

Group 1 Section 228 Treatment Planning Assignment

Professor Dillon

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Dental Hygiene Treatment Planning

A dental hygiene treatment plan consists of four phases, but not all phases are completed by the hygienist. The hygienist is involved in Phase I and Phase IV. Before a hygienist moves onto Phase I, a complete periodontal assessment must be completed. This is the first step of the dental hygiene process of care, also recognized as ADPIED:

- Assessment
- Diagnosis
- Planning
- Implementation
- Evaluation
- Documentation

Each treatment plan is customized for the patient (pt.) per the pt's needs in order to restore them to optimal oral health.

When we do this, we must take into consideration the pt's health status, actual/potential health problems, medication, symptoms that may cause future health problems, etc. In some cases, certain modifications must be made to ensure the pt's health and safety when they are in, as well as outside, our care.

In this case, the pt is an 18 y/o female that is diagnosed with cyclic neutropenia and manic depressive psychosis. Pt is on prescription meds-Neupogen and Elavil. Assessments conclude that the pt has Type III Chronic Periodontitis. These assessments must be completed and taken into account in order to move onto Phase I. The goals of Phase I treatment planning are:

1. "Reduce all etiologic and risk factors to the maximum extent possible."
2. "Control and eliminate etiologic factors of disease."

Hygienists do this by providing “emergency care, relief of acute symptoms, oral hygiene instructions, nutritional counseling, and correction of inadequate restorations.” (1)

When the conditions and medications of the pt are taken into consideration, a specific treatment plan is created. The pt has cyclic neutropenia which has two possible etiologies:

1. “Defects in myeloid cells that may be genetic”
2. “*Secondary neutropenia* may develop in the following conditions: alcohol abuse, autoimmune disease (e.g. HIV/AIDS), chemotherapy or radiation therapy, folate or vitamin B12 deficiency, infection, or bone marrow transplant.”

The other condition the pt has is Manic Depressive Psychosis, also known as Bipolar Disorder. “The exact cause of bipolar disorder isn’t known, but a combination of genetics, environment, and altered brain structure and chemistry may play a role.” (2)

When taking these conditions into consideration, the following dental treatment considerations must be kept in mind: A thorough review of the medical history needs to be done. As a hygienist, we need to make sure that the pt’s neutrophil count is at a safe level. We can do this by calling the pt’s PCP, we can also ask if antibiotic prophylaxis is needed because of the pt’s high risk for infections. The pt takes Neupogen to treat this condition and like most medications, it has side effects. Common side effects of this medication are aphthous ulcers, bleeding gums, and bone/joint/muscle pain. Modifications that can be made would include using a bite block to relieve pressure on any facial muscles as well as the TMJ; using caution

When putting the pt in a supine position to avoid any back strain; if the pt has any oral ulcers, a topical gel and pre-procedural rinse will disinfect and anesthetize the oral cavity. The pre-procedural antiseptic oral rinse will decrease the number of oral bacteria which will decrease the chances of a bacteremia occurring. For the pt’s bipolar disorder, the pt may not be interested or unmotivated to keep up with oral hygiene. As a result, the pt may present with “abraded and lacerated” gingival tissue. The medication for

this condition, Elavil, also comes with the following side effects: xerostomia, dysgeusia (loss of taste acuity), stomatitis (inflammation of the mouth and lips), sialadenitis (infection of the salivary glands), edema, and discolored tongue. In order to relieve the symptoms that you can, during and after the appointment, constant lubrication of the oral cavity is necessary. Many of the symptoms are a result of the xerostomia. A salivary substitute can be prescribed according to the severity of the xerostomia, this can revert many of the other symptoms. If the pt has sialadenitis an antibiotic can also be prescribed. Some appointment interventions to be taken into account when creating the treatment plan are:

- Again, to carefully review the medical history and consult with the pt’s physician/psychiatrist.
- Keep everything simple including your surroundings, and instructions to the pt because of her short attention span.
- “Manage caries and periodontal risk with saliva substitutes, office and home fluoride application, dietary counseling, and sugar-free xylitol gum or mints between meals. (A Chlorhexidine gluconate mouth rinse may be prescribed for a short interval to reduce caries risk and aid healing after NSPT)”
- Three to four-month recare appointments. (3)

Phase 1 Treatment Plan:

Planned Interventions	
Educational	Therapeutic/Clinical
Toothbrushing	Scaling/Root Planing
Because the pt has Bipolar Disorder, the pt needs a simple yet effective method of brushing. I would recommend a powered TB with a pressure sensor. This will give the pt the	Because of the pt’s conditions, the pt will need a preprocedural rinse to avoid a bacteremia. An antibiotic gel, Arestin, should be used subgingivally as well for scaling and

best possible biofilm control vs a manual TB while also preventing the pt from causing any trauma to the gingiva.

This will also help prevent the Pt's periodontitis from progressing to Type IV.

Interdental Aids

Due to the chronic periodontitis status of the pt, I would recommend an irrigation aid with listerine to keep the bacteria in the pockets under control, and floss to disrupt and remove biofilm in interproximal spaces and beneath the gingiva.

Rinses

An antiseptic, fluoride mouth rinse without alcohol that is made for xerostomia (such as Biotene). "Chlorhexidine gluconate mouth rinse may be prescribed for a short interval to reduce caries risk and aid healing after NSPT." (3)

Following treatment, specifically scaling and root debridement, I would instruct the pt to rinse with warm salt water to disrupt any possible environment where bacteria may thrive.

root debridement. For pain management, topical gel and an injection that doesn't contain epinephrine should be used as needed. Epinephrine will interact with Elavil and cause prolonged hypertension. Only blocks, such as the inferior alveolar injection, need clotting factor due to the neutropenia

Polishing

Considering that the pt has xerostomia and pockets, I would use an air polisher to avoid excessive drying of the oral mucosa; and a shark tooth extension for the pockets, with glycine powder to avoid abrasion of the tooth and root surface.

Fluoride

I would use a neutral fluoride treatment to decrease caries risk. Because the pt has xerostomia, there's a decrease in the self cleaning mechanism of saliva. Therefore, more biofilm buildup and increased caries risk. Because of the pt's cyclic neutropenia, pt is at risk of bleeding gums, ulcers, and inflammation of the oral cavity. This can lead to easy irritation from non-neutral pH in fluoride. I would also recommend the pt drink tap water whenever possible, as both a lubricant and home systemic F1 treatment. Until the xerostomia is under control, a prescription fluoride oral rinse

may be necessary to make sure that the caries risk is under control.

Dietary Counseling

Until all symptoms of xerostomia are controlled, especially inflammation of the oral cavity; I would instruct the pt to avoid any food that may irritate the oral tissue or lead to ulcers, such as acidic foods like lemons, tomatoes, pineapple; hard foods such as bread with a hard crust, chips, popcorn; and foods that may lead to ulcers, a combination of acidic and hard foods as well as eggplant. To help with the xerostomia, I would recommend the pt use sugar free xylitol gum and/or mints to stimulate saliva which is necessary to aid in the healing process after scaling and root debridement.

Recare

I would have the patient come in for a follow up appointment at least 7 days after any procedures/prescriptions to see how the tissue is healing and if any adjustments should be made. Recare appointments should be booked more frequently than a healthy pt's due to the nature of the pt's conditions. I would recommend three to four months.

Prognosis:

I expect a decrease in inflammation throughout the oral cavity. Decrease in bleeding if the pt's conditions are properly controlled with medication. Decreased caries risk as well as slowing down and arresting the progression of periodontitis if the patient's Manic Depressive Psychosis is controlled with medication, allowing the pt to be involved in home care routines of the oral cavity.

In conclusion, many precautions must be taken into account with communication with the pt's Primary Care Physician (PCP) and psychiatrist in regards to dental procedures that will take place. Measures should be taken to keep the patient as comfortable as possible while limiting the possibility of post procedural complications and/or infections. As a hygienist, we must do what we can to restore our patient's oral health to optimal; most of the time that involves helping them restore their overall health

which affects their oral health. In the end, all we want to do as hygienists is to provide the best care we possibly could, which falls within our scope of practice.

References:

- (1) Dillon, J. (n.d.). *Treatment Planning 1*.
 - (2) (n.d.). Retrieved April 13, 2019, from <https://g.co/kgs/LzwzDd>
 - (3) Wilkins, E. M., Wyche, C. J., & Boyd, L. D. (2017). *Clinical practice of the dental hygienist*. Philadelphia: Wolters Kluwer.
- Choi, J. (2019, April 7). *Cyclic Neutropenia*.
- Czerwinska, P. (2019, April 8). *Neupogen*.
- Axmadalieva, P. (2019, April 11). *Manic Depressive Psychosis*.
- Abdullaieva, A. (2019, April 2). *Elavil*.

CYCLIC NEUTROPENIA

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Cyclic neutropenia is a rare blood disorder caused by abnormally low number of neutrophils, an essential type of white blood cell. It is mostly affected by mutations in the ELANE gene; the ELANE gene provides structures for creating a protein called neutrophil elastase, found in neutrophils. In response to infection, the immune system starts to stimulate neutrophils to release the protein. Thereby, neutrophils play a key role in fighting off infection by destroying bacteria that enter the body.

Cyclic neutropenia may be congenitally occurred or randomly developed as young children. It is inherited in an autosomal dominant pattern, which means even one copy of the altered gene causes the disorder. Individuals with cyclic neutropenia are very susceptible to recurrent infections, and it recurs every around 21 days and lasts 3-5 days. When their neutrophil levels are within normal limits, they are not at greater risk to develop infection/ inflammation.

Symptoms of cyclic neutropenia may include fever, a feeling of tiredness, anemia, sore throat (pharyngitis), infections in the body, and ulcers of the mucous membranes of the mouth, such as gingivitis or stomatitis. This condition contributes significantly to develop chronic oral ulcers. Treatment focuses on raising the level of neutrophils by stimulating recombinant human

granulocyte-colony stimulating factor (rhG-CSF); this factor helps to increase the number of neutrophils and improve in neutrophil function.

Specifically, oral problems consist of symptomatic aphthous ulcers, gingivitis and periodontitis; with cyclic neutropenia, recurrent oral ulceration and generalized periodontal destruction are common oral features of neutrophil disorders that result in severe gingival inflammation, tooth mobility, alveolar bone loss and early tooth loss.

Treatment with granulocyte colony-stimulating factor (G-CSF), also called Neupogen, improves in increasing neutrophil numbers in cyclic neutropenia and thus reduces the severity of oral diseases. Antimicrobial and antifungal prophylactic treatments are used to treat severe neutropenia patients throughout their lifetime. However, G-CSF has common side effects, such as bone/joint pain, headache, enlarged spleen, and osteoporosis; less frequently, it includes vasculitis, rashes, pneumonia and kidney disease.

When treating immunosuppressed patients with neutropenia, aggressive dental treatment should be postponed. Oral surgery should be accompanied by an appropriate bactericidal antibiotic therapy and corticosteroid cover to manage cyclic neutropenia. In order to prevent oral side effects, the patients should visit regular follow-up with plaque control.

References:

Çehreli SB, Tirali RE, Yalçinkaya-Erdemci Z. Oral Findings and Clinical Implications of Patients with Congenital Neutropenia: A Literature Review. *The Turkish Journal of Pediatrics*. 2013; 55: 241-245

Esteve CG, Franch AM, Pérez MS. Oral Manifestations and Dental Management of Patient with Leukocyte Alterations. *Journal of Clinical and Experimental Dentistry*. 2011; 3(1): e53-9.

Genetics Home Reference. ELANE Gene. *U.S. National Library of Medicine*. 2019, <http://ghr.nlm.nih.gov/gene/ELANE>

Lu RF, Meng HX. Severe Periodontitis in a Patient with Cyclic Neutropenia: A Case Report of Long-term Follow-up. *The Chinese Journal of Dental Research*. 2012; 15 (2) 159-163.

National Center for Advancing Translational Sciences. Cyclic Neutropenia. *Genetic and Rare Diseases Information Center*. 2019. <https://rarediseases.info.nih.gov/diseases/cyclic-neutropenia>

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DEN 1217 D230

Prof. Dillon

Filgrastim is a medication with the brand name Neupogen. It is a Bone marrow stimulant and is only available with a doctor's prescription. Neupogen (filgrastim) is a man-made form of a protein that stimulates the growth of white blood cells in your body used to treat neutropenia, a lack of certain white blood cells caused by cancer, bone marrow transplant, receiving chemotherapy, or by other conditions. For our 18 year old patient, it may treat Neutropenia, which is an abnormally low count of a type of white blood cell (neutrophils). Some side effects of taking Neupogen relating to the oral cavity include: bleeding gums, coughing up blood, difficult or labored breathing, difficulty with swallowing, facial swelling, sore throat, sores, ulcers or white spots on the lips, tongue or inside the mouth. Aching or pain in the bones and muscles may occur. Bone, joint, or muscle pain is one of the more common side effects.

For this 18 year old female patient taking the medication Neupogen, I would recommend a few accommodations in her treatment plan. One of the common side effects of this medication is bone, joint and muscle pain. If the patient presents with this pain during the appointment, I would recommend using a bite block so she can keep her mouth open while relaxing her jaw muscles and TMJ. Bone pain can present itself in the spine also, if that would be the case I would make sure the patient is in a comfortable back position, not overly supine. I would make the same accommodations if she had any breathing difficulties. Also I would try to make the appointment as quick as possible, to minimize pain for her. If that is not enough the patient can take a pain alleviating medication prior to appointment, to relieve her muscle, joint or bone pain.

Another side effect that is possible from taking this medication is bleeding gums. This patient has type III chronic periodontitis, along with the bleeding gums, I would recommend using Arestin on her. Arestin is an antibiotic gel applied in the gingival sulcus. The antibiotic gel will help decrease the amount of bacteria and help prevent a bacteremia due to her bleeding gums and chronic periodontitis. This is used in conjunction with regular scaling and root debridement.

The medication Neupogen can also cause side effects relating to the oral cavity. It is possible to get sores or ulcers in the mouth from this medication. Because of this possibility, I would recommend this patient to use an anti-sore oral rinse such as Orajel. This can help treat and prevent mouth sores from occurring, which the patient has a higher chance of getting because of this medication. Because of this, the clinician should be extra vigilant during the extra and intra oral exam to find any lesions that are associated with taking the Neupogen medication.

References

“CDC Radiation Emergencies | Facts About Neupogen® (Filgrastim).” Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, emergency.cdc.gov/radiation/neupogenfacts.asp#sideEffects.

Common Side Effects of Neupogen (Filgrastim Injection) Drug Center. (n.d.). Retrieved from <https://www.rxlist.com/neupogen-side-effects-drug-center.htm>

Neupogen Injection : Uses, Side Effects, Interactions, Pictures, Warnings & Dosing. (n.d.). Retrieved from <https://www.webmd.com/drugs/2/drug-9370/neupogen-injection/details>

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DEN 1217- D228

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Manic Depressive Psychosis: is a disorder associated with episodes of mood swings ranging from depressive lows to manic highs. Manic episodes may include symptoms such as high energy, reduced need for sleep, and loss of touch with reality and it may last weeks or months. . Depressive episodes may include symptoms such as low energy, low motivation, and loss of interest in daily activities. Mood episodes last days to months at a time and may also be associated with suicidal thoughts. It is also called bipolar disorder.

Other Symptoms are:

Mood: mood swings, sadness, elevated mood, anger, anxiety, apathy, apprehension, euphoria, general discontent, guilt, hopelessness, loss of interest, or loss of interest or pleasure in activities

Behavioral: irritability, risk taking behaviors, disorganized behavior, aggression, agitation, crying, excess desire for sex, hyperactivity, impulsivity, restlessness, or self-harm

Cognitive: unwanted thoughts, delusion, lack of concentration, racing thoughts, slowness in activity, or false belief of superiority

Weight: weight gain or weight loss

Patients diagnosed with bipolar disorder might neglect their oral health. In addition the medications that gets prescribed will cause xerostomia. The prevalence of dental disease usually is extensive because of poor oral hygiene and medication-induced xerostomia. Preventive dental education, saliva substitutes and anticaries agents are indicated. To avoid adverse drug interactions with the usually prescribed psychiatric medications, special precautions should be taken when administering certain antibiotics, analgesics and sedatives. In a review of the U.S. Food and Drug Administration's medication package inserts that accompany each medication used to treat BD and an analysis of the current medical literature, the authors identified adverse orofacial reactions that may occur. The antipsychotic agents have been shown to cause xerostomia, dysgeusia and stomatitis . The benzodiazepines are associated with both xerostomia and sialorrhea . The mood-stabilizing agent lithium has been shown to cause xerostomia and dysgeusia, while valporate sodium and carbamazepine have been associated with xerostomia and glossitis. A majority of the antidepressant medications have been shown to cause xerostomia (which affects approximately 18 percent of patients), stomatitis and glossitis, and a smaller percentage of these medications have been identified as causing sialadenitis, gingivitis, and edema and discoloration of the tongue Bupropion recently has been linked with causing hyperesthesia of the ophthalmic and maxillary divisions of the trigeminal nerve, although the mechanism remains ill defined.

Dental Treatment

Patients who are experiencing an episode of mania or depression may be uncooperative and irritable during dental treatment, appear unappreciative and have numerous complaints that are inconsistent with objective findings. Before a patient begins dental treatment, the dentist should consult with the patient's psychiatrist after informing the patient. Dentists should ask the psychiatrist for the patient's current psychological status and psychiatric medication regimen.

The dentist also should ask the psychiatrist about the patient's history of alcohol or substance abuse. Patients who have a history of alcohol abuse should undergo liver function tests that include blood serum levels of albumin and total proteins, a complete blood cell count and a coagulation profile that includes prothrombin time and partial thromboplastin time.

Preventive dental education is paramount for these patients and their families. They should receive instruction in proper tooth brushing and flossing methods that maximize removal of dental plaque. Artificial salivary products should be prescribed for patients who have signs of xerostomia. Dental treatment should consist of subgingival scaling, root planing and curettage, caries control and restorative treatment. Profound local anesthesia should be achieved in these often-anxious patients before the procedures are performed.

References

Friedlander AH, Friedlander IK, & Marder SR. (2002). Bipolar I disorder: psychopathology, medical management and dental implications. *Journal of the American Dental Association (JADA)*, 133(9), 1209–1217. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=106800162&site=ehost-live&scope=site>

Alona Abdullaieva

DEN 1217 (D228)

Class Assignment on Treatment Planning. Elavil.

Brand name: Elavil. Chemical name: Amitriptyline. This medication is related to a tricyclic antidepressant class, which is mainly used for depression treatment.

Also, it is frequently used to treat paresthesia in arms and legs. Paresthesia is known as stabbing pain, burning sensations, pins, and needles in individuals with damaged pain regulating pathways of the brain and spinal cord.¹

Oral manifestations of Elavil are xerostomia (dry mouth), dysgeusia (taste problems), stomatitis (inflammation of mouth and lips), sialadenitis (infection of the salivary glands), edema, discolored tongue.

Elavil interaction with epinephrine may cause severe prolonged hypertension, therefore, should be used with caution. Dental professional should avoid using local anesthetic with epinephrine.²

In case of allergic reaction application of Epi-pen that is available in the emergency kit in every dental office should be avoided because it might cause a hypertensive crisis.

A patient who takes Elavil should suck on sugarless hard candy or ice chips, chew sugarless gum, drink water, or use a saliva substitute to relieve dry mouth. Saliva substitutes are medications that are used to treat dry mouth. Main side effects of saliva substitutes are irritation of the oral cavity and change in taste.³

Elavil causes serious allergic reaction very rarely. However, patients should seek medical help if they noticed rash, itching and swelling of the face. Facial edema, swelling of the tongue, and throat might be particularly dangerous since it might obstruct the airways and cause trouble breathing.⁴

References

1. <https://www.nationalmssociety.org/Treating-MS/Medications/Elavil>
2. (https://dental.washington.edu/wp-content/media/sp_need_pdfs/Anxiety-Adult.pdf)
3. <https://www.mskcc.org/cancer-care/patient-education/saliva-substitute>
4. <https://www.webmd.com/drugs/2/drug-1807/elavil-oral/details>