

Review Article

Case Studies: Phytocannabinoid Dental Products Exhibit Widespread Clinical Utility in the Generalist's Dental Operator

Nikoll Sanchez Garrido*

Advanced Dentistry of Citrus County, Lecanto FL, USA

Abstract

A series of case studies illustrate that Phytocannabinoids possess multiple properties applicable to dental disease. These include anti-inflammatory reduction in pro-inflammatory molecules such as TNF-d and IL-1.6, anti-microbial activity including against multi-drug resistant (MDR) staph aureus, and collagen stimulation important in wound healing. To date we have successfully utilized Phytocannabinoid Anti-Inflammatory Rinse (PAIR) with mild and moderate gingivitis even in the face of significant systemic inflammatory processes, lichen plans, thrush, mucosal sores from physical irritation, post-chemotherapeutic oral mucositis and the painful effect of post- whitening procedures. PAIR is also our rinse and irrigant of choice reducing irritation and discomfort associated with scaling and root planning. PAIR supports the oral microbiome's commensal bacteria necessary to maintain oral health. PAIR further supports fibroblasts and collagen production unlike chlorhexidine and alcohol-based mouth rinses. This product has wide utility in the dental operator!

Introduction

Patients present to general dentists with a broad-spectrum of ailments on a daily basis. We have been trained and therefore it is our responsibility to treat not only the presenting dental complaint but also the person as a whole. The oral cavities' correlation to an individual's overall health plays an important role and one that is frequently overlooked. As a dental health provider, it is the responsibility of the general dentist to treat these ailments with products that promote overall health and benefit to patients. The DenticDS™ line of products provide a healthy approach to the treatment of disease and promotion of oral and systemic health with the activation of the body's own cannabinoid system. My team of dentists and hygienists have been using DenticDS™ PAIR (PAIR Rinse) [1], Recovery and Patient Comfort [2] Products for several months. In this time, we have collectively seen the improvements in patient care with the use of the PAIR Rinse, Recovery and Patient Comfort. Notably, the PAIR rinse has an impressively wide-range spectrum of indications from pre- and post- surgical care for dental procedures to alleviating tissue burn from peroxide whitening to systemic anti-inflammatory support for gingival tissues. With the use of DenticDS™ product formulary, patients are being afforded well-rounded care.

In our practice, we have seen numerous cases attesting to the effectiveness and safety of the DenticDS™ products. Below, presented as case studies, are representative presentations, treatments and outcomes.

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***Correspondence:** Nikoll Sanchez Garrido, Advanced Dentistry of Citrus County, Lecanto FL 34461, USA, Tel: 352.527.8585

Case 1: Pre and Post Care for Treatment of Root Canal, Crown Lengthening, Crown Restoration

Introduction

Patient presented with high dental anxiety at a limited exam appointment where a diagnosis of tooth #14 was as follows: gingival inflammation, deep distal caries close to the alveolar crest and into the nerve.

Case presentation

- During the chairside exam it was evident from the patient's body language and voice that he was anxious. He was perspiring, fidgety and speaking rapidly. Patient was asked and he rated his dental anxiety to be 9 out of 10 and stated, "You have no idea how hard it is to be in this chair right now".
- Clinical exam showed the gingival tissues to be bright red, swollen and hypertrophic. Hard tissue examination of tooth #14 showed large caries compromising more than 40% of the distal half of the tooth. This was confirmed by the radiograph. It was additionally determined that the caries was within 2 mm of the alveolar bone and would violate biological width.

Management and outcome

- First to be managed was the dental anxiety and gingival inflammation. Patient was sent home with Patient Comfort for anxiety and PAIR Rinse for gingival inflammation. Patient received an appointment to come back for root canal treatment of #14 2 weeks later.
- At the root canal appointment, the patient's body language and speech suggested a well-rested (i.e. he had a good night's sleep) and calm individual. Patient stated he followed both products as directed. When asked how he felt he stated "very mellow". Clinical presentation of the soft tissues showed reduction of gingival inflammation with less swollen pink

tissues. The root canal treatment was completed, and well tolerated by the patient. He was calm and still through the lengthy procedure. Patient received an appointment for the restorative procedure.

- At the crown lengthening and crown preparation appointment the patient seemed more alert than the previous appointment. When asked he stated that he felt more anxious than at root canal appointment. On review of operatory notes at his last appointment he was not given the Patient Comfort to take for this appointment. We then managed his anxiety with aromatic oils and by guiding him through the appointment. He tolerated the procedure well and was proud that he was able to get through the appointment.
- At the final crown restoration delivery appointment, the patient was now calm upon arrival and had no issues. Temporary crown was removed, and tooth and tissues cleaned with minimal to no bleeding as the patient was still using the PAIR rinse. After post-cementation a segment of residual cement was lodged in the interproximal area and its retrieval involved a lot of tissue manipulation. He stated that the area was throbbing and ached from the cement retrieval. PAIR rinse was then used to irrigate the interproximal area and the patient felt immediate relief due to the soothing properties of the rinse.

Discussion

- This case was one in which the DenticDS™ PAIR Rinse and Patient Comfort were both used to successfully treat the patient and his clinical presentations. With the use of PAIR Rinse his gingival tissues improved from bright red, swollen and bleeding to pink, tight and manageable. His anxiety was managed with Patient Comfort which gave him the confidence to deal more positively with future dental treatments. For the patient the biggest accomplishment was overcoming his dental anxiety.

Case 2: Crown Prep; Tissue Management

Introduction

- Post-operative discomfort of crown preparation procedure on #20.

Case presentation

- Patient came into the office with large Distal Occlusal decay that involved more than 1/3 of the dental cusps. Thus, full coverage crown for #20 was diagnosed.

Management and outcome

- After the removal of all caries and adequate crown preparation a final impression needed to be taken. To do this, retraction cord is packed into the gingival sulcus to retract the gingival tissue to achieve proper isolation for a precise impression.
- Once the anesthesia had worn off patient complained of the area throbbing and feeling "hot". He was instructed to use PAIR Rinse as directed. Minutes later he reported that the area no longer throbbed and that the area now felt cooled and soothed. He had immediate relief from discomfort.

Discussion

- With the PAIR Rinses soothing and anti-

inflammation properties, post-operative care after crown prep #20 was achieved and patient felt better as he no longer had a feeling of discomfort from the swelling and heat caused by the procedure.

Case 3: Traumatic Ulcer; Increase of Opening

Introduction

- 8-year-old patient in pain due to ulcer in the mouth from biting her cheek. PAIR Rinse was able to give her immediate relief.

Case presentation

- Patients presented with sharp burning pain in her mouth. At clinical examination it was determined her pain was coming from a traumatic ulcer on the buccal mucosa of her right cheek. She had a limited range of opening her mouth due to the pain.

Management and outcome

- She was instructed to use the PAIR Rinse and was supervised during her usage. After she finished, she could immediately open twice as wide as she had done just minutes before. She also stated it no longer hurt and that she felt much better.

Discussion

- PAIR Rinse with its large spectrum of usage due to its many antimicrobials and anti-inflammatory properties can be applied to a vast number of ailments. Instructions include to expectorate at end of 2 minutes and to not swallow.

Case 4: Whitening; Tissue Peroxide Burn

Introduction

- Teeth whitening is a very common procedure but none the less has its risks and complications. In this situation a patient had tissue burn from leakage of whitening material.

Case presentation

- Gingival tissue of the lower left quadrant presented as blanched and dehydrated. Patient was experiencing strong burning sensation and pain.

Management and outcome

- Area of trauma was irrigated with water to remove all remaining bleaching and isolation materials. Patient was given 2 ml of PAIR Rinse to swish with and did so for 2 minutes. Patient felt soothed and pain subsided; immediate relief.

Discussion

- Once again this is an example of how PAIR Rinse can be used in more than its intended scope treatment.

Case 5: Recovery Used for Sleep Aid

Introduction

- Dental provider experienced many sleepless nights. Subject was concerned with taking over the counter or prescribed medication with development of a dependence and groggy effects afterwards. It was suggested and subject agreed to start a trial of Recovery DenticDS™. Utilization of Recovery based on its suggested use in post-surgical and implant procedures to help with the restful sleep necessary for post procedure bone growth.

Case presentation

- Stress induced insomnia often did not allow subject's "thoughts to settle from the busy day and continuous worry about patients".

Management and outcome

- Subject reported if within 15 minutes of laying down they were not able to fall asleep, 0.5 mL of Recovery was taken. Subsequently, within 10 minutes, "calmness and heaviness in their eyes, led to a hard and restful sleep."

Discussion

- Subject reports: The best part of Recovery is the lack of grogginess the morning after, the feeling of being energized and ready to take on the day. Subject reported there was also feeling of no need to use it nightly but only when stressful days led to restless nights.

Case 6: Expedited Healing from #26 Extraction and Bone Graft Site for Future Implant

Introduction

- Patient called in stating his sutures had come undone from extraction and socket preservation to prepare for future implant of tooth #26, done 3 days prior. At that time, the patient had been started on PAIR.

Case presentation

- Clinical examination showed that tissues had already epithelized, and gingival tissue was closed. The gingival tissues were pink and tight.

Management and outcome

- Sutures were removed and patient was advised that sutures were no longer needed and a radiograph of the area showed bone was still intact. He was instructed to continue using the PAIR Rinse and to return at 1 month for post operative checkup.

Discussion

- Using PAIR Rinse speeds up the reduction of pathogenic bacteria and inflammation while maintaining a healthy micro flora to allow for proper wound healing.

Summary

Three products have been utilized successfully and without any indication of toxicity or other untoward side effects. These were:

- The PAIR Rinse helps fight off destructive pathogenic bacteria while preserving the natural flora of the mouth allowing the body's natural healing process to prosper. In the past, dentistry has been limited to antimicrobial and bactericidal products that would eradicate not only the destructive bacteria but also the good bacteria required for proper healing. This resulted in an unbalanced microbiome and delayed healing. The PAIR Rinse's anti-inflammatory, anti-microbial as well as, important from the patient's viewpoint, soothing properties make it a viable alternative office and home rinse for oral health and an improved way to treat a broad spectrum of ailments from gingival inflammation to peroxide burns and much more.

- The DenticDS™ Recovery product has been very beneficial and, in our opinion, should become a standard of care for pre-and post-surgical procedures. We see a clear and overall significant increase in effective patient care with the promotion of bone growth, wound healing properties, vitamins and melatonin, all of which set the patient up for continued success and a desired enduring outcome.

Another outcome that is evident through the use of the DenticDS™ product, Patient Comfort, is the management of dental anxiety. It does so in a natural way with no need for narcotics or sedation. Best of all, the product allowed the patient to gain confidence in themselves and maneuver through the anxiety. It's a non-dependent way to help those that are so burdened with the issue of dental anxiety.

Conclusion

In the dental profession there is a broad spectrum of ailments that are seen on a daily basis. To this point there has been a lack of natural plant treatments which do not rely on antiseptic chemicals or pharmaceuticals. The phytocannabinoids in PAIR, Recovery and Patient Comfort formulations are the base actives of the DenticDS™ formulary. These products can be applied across multiple indications faced in the General dentist's operatory: lessen and in many cases eradicate those ailments; promote healing using the body's own anti-microbial, anti-inflammatory; and wound healing mechanisms.

Through our collective experience using the DenticDS™ Products it is evident that the products allow a provider to deliver well-rounded care and treat a broad range of ailments in a natural way that promotes optimal health.

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References

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Table 1: Product evaluation case studies.

Presentation	Product Evolution			Notes
	PAIR Rinse	Recovery	Patient Comfort	Notes
Case 1: Root Canal				
• Appointment 1	X			Too anxious to proceed
• Appointment 2	X		X	Calm and cooperative
• Appointment 3	X			Less calm but managed
• Appointment 4	X		5	More accepting of treatment
Effectiveness:	5			
Case 2: Crown Preparation, Tissue Managment	X			Immediate pain relief post anesthesia; post-operative care, no discomfort
Effectiveness:	5			
Case 3: Traumatic Ulcer; Increased Erosion	X			Sharp, burning. Immediate relief with improved mobility
Effectiveness:	5			
Case 4: Dental Whitening Tissue Burn	X			Water irrigation to remove materials, 2- minute PAIR rinse
Effectiveness:	5			Pain soothed, immediate relief
Case 5: Dental Stress Induced Insomnia		X		
Effectiveness:		5		Sleep within 10 minutes; no morning after grogginess; use only with insomnia
Case 6: Extraction, Future Bone Graft Site				
• Appointment 1	X			Initial extraction procedure
• Appointment 2	X			Epithelization with pink gingiva
• Appointment 3	X			
Effectiveness:	5			Improved wound healing

Scoring: 5-Very Effective; 4-Effective; 3-Moderately Effective; 2-No change; 1-Worse

Presentation	Product Evaluation			Notes
	PAIR Rinse	Recovery	Patient Comfort	
Case 1: Root Canal • Appointment 1 • Appointment 2 • Appointment 3 • Appointment 4 Effectiveness:	X X X X 5		X 5	Too anxious to proceed Calm and cooperative Less calm but managed More accepting of treatment
Case 2: Crown Preparation, Tissue Managment Effectiveness:	X 5			Immediate pain relief post anesthesia; Post-operative care, no discomfort
Case 3: Traumatic Ulcer; Increased Erosion Effectiveness:	X 5			Sharp, burning. Immediate relief with improved mobility
Case 4: Dental Whitening Tissue Burn Effectiveness:	X 5			Water irrigation to remove materials, 2- minute PAIR rinse Pain soothed, immediate relief
Case 5: Dental Stress Induced Insomnia Effectiveness:		X 5		Sleep within 10 minutes; no morning after grogginess; use only with insomnia
Case 6: Extraction, Future Bone Graft Site • Appointment 1 • Appointment 2 • Appointment 3 Effectiveness:	X X X 5			Initial extraction procedure Epithelization with pink gingiva Improved wound healing
Scoring: 5-Very Effective; 4-Effective; 3-Moderately Effective; 2-No change; 1-Worse				