Abstract

Imprisoned people are exposed to several risk factors involved in odontal and periodontal pathologies (stress, hereditary factors, smoking, alcohol, parafunctions, oral respiration, eating habits, various implications of systemic pathology). As a function of the detention period, individual oral hygiene and of other additional factors, the general picture of the health condition of the inmates – known as influencing their state-of-mind – may be drawn.

The present study, devoted to the correlation between the risk factors of the odontal and periodontal pathologies manifested in inmates and the detention environment, was performed on a group of patients imprisoned for various time intervals; the experiments evaluated their clinical condition in the beginning of their detention period, by calculation of caries and periodontal indices, and also by tracing of the psycho-social risk factors to which the persons under analysis may be exposed. Mention is made of a special penitentiary-type neurosis, manifested in all patients deprived of freedom. The conclusion of the study is that detention and absence of freedom have a negative influence on the ortho-dental health condition.

Keywords: inmates, penitentiary-type neurosis, stress, oral hygiene

Odontal and periodontal pathologies are highly prevalent in the whole population of Romania, depending first on the educational level, preventive measures against diseases, socio-economic conditions and implications of systemic pathology (chronic diseases with high impact upon the periodontium, such as metabolic, renal, endocrine, cardio-vascular, neuro-psychiatric affections) (1-4). Lately, one of the most frequently mentioned factors viewed as responsible for the initiation and evolution of odontal and periodontal pathologies is the psychological factor – the psycho-social element, manifested within all individuals of our society, both free and imprisoned people (5,6). The reactions of confined people to stress are multiple: physiological, emotional, of cognitive or behavioural type, while the pathology observed is different: the syndrome of dissociated personality, reactional manifestations (sleep disorders, digestive disorders, skin itching (pruritus), dental caries, gingival inflammations) (6,7). The shock of the detention affects deeply the life of the inmates, which is even more intense in the quarantine period (8), being directly proportional to the previous emotional disorders. Neurosis of the penitentiary type appears in all imprisoned people (9), which supports the conclusion reached by psychiatrists that stress acts as a basic factor of any psychic disease: depressions, psychoses, personality disorders; also, stress reactivates other chronic diseases which, under normal conditions, might be kept under control (10).

Systemic diseases represent another element that may influence the odonto-periodontal health condition (11). Metabolic (diabetes), cardio-vascular (HTA, arhythmia, myocardic infarct), renal, endocrine or neuro-psychic diseases may induce the installation and development of the two maladies (caries and periodontal problems). As observed in numerous cases, long-term administration of certain drugs (cyclosporines, drugs blocking the calcium channels, such as nifedipine, sedatives belonging to the benzodiazepine class, anti-epileptic or oral anti-diabetic drugs) do influence the oral health condition (12). Dental losses, caused by either caries or periodontitis, which may be also associated with the eating habits, type of alimentation (soft and sticky food, aliments poor in nutritive principles), types of oral hygiene (neglected oral hygiene), contribute in a decisive manner to the odontal and periodontal pathologies (13). Some vicious habits (such as smoking, consumption of alcohol, coffee and
ON THE PECULIARITIES OF DIAGNOSIS IN THE ODONTO-PARODONTAL PATHOLOGY OF INMATES

drugs), to which both the young and the old ones are more and more frequently addicted to influence negatively the oral health condition.

Materials and method

The study analyzes the correlation between the risk factors of odontal and periodontal pathologies manifested in inmates and the conditions of imprisonment. It has been developed on a group of 103 imprisoned persons, subjected to penitentiary conditions for variable periods of time, whose clinical state had been evaluated both in the beginning of their reclusion and during it, by periodical controls and by calculation of the caries and periodontopathic indices, as well as by tracing of the psycho-social factors of risk to which the persons under analysis might be exposed.

These patients came to the dental surgery for various stomatological treatments, while those under quarantine regime came for filling in their patient record (as the dental formula is viewed as a legal act). The group included 26 women and 77 men, with ages between 19 and 65 years, being either under quarantine or already executing their reclusion punishment (the maximum one was of 21 years), 49 patients being regular offenders.

Results and discussion

The clinical odonto-periodontal examination (calculation of caries indices and of the gingival-periodontal ones) put into evidence the modifications initially observed (that is, in the moment of the first recording). There have been evaluated the dental losses caused by either caries or periodontites, which may be associated with the eating habits, types of alimentation, anatomic anomalies, traumatic occlusions, types of oral practices, lack of interest for oral hygiene, vicious habits and parafunctions, etc.

Interpretation of the etiological factors causing caries and parodontal diseases is based on several theories, each one explaining their occurrence and development in a different way.

Stress is the source of numerous systemic maladies, and equally of several oral diseases. In the population under study, all patients declared themselves as being stressed, form various reasons: juridical, personal, medical, tense relations with their cell mates or conflicts with the penitentiary staff. Emotional factors, such as anxiety, stress, tension, fatigue or agitation, all act upon the periodontium. That explains why, although, in the beginning of their imprisonment, some of them had no periodontal problems, they appeared and get intensified in time. The shock of imprisonment is directly proportional with the emotional disorders having preceeded it: the more sensible persons, the ones with a weak “Ego”, the emotionally- and socially-immature ones, generally, the sick ones, suffer intensely when subjected to imprisonment. An offender is not deviating by the origin of his disorder, but by his belonging to a group viewed as a deviating one (9).

The ways in which the confined people react to stress are of various nature:

1. physiological: muscular tension, spasmodic tics, bruxism, fasciculations, dyspnnea, hyper-ventilation, tachycardia, arhythmia, high arterial pressure, modified electrical conductance of the skin, modified electrical potential, hyper-perspiration;

2. emotional: frustration, hostility, anxiety, tension, irritability, agitation, depression, demoralization, insatisfaction, sensation of helplessness, negative self-evaluation, lability, guiltiness, alienation;

3. cognitive: short- or long-term memory deterioration, reduced concentration, increased ratio of errors and of confusions, reduced decisional, planning and organizational capacity, reduced seeking of information, avoidance or negation, inhibitions and blockages, reduced creativity, obsessive and irrational ideas, reduced tolerance to criticism;

4. behavioural: reduced performance, instability, absence, avoidance, passivity, aggressivity, intolerance, disagreement, deteriorated inter-personal relations, accidents, excess or loss of appetite, sleeplessness,
increased consumption of coffee, tobacco, sedatives, suicidal ideations.

The pathology observed is quite different: syndrome of dissociated personality, reactional diseases (dental caries, pruritus, digestive disorders, insomnia) (6).

In the group under analysis, 18 persons were diagnosed by psychiatrists as affected by personality disorders of antisocial type, each of them following a medical treatment. Also, a case of liminar intellect and an epilepsy case were recorded.

Smoking is known in the literature of the field as one of the most noxious factors for the defense system of the human organism. It favours dental caries and periodontal diseases, which have much rapid evolutions than in the case of non-smokers. The younger is the age at which the youths begin to smoke, the more severe will be their periodontal problems, and the more inefficient will be the treatment applied. Out of the 103 patients under investigation, 81 are smokers: 62 are men (37 of which smoke at least one package of cigarettes a day and 25 smoke 5-7 cigarettes a day) and 19 women (9 are heavy smokers and 10 are moderate smokers), which means that 46.60% of them smoke intensely, 30.10% - moderately, 2.91% - rarely and 20.39% of them do not smoke (Fig.1).

Besides smoking, one should also consider the consumption of coffee and/or soluble coffee. Thus, out of the 103 patients, 83 consume coffee, 36 of whom (30 men and 6 women) are used to drink 3 or more than 3 coffees a day), while 47 (34 men and 13 women) are only moderate consumers (1 coffee a day).

In the pententiary, the prisoners are not allowed alcoholic drinks. Out of the 103 individuals under study, 50 used to drink: 8 men were heavy drinkers (50-100 ml/day) and 42 patients (38 men and 4 women), consumed alcohol only moderately (50-100 ml/week), which gives a 51.46% ratio of ex-consumers (Fig.2).

Eating habits. The daily consumed aliments contain various nutritive principles: vitamins, carbohydrates, proteins, lipides, oligo-elements. Alimentation, aliments’ composition, mastication, play secondary parts. Most of the international reports (8) place Romania in the group of the ex-communist countries characterized by lowest indices of composition, manner of preparation, caloric value, balance among the nutritive principles, preservation conditions, hygiene of preparation and of the depositing spaces. The specific elements of the penitentiary food are: monotony of the menu, unsuitable cleaning of aliments prior to cooking, absence of tasty ingredients (garlic, onion, tomato sauce), interdiction of some basic dishes (fish, fried potatoes, salads, fruits). The menu of a prisoner in Romania includes no or insufficient amounts of chicken or beef meat, vegetables, sweets, fruits. Only the diabetics have a suitable alimentary regime (6). The alimentation poor in nutritive principles, the scarce hygiene, associated with a low cultural level and the stress aggravate the odontology and periodontal diseases, which are, anyway, quite numerous, being recorded as early as the
moment of imprisonment. Out of the total number of 103 persons, 65 consume soft and hard aliments (62.14%), 8 consume only hard aliments (7.77%), the remaining ones consuming especially soft aliments (Fig.3), 57.28% of them at a rapid speed of mastication (Fig.4).

**Alimentary habits**

![Alimentary habits](image1)

**Fig.3. Evaluation of eating habits**

**Mastication speed**

![Mastication speed](image2)

**Fig. 4. Evaluation of mastication quality**

**Oral hygiene** represents one of the most efficient means for preventing formation of the bacterial plaque. The bacterial plaque (the microbial biofilm) represents the key-element in the formation of both dental caries and periodontal diseases, both maladies having a microbial nature. In the penitentiary system, oral hygiene is scarce. In most cases, prisoners have a negative, skeptical attitude. Usually, it appears as more important the opinion of one’s cell mates than the recommendation of the specialized stomatologist, the usual answer being: “the more frequently I wash, the more my gum bleeds, so that it is better not to wash my teeth”.

According to the questionnaires filled in by the prisoners, most of them wash their teeth only once a day (44 persons), although there was recorded a person who washes the teeth 4 times a day and another one who washes the teeth twice a month (Fig.5). Most of them wash their teeth in the morning (79 persons), and only 4 of them after lunch (Fig.6).

**Fig.5. Evaluation of the frequency of dental brushing**

**Fig.6. Evaluation of the moment of dental brushing**

77.67% of the patients apply horizontal brushing, and only 2.91% of them – the circular method (Fig.7). The brushing time varies from 1 (43 persons) to 3 minutes (12 persons) (fig. 8).
The systemic diseases may be included among the risk factors inducing the development of dental caries and of periodontal diseases, as they reduce the immunity of the host organisms by the immunological disorders they cause. Diabetes, cardio-vascular diseases, neuro-psychiatric disturbances influence the installation and evolution of the periodontal disease.

The maladies most frequently recorded in the penitentiary system are especially diabetes, arterial hypertension, other systemic diseases, disturbances of personality, most of the prisoners being subjected to medical treatments.

In the group here under study, 18 persons show personality disorders of antisocial type (15 men and 3 women), 2 suffer from neurological disorders, 4 have hepatic affections (3 men and 1 woman), 2 women have endocrine disfunctions, 7 - hepato-colecistic diseases (5 men and 2 women), 16 - cardio-vascular problems (8 men and 8 women), and 11 have metabolic diseases (diabetes and obesity - 5 men and 6 women).

The genetic factors. For the moment, the connection between the genetic factors and periodontitis is not fully elucidated, several hypotheses, considering genetic predisposition, individual sensitivity and also some additional factors that may play an important part in this respect, being under debate.

Out of the 103 patients under investigation, 35 show genetic predisposition, namely: 7 patients (5 men and 2 women) have periodontal diseases manifested in two or even more members of their family, while 28 of them (20 men and 8 women) have this disease in only one member of their families.

The parafunctions create excessive forces at the level of the periodontal tissues. The most frequently occurring parafunction, the bruxism (the teeth occur in forced occlusal contact, so that anterior and lateral movements are produced both during the day and during the night), may cause modifications in the teeth (pathological abrasion), in the periodontium, in the temporal-mandibulary articulation and in the masticatory muscles, as well. Bruxism, frequently occurring in inmates, may be induced by several causes, of medical type (epilepsy, psychic disorders, either treated or not, occlusal disturbances), as well as by the living conditions during detention.

Out of the 103 confined persons for whom dental records have been filled in, 76.70 % grit their teeth and 69.90% clench them (Figs.9,10).
Do you clench your teeth?

Out of the total number of cases considered for analysis, 58 persons show traumatic occlusion, of which: 18 persons have modifications in only one tooth (16 men and 2 women) and 40 persons - in a group of teeth (28 men and 12 women).

Calculation of the caries and gingival inflammation indices contributes to a better evaluation of the level of individual carious and periodontal affection (DMF-T = no. of carious+obturated+extracted teeth, as a result of caries / total no. of teeth and the total Löe and Silness (GI) gingival index).

Analysis of the DMF-T index shows a certain association between sex and DMF-T. (t=2.39; p=0.018-SS). The more frequently recorded value of DMF-T is of 36.69 for women and of 26.67, respectively, for men (Fig.11).

Analysis of the gingival index of Loe and Silness (GI) evidences a significant correlation between sex and the values of the gingival index (t=2.4; p=0.018-SS). The average value recorded for the feminine sex is of 0.62, the one registered for men being of 0.88 (Fig.12).

Interpretation of the etiological factors of the carious and periodontal diseases was based on several theories, aiming at explaining the occurrence and development of such diseases. The risk factors that may affect the inmates (stress, smoking, alcohol, coffee, the parafunctions, oral breathing, alimentary habits, vicious habits), the detention period and the individual oral hygiene might create a general image upon the health condition of the imprisoned patients. The implications of systemic pathology (chronic diseases), considerably affecting the periodontium, are present in the population under investigation.

Stress, smoking, eating habits, oral hygiene represent the main factors inducing the quick installation and development of odonto-periodontal lesions in the penitentiary environment. All these factors are influenced by sex, by the condition of the regular offence, as well as by the exact duration of detention.

Conclusions


6. Bogdan T., Comportamentul uman în procesul judiciar, Serviciul editorial și cinematografic, Buc., 1983,


8. Bruno S., Mediul penitenciar romanesc, Cultura și civilizație carcerală, Institutul European, 2006,


