

# Dental anxiety and controlling

F.Belgin ATAÇ<sup>1</sup>, Bahar ÖZÇELİK<sup>2</sup>, Aytekin TEMİZER<sup>3</sup>

*Dept.* of Obstetrics and Gynecology, Perinatology and Bio-Engineering Unit, Endodontic Clinic and *Dept.* of Analytical Chemistry of Hacettepe University, ANKARA, TURKEY

*Dental anxiety is considered as one of the major problems for good oral care. The reason can be due to the result of direct or indirect experiences. However uncontrolled dental anxiety affects both the patient and the dentist and causes difficulties during treatment. So it should be altered before the dental medication starts. Behavioral management, hypnosis and biofeedback are the three approaches used in reducing dental anxiety. But they are not common in our culture. Therefore new strategies should be devoted for individuals in our culture.*

*Anxiety is the fear uncertainly. So we asked the patients included in this study to wait an hour in the dental office and had short interview with the dentist who will make the medication. State anxiety scoring and serum Cortisol levels were measured in the pre and post waiting periods. There was a statistically significant decrease in both the anxiety scores ( $p < 0.017$ ,  $t: 2.5$ ) and serum Cortisol level ( $p < 0.0001$ ,  $t: 8.363$ ) at the end of one hour of waiting period. Since the operation has not completed at the time of second sampling the reduction of the anxiety can be explained on the basis of adaptation. [Turk J Med Res 1993, 11(5):240-242]*

Key Words: Anxiety, Dental office, Adaptation, Cortisol.

Dental anxiety may create an obstacle for dental procedure and may even prevent patients from accessing treatment. It is known to be one of the most important problems for good oral care. The early surveys indicate that 5 to 6% of adult population avoided dental treatment because of extreme fears while a large percentage of the adult population postponed dental treatment until a problem appears (1,2). Moreover the patients' anxiety in dental office affects the dentist too. As a result, both the patient and dentist are exhausted by what might take place under more relaxed circumstances as a simple procedure. So the dentist has to overcome dental anxiety before the medication (3).

Stress is an individual's cognitive, integration of internal and external events judged (consciously or unconsciously) to be threatening, harmful or challenging (4). As a result of exposure to stressors both psychological and physiological responses arise. The psychological one expresses itself as an increase in anxiety while

the other leads to the activation of hypothalamus which is followed by the secretion of Cortisol (5,6).

However stress is a perceptual phenomenon, so the dentist has difficulties in developing their strategies which will reduce the dental anxiety. Behavioral management, hypnosis and biofeedback are the three update approaches used in anxiety control (7).

The present study evaluates the effect of waiting in the dental office before the dental medication.

## MATERIALS AND METHODS

This study was carried out on 31 healthy adult patients without any endocrinological disorder.

At the time of first application 5 cc blood sample was obtained from the antecubital vein and then the patient was asked to fill the state anxiety questionnaire. One hour after the first meeting the blood sampling and filling the questionnaire forms were repeated. During the one hour of waiting period all patients were rested in the waiting room and had a short interview with the doctor who will make the dental medication before the second sampling procedures.

The pre and post waiting serum Cortisol levels were measured by using Dissociation Enhanced Lanthanide Fluoroimmunoassay (DELFLIA) where the char-

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Correspondence: F. Belgin ATAÇ

Perinatology and Bio-Engineering Unit,  
Department of Obstetrics and  
Gynecology, Hacettepe University,  
Ankara, TURKEY

acteristic fluorescence of the 2 naphthyltrifluoroacetone chelate was measured by using 1230 Arcus Fluorometer (8-13).

In order to determine anxiety The State and Trait Anxiety Inventory which was developed by Spielberger and adapted in to Turkish by Oner was used. Since this test was a self evolutionary test, the patients were asked to fill the questionnaire by themselves without a time limitation. This questionnaire was consisted of ten direct and ten indirect statements. For each statement there was 4 possibilities as none, few, a lot and completely. The patient was asked to mark his feeling about the statement. In calculation the anxiety scoring, the reverse phrases was subtracted from the sum of the direct phrases and 50 points were added. High score yields high anxiety (14).

By using Systat program, the statistical calculations were done. (The applied tests were paired t test, Pearson Correlation Matrix, Linear Correlation and Regression Analysis)

## RESULTS

Table 1 shows the pre and post waiting serum Cortisol and state anxiety levels. The reduction in both serum Cortisol and state anxiety levels were found to be statistically significant (Table 2).

## DISCUSSION

The dental anxiety represents a potent problem both for the patient and the dentist. So the dental professional ought to have an understanding about the nature of dental stressors and know the strategies to cope with dental anxiety.

In foreign countries stress management programs are widely used. However in our Turkish culture these kind of applications are not that much common. So we have to find new strategies suitable for the individuals in our culture. At this point of view it should be underlined that anxiety is the fear of uncertainty. Forexample before the examination most of the stu-

dents have a high anxiety score and during the examination time this anxiety is decreased. (Dr Semple worked on the endocrine effects of examination stress). This psychological stress caused increased level of anxiety and though the activation of the endocrine response take place (15). The reduction during the examination period was explained on the basis of adaptation.

In this study anxiety induced by endodontic treatment represents a potent stimuli and has started the classical reaction mechanism. We used serum Cortisol level as an endocrinological parameter and in order to asses the psychological response State Anxiety Scoring was used (15,16). A high level of serum Cortisol and state anxiety was observed at the time of first application. It is known that the elevation of the anxiety is observed in the dense stressing media. However there was a statistically significant decrease in the level of the two parameters in the post waiting sampling. Since the treatment has not finished at the time of second sampling pain could not be the reason of anxiety.

During the waiting period the subjects were asked to wait in a silent place and had chance to talk with the dentist who will make the dental treatment. So they get information about the dental procedures.

The statistical results showed that the patients have fear of uncertainty rather than the fear of medication. The interview with the dentist and waiting cause adaptation which help the patient to cope with dental anxiety.

Moreover the friendly interview with the dentist about the medication is neffective method in reducing anxiety. We believe that the calm and friendly manner of the dentist is the most important way in reducing the anxiety. The similar findings were also underlined by Cakar and Qakar by the importance of psychological approach of the dentist to the patient during the tooth extraction.

### Dental anksiete ve kontrolü

*Hastaların diş hekimine baş vurmasını engelleyen en önemli faktör kaygıdır. Hem hastaya, hem hekime zorluk yaratacak bu sorunun giderilmesinde günümüzde hipnoz, biofeedback gibi çeşitli yöntemler kullanılmasına rağmen bizim ülkemizde yaygın değildir. Bu nedenle, dental anksietenin azaltılmasında kendi toplumumuz ve kültürel statümüze uygun yöntemlerin belirlenip kullanılması düşüncesiyle bu araştırma planlanmıştır.*

*Bu çalışmada çalışmamıza dahil edilen hastalarda önce anlık kaygı puanları, serum kortizol düzeyleri uygun yöntemlerle belirlendi. Ardından tedavi öncesi bir saat süreyle bekleme odasına alınan bu hastalar tedaviyi uygulayacak diş hekimi*

**Table 1.** Pre and post waiting anxiety and serum Cortisol levels (mean±S.E.)

| Measured parameters | Pre          | Post         |
|---------------------|--------------|--------------|
| Cortisol (nmol/L)   | 411.00±23.47 | 279.30±19.54 |
| Anxiety             | 41.04±1.54   | 38.54±1.40   |

**Table 2.** Results of paired t test

| Measured parameters | t     | p      |
|---------------------|-------|--------|
| Cortisol (nmol/L)   | 8.363 | 0.0001 |
| Anxiety             | 2.517 | <0.017 |

ile konuşmaya tabii tutuldular. İkinci kez her iki parametrede ölçülüp ilk değerlerle istatistiksel yönden karşılaştırıldığında; anlık kaygı ( $p<0.017$ ,  $t:2.517$ ) ve serum kortizol düzeylerinde ( $p<0.0001$ ,  $t:8.363$ ) istatistiksel yönden önemli olan düşüş kaydedilmiştir. Sonuçta diş hekimine başvuran hastaların, sakin ve huzurlu bir ortamda göreceklere tedavi hakkında bilgilendirmek suretiyle kaygılarının azaltılabileceği kanısına varılmıştır. [Turk J Med Res 1993, 11(5): 240-242]

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