

Case Report

Novel Approach to Anxiety Management: Collaborative Opportunity Medical and Dental Professionals

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Abstract

Multiple patients suffering from anxiety present routinely to the dental operator. The etiology of all patients in this study were unrelated to dental anxiety and were of mixed origin. In this report we summarize the surprising response of 3 individuals provided with three formulations developed for continuous care of dental implant patients which do contain anxiolytic actives and ingredients. Medical analysis of these patients indicates essential underlying processes associated with global causes of anxiety gives impetus to treatments becoming available to the dentist. Situational awareness, recognition and treatment successfully of the anxious patient reinforces the critical shared role dentists and physicians play in providing health care.

Introduction

Anxiety is the most common mental health condition worldwide with both psychological and physiological features that can affect males and females of all ages. It varies in duration and intensity ranging from mild to debilitating. According to the National Institute of Mental Health (NIMH) an estimated 31.1% of US adults experience anxiety at some point in their lives [1].

A common source of anxiety is dental anxiety and is considered the fifth most common cause. Other anxiety disorders that influence dental practice are phobias, with dental phobia being the most common [2]. The Diagnostic and Statistical Manual of Mental Disorders (5th edition; DSM-5) classifies dental phobia as a “specific phobia”, and under the blood- injection - injury phobia type which has a strong vasovagal and a greater pain response compared to other types of phobias [3,4]. Simple procedures become more complicated, require more time, and create additional stress for the patient and the dental team [3,4]. Avoidance is the coping mechanism and often leads to missed dental appointments that can result in serious consequences. Untreated dental problems worsen with time. This can be a self-fulfilling prophesy of increased pain creating a cycle that reinforces avoidance behavior and reduces the quality of life [5].

In the dental setting anxiety is managed primarily by using benzodiazepines (such as alprazolam and diazepam) at the time of the appointment. These drugs can cause unwanted side effects including sedation, imbalance and addiction. Alternative effective management methods are necessary to reduce anxiety and improve

overall quality of care. Currently, an important shift away from traditional pharmaceuticals is the recognition that certain vitamins, cannabinoids, and hormones are effective in treating psychiatric conditions, particularly depression and anxiety disorders [6,7]. In psychiatry it is common practice to obtain vitamin D3 and B12 levels on patients. This is part of a standard depression panel that is utilized prior to the administration of drugs. If levels are low, supplementation is provided. There is evidence that this approach can be expanded to other areas of health care including dentistry.

Presented here are three case studies illustrating the anxiolytic effects of the newly developed plant-based products produced by DenticDS™: Patient Comfort, Recovery, and Assist. A discussion will follow describing the products and their ingredients.

Case 1. Eric

Eric is a 69 yr. old Dutch tennis coach. He is 6’4” with an athletic build and is in good health, but experiences dental anxiety. Eric has avoided going to the dentist after a frightening experience as a child and now only goes when forced due to dental pain. Consequently, Eric has an upper complete denture and multiple missing back teeth. At a routine screening appointment, Eric displayed noticeable anxiety. He perspired heavily and paced about in the waiting room. The first words out of his mouth are “I know I’m a bad dental patient”.

The screening examination revealed that Eric only required a simple filling, but he was afraid to return for treatment. He agreed to try Patient Comfort and was able to sleep through the night prior to treatment, successfully tolerate the local anesthetic and receive a filling. Eric was extremely proud that he was no longer a “bad patient” and agreed to return for a hygiene appointment if he could use Patient Comfort. The cleaning went well, and Eric was again very pleased with the outcome.

As a side note, Eric returned to my office and requested Patient Comfort to control his anxiety related to an upcoming air flight to the Netherlands since he also had a fear of flying.

Case 2. Dave

Dave is a 47 yr. old businessman who was seen due to a toothache.

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The diagnosis was irreversible pulpitis involving tooth # 30. It was obvious that Dave valued his teeth since he had several crowns and fillings. When Dave was presented with a proposed treatment plan of a root canal and crown for his tooth, he hesitated and stated he would prefer to have his tooth extracted. After further discussion, Dave related that a family member experienced severe pain with a root canal, and he was afraid the same would happen to him. Dave was offered Patient Comfort to help control his anxiety. The procedure went well, and Dave raved about Patient Comfort. He now uses it prior to all his dental appointments.

Case 3. Marie

Marie is the office manager of a busy dental practice. She states she feels very stressed due to the demands of her job and she also has difficulty sleeping. The dental team of her office has been using Recovery and Assist for their patients with great results. Marie began using it as well and had improved sleep and reduced anxiety. According to Marie, this improved the quality of her life, and now she can enjoy her work.

Marie’s case illustrates the dual role of Recovery and Assist. It is not only effective for dental anxiety and sleeplessness but can also expand to reduce stress related anxiety with sleep disturbance.

Product Discussion

The DenticDS™ products are a unique combination of vitamins, the hormone melatonin and broad spectrum phytocannabinoids that work synergistically to reduce anxiety and improve sleep. The products used in the case studies are Patient Comfort, Recovery and Assist.

Patient Comfort

Includes a daytime and nighttime formula. It is composed of six of the eight B vitamins in the vitamin B complex that has a large body of research supporting anxiety reduction and improved mood. The vitamin B complex support every aspect of cellular physiological functioning within the brain and nervous system, and are also involved in the production of the neurotransmitters serotonin and GABA [7].

Patient Comfort also includes ascorbic acid (vitamin C). This vitamin is well-known as an antioxidant with neuroprotective effects. Low levels of ascorbic acid are associated with anxiety, stress and depression. Study data reveals ascorbic acid is an effective treatment therapy for psychiatric illnesses. Not only does it reduce anxiety but is also useful in the prevention of anxiety and depression [8].

Melatonin is a hormone produced by the pineal gland and has long been used to promote sleep. It is also an important antioxidant that works synergistically with vitamin C [9]. This hormone is directly released into the cerebrospinal fluid (CNS) where the concentration of melatonin is higher here than in the blood. As it diffuses into the neural tissue its antioxidant properties contribute to the normalization of the stress reaction and anxiolysis. Results from current research reveal that it is useful in the treatment of anxiety and found it more effective than alprazolam in people undergoing various elective surgeries [9].

Broad spectrum phytocannabinoids refer to a type of CBD that contains every compound found in the cannabis plant except THC. Multiple studies have been conducted and shown that these have been highly effective in treating anxiety [10,11]. The anxiolytic effect is mediated through serotonin receptor agonism and activity in the limbic system. This occurs without the confusion and sedation of

benzodiazepines [12].

CBD can be particularly useful in the management of dental phobia. Single-photon emission computed tomography (SPECT) scans are useful in measuring anxiety levels by providing information about blood flow to areas of the brain associated with anxiety. The scans revealed that CBD reduced anticipatory anxiety that is a prominent feature of phobias [12].

Recovery and Assist

These products were formulated originally to promote wound healing and improve sleep after oral surgery. Clinical observation and case studies have shown a serendipitous result of reduced anxiety and improved mood. The ingredients include vitamin D3, vitamin A, vitamin K2, and ascorbic acid. Also included are broad spectrum phytocannabinoids and melatonin which were discussed above.

Research in the pathophysiology of depression and anxiety reveals vitamin D receptors are located in the brain, specifically the prefrontal cortex, hippocampus, cingulate gyrus, thalamus, hypothalamus, and the substantia nigra. These areas are important in the pathophysiology of depression and anxiety and that low vitamin D levels correlate to these conditions [13].

Also notable is that vitamin D and vitamin K2 work synergistically to improve mood. Vitamin K2 is known for blood clotting and bone metabolism. Studies are expanding to include its importance in depression and anxiety. Vitamin K2 has been found to have multiple neuroprotective properties and contributes to the synthesis of lipids that are in high concentrations in healthy brains [14].

Another finding is the role that vitamin A plays in mood improvement. Vitamin A (beta-carotene) is generally associated with vision but has been found to be crucial in brain development and neuroplasticity. A meta-analysis that included 25 observational studies found that higher vitamin A levels were associated with 17% to 37% decreased risk of depression and vitamin A levels were lower in depressed participants than controls [15].

Conclusion

Multiple patients suffering from anxiety present routinely to the dental operator. The etiology of all patients in this study were unrelated to dental anxiety and were of mixed origin. In this report we summarize the surprising response of 3 individuals provided with two formulations developed for continuous care of dental implant patients

Table 1: Negative systemic effects of anxiety.

| | |
|-----------------------|-----------------------------------|
| Nervous System | Increased Cortisol |
| | Increased Adrenalin |
| Cardiovascular System | High Blood Pressure |
| | Rapid Heart Rate |
| | Heart Disease |
| | Stroke |
| Respiratory System | Chest tightness |
| | Weakness |
| | Hyperventilation |
| | Tingling in extremities |
| Digestive System | IBS |
| | Constipation |
| | Diarrhoea |
| | Peptic Ulcers |
| Physical Effects | Temporomandibular Joint Disease |
| | Leg, back, neck and shoulder pain |
| | Tension and Migraine Headaches |

which do contain anxiolytic actives and ingredients. Medical analysis of these patients indicates essential underlying processes associated with global causes of anxiety and gives impetus to treatments becoming available to the dentist. Situational awareness, recognition and successful treatment of the anxious patient reinforce the critical shared role dentists and physicians play in providing health care.

Despite advances in technology that have revolutionized modern dentistry, little has changed with the management of dental anxiety until now. The development of the DenticDS™ products offer a welcome solution beyond the standard pharmaceuticals currently used. The ingredients are all natural and tolerated well. They reduce anxiety and promote sleep which will increase patient compliance and improve the patient/dentist relationship.

Also notable is the dual role these products can play. The case studies of Eric and Marie presented in this article show that not only were the products extremely helpful in the dental setting but found to be useful in other stress related situations.

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