EVALUATION OF CERTAIN FACTORS INVOLVED IN THE DENTO-PERIODONTAL TRAUMA IN CHILDREN, TEENAGERS AND YOUNG PEOPLE

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ABSTRACT

Aim to evaluate a number of factors involved in dento- periodontal traumatic injuries .Material and methods: 207 children, adolescents and young adults were evaluated in urban and rural areas in Iasi, aged between 8-24 years who presented symptoms related to traumatic injuries of teeth and periodontium. Patients who had complaints about traumatic injuries of teeth were assessed. Clinical and radiological findings were recorded in a specially designed form to enable the evaluation of clinical and statistical parameters of interest. Results-discussions: The batch consisted of 153 boys (73.91%) and 54 girls (26.09%). A total of 9 patients (4.35%) came from an environment with low living standards, 162 (78.26%) patients had an average level of living and in 36 (17.39%) patients recorded a high standard of living. Applying the t-student test and representing the distribution of patients according to the day of the week in which the trauma was produced, we see that there was a maximum of trauma on Mondays, Wednesdays and Saturdays, with a minimum Tuesdays and Fridays. In terms of the distribution of patients according to the time of the trauma was produced a high incidence was observed between 12.00 and 14.00. Depending of the place where the injury occurred, there were 100 patients (43.48%) where injury occurred during school hours, in 60 patients (26.09%) trauma came at home and in70 patients (30.43%) trauma occurred elsewhere (outside the disco, etc.). Depending of the mechanism of trauma we found that small ages, mixed dentition (8-14 years old - 99 patients) injuries occurred from falls, while patients with permanent dentition (15-24 years -108 patients) both suffered injuries from falls and impact. **Conclusions** The frequency of periodontal dental trauma is directly linked to the sport activities, the brutality of the games, road traffic accidents, and family aggression.

Keywords: traumatic injuries of teeth

The specialized publications signal an increase of the incidence of dental traumatisms at an early age, with an impact on the final dentition, in the context of a general increase of traumatisms [Andreasen JO, 2003].

This increase is directly connected to the development of sports, the increased brutality of games (following the influence of mass-media), the number of car accidents and, last but not least, domestic violence [Balan A, 2003].

For regrettable causes, traumatisms of the final teeth are very frequent, especially in children and teenagers, their number rising lately as a result of the evolution of the means to spend the spare time (risky sports) [Baldava P, 2007].

A real frequency of dental traumatisms is not known because these lesions do not receive medical assistance and are not recorded. [Fischer D, 2007].

Aim of the study consists of evaluation of the epidemiologic profile of dento-periodontal trauma, evaluation of the place where the traumatism occurred, of the human activities and interactions associated with dental traumatic lesions and to test the association between the socio-economic condition and the dental traumatic lesions.

MATERIAL AND METHOD

The study was conducted on 207 children, adolescents and teenagers, coming from the urban and rural environment from Iasi County, aged between 8-24, treated within the Faculty of Dental Medicine of Gr. T. Popa University, Iaşi, in the Clinic of Prevention and the Clinic of Surgery OMF, as well as in the Danident private practice.

The selection was randomised, related to the availability of the patients during the study.

The reasons for showing up to the practice were**:**

- Pain/ sensibility,
- Physiognomic disorders,
- Mobility,
- Tumefaction,
- Coronary discromy,
- Parents' concern.

Sheets of clinical observation were elaborated for all patients and the therapeutic algorithm was established. The patients who accusing the production of post-traumatic dento-periodontal lesions were examined with priority, the data acquired following the clinical and paraclinical examination being filled in the specially designed form in order to make the clinico-statistical evaluation of the parameters of interest.

RESULTS AND DISCUSSIONS

Out of a total of 1475 children, teenagers and young people who seek medical assessment, during a period of 4 years, 207 patients who showed various forms of dental traumatisms were taken into consideration. The time elapsed from the production of the traumatism till the patient reported to the practice varied a lot, ranging from emergencies, immediately after the traumatism, to several years (2-5) since the traumatic event.

The unique or associated symptoms shown by the patients considered in the study were as follows (Fig. 1.):

As it can be seen, the most frequent reason for coming to the practice was physiognomic disorders, followed by the parents' concern, understandably linked the patients' age, most of the lot being made up of school aged children and teenagers. Other reasons were pain/sensitivity and/or dental mobility or teeth discromy.

Distribution in relation to the patients' gender

The lot included 153 boys (73.91%) and 54 girls (26.09%), with ages between 8 and 24 (Fig. 2).

The age of the patients is shown in the figure 2. The value of the calculated average was 14.91, at a standard deviation of 4.74, with a normal distribution of the lot taking into consideration the interval of confidence of the geometric mean. (14.14). A greater incidence is to be noticed around the age of 8 to 10, with a decrease of the incidence after the age of 22 years.

The patients' distribution related to their background

Out of the patients studied, 91.30 % came from an urban environment and 8.70 % from the rural (Fig. 3).

The patients' distribution related to social condition

A number of 9 (4.35%) patients came from families with low living standards, 162 (78.26%) had an average level of living and 36 (17.39%) patients recorded a high standard of living (Fig. 4).

The patients' distribution related to the date when the accident occurred

The patients' distribution related to the weekday when the traumatism occurred is shown in the figures below (Fig. 5, 6).

By applying the t-student test and representing the patients distribution depending on the weekday of the traumatism occurred, we can notice that a maximum of traumatisms occurred on Mondays,

Wednesdays and Saturdays, with a minimum on Tuesdays and Fridays. The average of 3.913043 situated roughly at the middle of the week shows that while there is no homogenous distribution of the number of people who suffered traumatisms depending on the days of the week, there is a difference between the first part and the last part of the week from this point of view.

The table below shows the *absolute, relative and cumulated frequencies* of the patients depending of the *day of the week* when the traumatism took place (Table I).

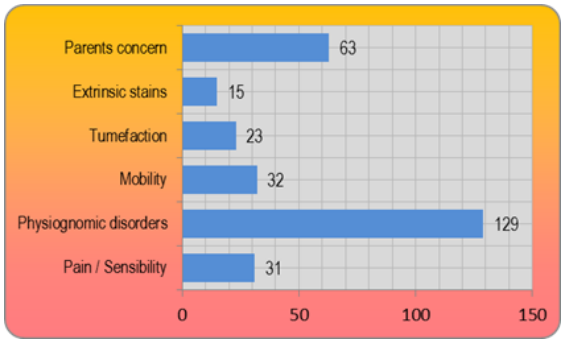

Fig. 1. The distribution of the patients related to the symptoms

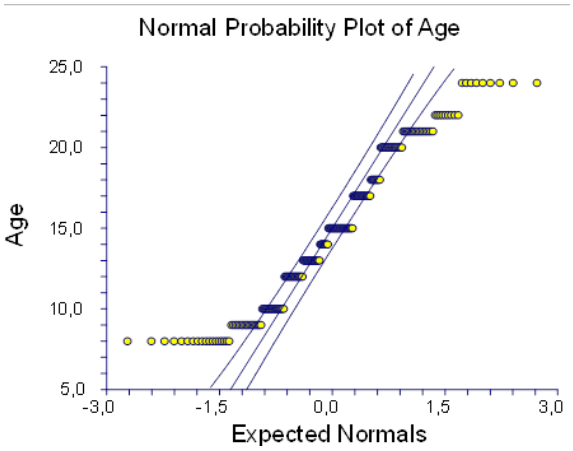

Fig. 2. Histogram of the patients' distribution related to the age

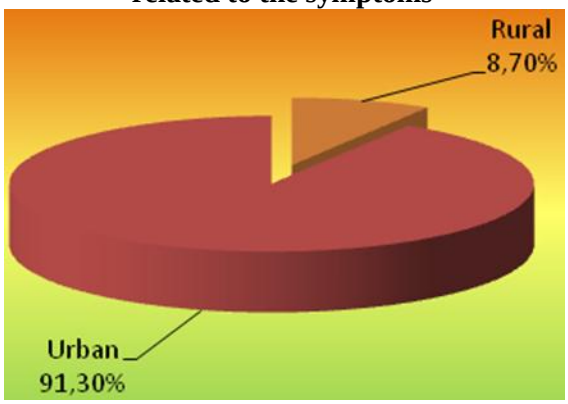

Fig. 3. The patients' distribution related to their background

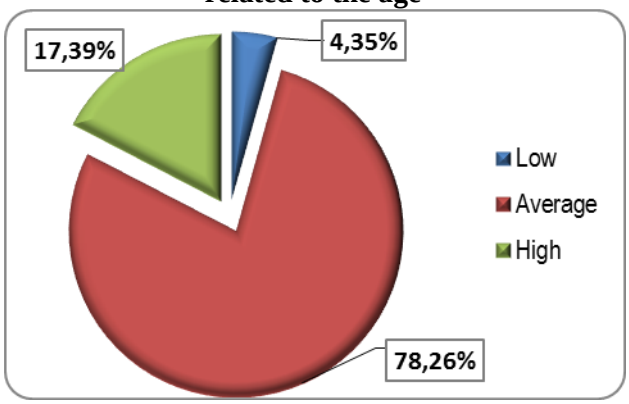

Fig. 4. The patients' distribution related to social condition

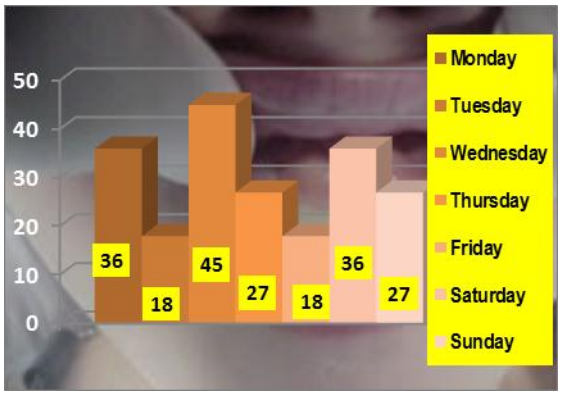

Fig. 5. The patients' distribution related to the day when traumatism occurred

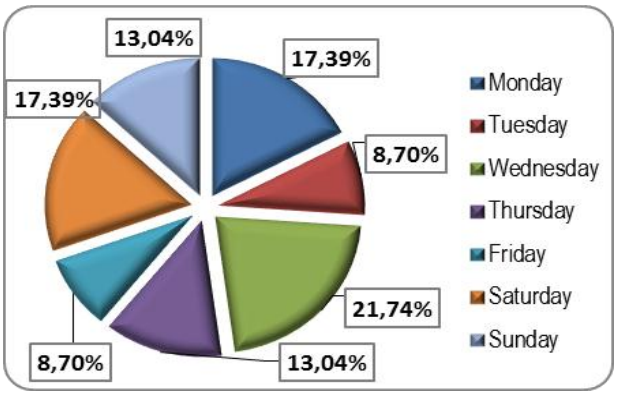

Fig. 6. The relative frequency of traumatisms in relation to the weekday

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Weekday	207	3,91304	2,024648	0,1407227	3,637232	4,188855
T for Confidence Limits = 1,9600						

Table I. The average of patients' distribution related to the day of the week

Weekday	Cumulative Count	Cumulative Count	Cumulative Percent	Cumulative Percent	Graph of Percent
1	36	36	17,39	17,39	|||||
2	18	54	8,70	26,09	|||
3	45	99	21,74	47,83	|||||||
4	27	126	13,04	60,87	|||||
5	18	144	8,70	69,57	|||
6	36	180	17,39	86,96	|||||
7	27	207	13,04	100,00	|||||

Table II. *C*umulative frequencies of the patients' distribution in relation to the weekday

According to the time when the trauma was produced, it was a high incidence between 12:00 and 14:00 (the average was calculated for the considered interval is 14.73, at a standard deviation of 4.67, while the value of the geometric mean calculated is 13.9) (Fig. 7). The interval of confidence in the case of the geometric mean shows a normal distribution of the lot of the patients.

The patients' distribution in relation to the place where the traumatism was produced:

Depending on the place where was the traumatism, in 100 patients (43.48%) the traumatism occurred during school hours, for 60 patients (26.09%) the traumatism occurred at home and for 70 patients (30.43%) the traumatism occurred in other places (outdoors, at the disco, etc.).

From the table and the graphics below we can notice that the boys have roughly twice more incidents than girls at school and at home, while in other places the frequency of events for boys is reaching 85.71% (Table III).

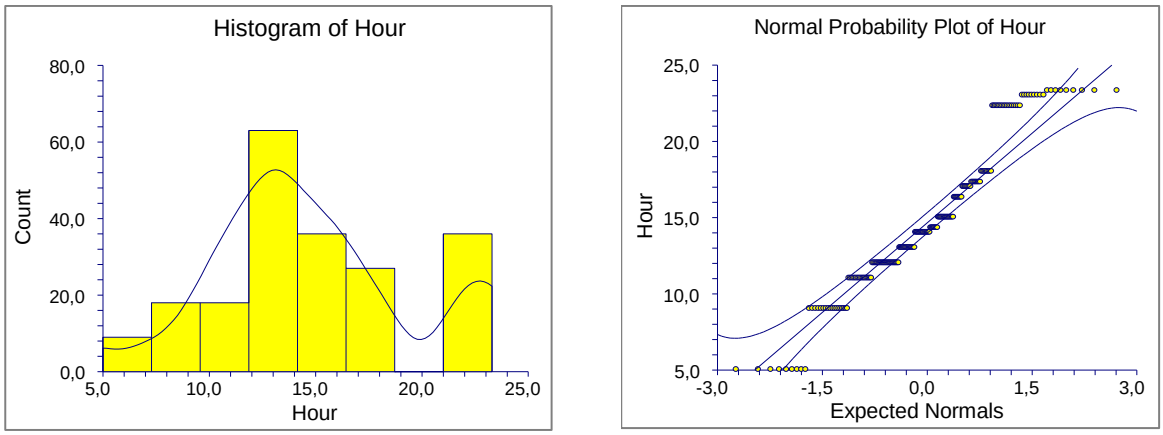

Fig. 7. The patients' distribution in relation to the *time* the traumatism was produced

Sex	School	Home	Other places	Total
Male	63	36	54	153
Female	27	18	9	54
Total	90	54	63	207

Table III. The patients' distribution depending of the place where the traumatism occurred

The patients' distribution in relation to the manner the traumatism occurred

With regard to the manner the traumatism occurred, corroborated with the means of its production, we can notice from Table IV that the traumatism produced following accidents are typically falls (70% of the patients), aggressions following blows (17% of the patients), while traumatism occurred while practicing various sports were produced both as a result of falls (9% of the patients) and blows (4% of the patients) (Fig. 8).

The patients' distribution according to the way this was produced in relation to age and dentition.

it was noticed that for small ages with mixed dentition (8-14 years - 99 patients) traumatisms occurred by falls, while the patients with final dentition (15-24 years – 108 patients) suffered traumatism both as a result of falls and blows.

The traumatism after a fall occurred for 108 patients with final dentition and for 54 patients with mixed dentition. Traumatisms following a blow were met only in the case of patients with final dentition – 45 patients (Table V, Fig. 9).

The patients' distribution depending of the type of traumatism

Of the total of 207 patients, a number of 198 patients suffered dental traumatisms consisted in coronary/corono-radicular or radicular fractures.

The manner the traumatism occurred (accident /aggression/iatrogenic)	Means of production		
	Fall	Blows	Total
Accident	144		144
Aggression		36	36
Sport	18	9	27
Total	162	45	207

Table IV. The absolute frequency of the patients according to the way the traumatism occurred and the means of occurring

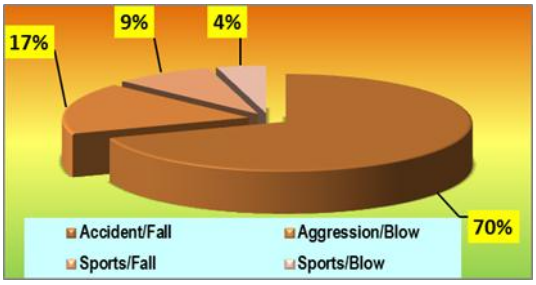

Fig. 8. The patients' distribution according to the manner the traumatism occurred

The means of production of the traumatism	Dentition		
	Final	Mixed	Total
Fall	108	54	162
Blow	45		45
Total	153	54	207

Table V. The patients' distribution according to the means of occurring

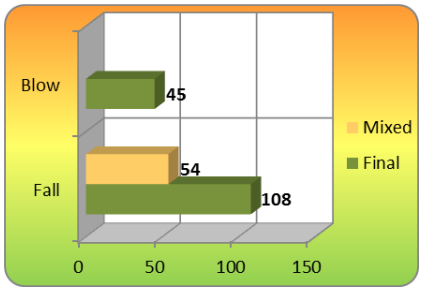

Fig. 9. The patients' distribution according to the means of production of the traumatism and type of dentition

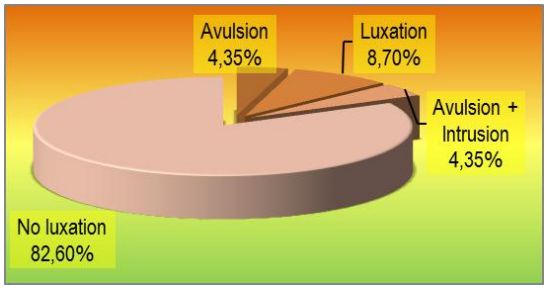

Fig.10. The patients' distribution according to the type of periodontal trauma

Related to the periodontal trauma (Fig. 10), 9 patients (4.35%) had avulsion, 18 patients had luxation (8.70%) and associations between one tooth avulsed and one tooth intrused for 9 patients (4.35%). The rest of 171 patients (82.60%) only had coronary or radicular fractures. All types of luxation were in male patients occurring following accidents or aggressions.

CONCLUSIONS

The characteristics of the studied lot were: 73.91% boys and 26.09% girls with an average age of 14.9 years old, with a high incidence around the age of 8-10 and a decrease of the incidence after 22 years old, 91.30 % of the patients came from the urban environment and 78.26% of the patients had an average income.

A maximum of traumatisms occurred on Mondays, Wednesdays and Saturdays, with a high incidence between 12:00 and 14:00.

For 43.48% of the patients, the traumatism occurred during school hours, for 26.09% at home, 69.57% patients suffered accidents, 17.39% aggressions; 13.04% traumatisms were caused as a result of practicing sports, 78.26% by falls and 21.74% by blows. The incidence of traumatisms resulting from falls is higher in case of boys as compared to girls, blows affecting only boys.

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