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CLINICAL POSSIBILITIES FOR THE ASSESSMENT OF PAIN IN DENTISTRY AND OUTPATIENT ORAL SURGERY- GENERAL ASPECTS

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Abstract

The uncontrolled negative emotional stress, will increase the intensity of the pain experience due to the decrease of the pain threshold and to changes of the tolerance to medication. The most dental treatments are performed under various types of anaesthesia (loco-regional, potentialised, general). In some clinical situations and for specific dental procedures (especially oral surgery) the dentists use a combination of psychologic preparation, pharmaco-therapeutic sedation and loco-regional anaesthesia. The pre-anaesthesia and pre-medication have the role to control the psychic reaction to pain. For the most patients with a balanced psychic, calm and cooperative, the loco-regional anaesthesia techniques can be used successfully.

Key words: pain, fear, anxiety, dental treatment, oral surgery, anaesthesia

The dental care, either simple or complicated treatments, bring patient in a dependent status and inspire feelings of fear. The patients with positive experiences in dental treatments will come with optimism and confidence, while patients with negative experiences will be stressed and cautious.

The main fear of the patient is pain. He will be concerned about the method, technique and quality of anaesthesia and surgery procedure. He will ask also about possible defficiencies regarding the onset and intraoperatory period under anaesthesia that could favourise pain during the surgical intervention or during the postoperatory period. Also the dentists meet less confident patients due both to actual „colder" relation with their dentists and various bureaucratic procedures related to practical guides, anamnesis, interpretation of the clinical and paraclinical data, analyses and imagistic tests. To avoid the increase of the psychologic stress for the patients, the dentists must reduce and adapt all these stages to reduce times and emotional concern. Any proposal for a dental treatment is recorded as an event loaded with unknowable situations and risks. The dentist must explain with patience, by giving positive examples and creating a professional and calm atmosphere. It must be established the psychological status of the patient and his feeling related to the dentist and the proposed therapy. The dentist must

combine his theoretical and practical knowledges with a visible interest for the patient as a human being with feelings and needs of communication and affection. The clinician must use his ability to understand and react based on intuition, to be able to focus on the psychological features of every patient.

The concept of the new holistic medicine considers that „every patient must be seen as a whole and not as separate parts". The dentist has the obligation to record and to „memorize" the patient' personality. It is not necessary for dentist to be a psycholog and to identify behaviour specific features of the patients, but the focus on what is psychologically specific to a patient represents a valuable professional ability. The dentist has the duty to identify some types of psichological personalities. It is recommendable that the dentist to recognise the psychological personalities with a structured behaviour. These are presented further.

- ANXIOUS

The anticipation of phenomenon or pain is more poignant than reality. The patients have a lot of imagination and any unusual event produces extreme tension with exaggerated visceral reactions.

This patient can be left only a few minutes in dental office, but not in dental chair. In the first session, an anamnesis and clinical general exam will be performed in a gentle manner, without any painfull dental procedure. For these patients it is recommended more time before proceeding to dental procedures as fear can decrease direct proportionally with attention and understanding with which they are treated. For these patients, an effective technique is the call of the dentist to their will to resist to pain.

- HYSTERICAL

The hysterical patient behaves apparently normal and balanced. They have the tendency to be familiar and friendly with their dentist. However, when a challenge or a complication emerge, they can react abusive or violent. They have the inclination to combine exagerration of the event with search for confirmation from other people. They even want to draw attention for past symptoms. Some women from this category are predisposed to have provoking manifestations in front of the dentist. With these patients long discussions are not recommended and the dentist' attitude must be less strong, steady, energetic, and less conciliatory.

- OBSESSED

The features of the obsessed patient are as follows: hesitation, indecision, exaggerated focus on irrelevant details, complaints for less important reasons. This patients must be recognised to avoid unpleasant situations.

- PARANOIAC

The paranoiac patient is incredulous, skeptic and difficult to be treated. His ideas about his physical and dental aspects can be strange. It is mandatory for this patient to accept the dental intervention in good conscience.

- AGGRESSIVE

The aggressive patient is a „tough" patient, with great physical resistance and with high tolerance to pain without premedication. However when accidents happened, he reacts extremely harsh, provoking physical aggresions and material damage.

The psychotherapy used by dentists can offer a colaborative support with these types of personalities. The first stage, and most important, is the anticipation of anxiety. A warm and friendly attitude of the dentist will eliminate

or attenuate many distortions and fake perceptions of these patients. A pleasant atmosphere in the dental cabinet, ensured by an attractive furniture, warm colours, quiet atmosphere, soft music, and a friendly and kind dental assistant, will put the patient in a comfortable and relaxing mood. It is requested that the dentist to use more time to gain the trust of the patient. In this context, a group of researchers from Washington D.C. University (USA) established DENTAL ANXIETY MODEL (M.A.S.) (1978). M.A.S. identified four domains of the anxiety:

Mistrust–defined as the sentiment of some patients of lose self-respect, inferiority feeling, or suspicious and doubt about what the dentist does or say. It can reflect previous failures of the communication between dentist and patient.

Anxiety – defined as the sensation of patients that find most situations as difficult and stressfull. The anxiety implies a poor general psychological status without a relevant reasons. These patients must be ensured by dentist with affirmation: "no, this will not happen".

Phobia is linked by specific stimules- injection needle, visualisation of blood, turbine noise, specific smell. The worst phobia category is the panic attack.

Fear of irredeemable ("catastrophy") –fear of uncontrolled organic reaction during the dental treatment. It is rarely seen as cardio-respiratory stop, asphyxia, allergic reactions.

The most frequently seen in the dental cabinet are specific phobia "blood- injection needle", "injection-wounds". Behaviour manifestations appear as inhibition or excitation. The inhibition hinders the anxious to act and to adopt the requested measures in a specific situation. The excitation can alternate with the inhibition or can dominate the clinical picture as agitation, irritation, or even aggresivity.

Physical manifestations:

The physical manifestations are minor in the usual anxiety, but can be intense in anguish or panic attacks. The subjective signs are dominated by the sensation of choking, sensation of pressure in the chest, or respiratory embarrassement.

The change of the muscular tone, asthenia, weakness sensation, bad mood. It can appear frequently pain without organic substrate (headache, tooth pain, pain in the chest). Frequently these patients can develop oral paraesthesia or dysesthesia associated with cold sensation.

The objective signs are related by neuro-vegetative disorders as follows: tahicardia, polipnea, transpiration, hyposialia, congestion, digestive disorders (nausea, defecation disorders), pollakiuria.

Panic attack – rarely seen at an anxious patient, impressive, it take a few minutes, with impredictible onset, it appears when patient see the injection needle, blood, dental instrumentarium, turbine noise, or specific smell.

Relation anxiety - pain in dentistry

The pain is a subjective phenomenon or is a perception of an unpleasant emotional or sensitive experience. The pain is perceived only when painful impulses reach to the level of "conscious mind" and are interpreted as pain. As a conscient pain, it is difficult to quantify due to the association with high subjectivity degree. Thus it can be a great inetrest for the dentist to know the relation between the emotional status of a patient and the pain

experience. In the pain measuring two aspects are important : the threshold and the tolerance.

PAIN THRESHOLD is the moment when a patient perceives first time the stimule asa a painful one.

TOLERANCE is the moment when a patient don't accept the stimulation with higher magnitude or to continue to support the stimulation after a given level of intensity.

The pain threshold is associated with psychological variables (personality, emotional stress, motivation).

The difference between the pain threshold and tolerance is named **PAIN DURATION** or the degree of the pain sensitivity. The in vitro studies related to pain have the clinical limits as anxiety is lacking. The clinical studies found that the decrease of pain is usually associated to the decrease of anxiety. In the clinical studies, the evaluation of pain intensity is based on the patients' declarations that describe pain as burn sensation, pinch, cramp, intolerable, unbearable, stressfull, severe. In 1975 Melzack proposed the most known instrument for the verbal assessment of pain "Questionnaire for the assessment of pain Mc GILL".

The questionnaire assessed the three dimensions of the pain:

➔ sensorial: temporal, spatial, pressure, thermic

➔ emotional: tension, fear, vegetative reactions

➔ evaluative: assessment of pain severity.

The pain exteriorizing at behavioural level can be researched by an evaluator based on systematic observation conducted by using special grid.

In the unidimensional assessment of pain experience can be used scales with verbal descriptors, analogue visual scales, numerical scales, scales with behaviour anchors and imagistic scales.

The most simple and effective scales are *analogue visual scale* and *numerical scale.*

Dintre aceste tipuri de scale utilizate, nouă ni s-a părut că ne oferă măsuri simple şi eficiente în aprecierea intensităţii durerii, *scala vizuală analoagă şi scala numerică.*

The analogue visual scales allow the assesment of pain based on a ruler with two extremes: "absence of pain", and "most intense pain".

The numerical scales require to patient to quantify the pain using numerical values between 0 and 10 or between 0 and 100 (zero represents the absence of pain and 10 or 100 extreme pain).

The integration of pain in the complex of the negative emotional stress associated to the dental practice

The dental anxiety is associated with a negative behaviour and its primary source is pain or fear of pain. The patients with high anxiety are the most sensible to pain and have an avoiding behaviour with dentist or oral surgeon, and many of them have poor oral health. They adress to dental treatment mostly for pain, oral infections, trauma. They can be conscious about unreasonable fear but they cannot control or eliminate this fear.

American Dental Association Council performed in 2013 a study that found that 18 % of population in S.U.A avoid dental care due to anxiety.

A dentist must not only to perform loco-regional anaesthesia but also to manage emotional stress. Melzack (1999) and Milgrom (1998) concluded that "the emotional dimension of the pain is hard to express, as the most proper description is terrifying, horenduous, or killing pain". Craig

describes "the more emotional stress, more sure is the perception of the therapeutic session as extremely painful". Rotaru&Sîrbu (2001) hihlight the fact that the pain induces anxiety and the anxiety triggers muscular spasms in the pain area. The negative emotions can be a good predictor of the pain, the way in which the patient accepts the therapy and the success rate of the treatment.

Weisenberg (2000) considers that "the most easy way to obtain a negative reaction is a short visit in the waiting room of a dental practice, to trigger fear and anxiety". As a result to this reaction, the patient will further avoid the dental treatments.

SCALES

The uncontrolled negative emotional stress increase the intensity of the pain experience, by decreasing the pain threshold and modifying the tolerance to medication.

Various "instruments" have been proposed for the assessment of the anxiety by using questionnaires or analitic evidences.

The most known are Questionnaire for the assessment of anxiety as a state or feature (STAI X_1, X_2) and Corah Scale (DAS- DENTAL ANXIETY SCALE). For the analitic evidence it is recommended Scale of assessment of anxiety symptoms in front of pain (PASS).

Corah Scale is recommended as the most known "instrument" for the assessment of the patient' anxiety in front of the dental treatment. Corah Scale entered in the international circuit as DAS "DENTAL ANXIETY SCORE" SCALE. This scale contains 4 items that describe various situations associated to the dental treatment. The patients can choose one of 5 responses, a response that describe in the best way his psychological state.

The most known fear scales are Kleinknecht Scale and Hilimans Scale. These scales use Fear Questionnaire that assess the fear feeling of the anxious patients. Another important scale is Hamilton Anxiety Scale (HAS) that assess the anxiety in relation to the frequence and the intensity of the neuro-vegetative (autonom) manifestations. The responses classify the patients in three groups(HAS score):

Anxiety score 1 = mild anxious patient
= between 2-5 symptoms ;

Anxiety score 2 = moderate anxious patient = between 5-10 simptoms ;

Anxiety score 3 = severe anxious patient
= between 10-17 simptoms.

Omher Scale is a scale used to measure the anxiety to children with age between 3-12, using 5 images of children faces.

The pain play an important role in the modulation of the cardio-vascular response. The variations of the pulse rate and arterial tension (usually in physiologic limits with spontaneous return to the range of normal values) are determined mostly by the anticipation of visit to the dentist or by painfull dental procedures. The anticipation of visit to the dentist constitutes an emotional stress both for anxious patients and nonanxious patients. The changes of the heart rate and arterial tension are recorded for both categories of patients, but for anxious patients the fluctuations (correlated strongly with DAS scores) are higher for anxious patients.

Brand&Gortzak 1995 completed the studies related to the neuro-vegetative manifestations related to dental anxiety , by establishing relations between Dental Anxiety Score and the pulse rate. The authors found significant differences related to cardio-vascular function between various patients during the same dental

treatment. Brand , Gortzak 1995 classified the anxious patients in the categories as follows :

1. NON-REACTIVES = low DAS
   Patients with constant cardio-vascular values.
2. REACTIVES = moderate DAS
   Patients with moderate increases of the cardio-vascular parameters.
3. HYPER-REACTIVES = high DAS (maxim)
   Patients with significantly higher values of the cardio-vascular parameters.

PRE-ANAESTHESIA

The uncontrolled negative emotional stress, will increase the intensity of the pain experience due to the decrease of the pain threshold and to changes of the tolerance to medication. The most dental treatments are performed under various types of anaesthesia (loco-regional, potentialised, general).

Any of these types of anaesthesia can be not enough to prevent or to control the pain in the dental practice. In some clinical situations and for specific dental procedures (especially oral surgery) the loco-regional anaesthesia is overpassed and the dentists use a combination of psychologic preparation, pharmaco-therapeutic sedation and loco-regional anaesthesia.

The pre-anaesthesia and pre-medication have as primary goal the control of the psychic reaction to pain. In the modern medicine the preparation of patient for anaesthesia and surgical intervention is an important stage. Due to this stage the patient will reach in the dental cabinet trustfull, without psychological trauma, and with relevant informations about the surgical procedures that will be used during the treatment sessions.

As the proposal for any dental treatment is perceived as a riskfull and undesired event, the dentist must inspire, by his moral and professional attitude, total confidence for his patients.

For the most patients with a balanced psychic, calm and cooperative, the loco-regional anaesthesia techniques can be used successfully.

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