of the oral cavity in patients with epilepsy.

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