

ORAL CARE FOR MEDICALLY COMPROMISED- A LYNCHPIN IN TREATMENT PLANNING

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ABSTRACT

Oral health care must be considered a health care specialty and as such is an integral part of medical care. This is particularly apparent when the patient seeking oral health care presents with a systemic illness and/or disability. With the aging of the people in our society worldwide and the ability of the health care system to prolong life more individuals will require oral health care that is optimally coordinated with their systemic conditions. Oral health care for the medically compromised patient requires that the practitioner possess an ability to appropriately gather and critically analyze a patient's historical information. We often describe a dental treatment plan for a person with a compromising systemic condition as a compromised plan because the dental treatment may not be ideal when compared to the treatment provided to a person without a disabling condition. This multi-professional and hopefully interdisciplinary, professional situation is most often seen in the hospital. It can also involve extended care facilities for the elderly, mentally ill, developmentally disabled, etc. It must also include "private" practice activities. In fact, when the dental health care professional actively involves non-dental health care professionals in the oral health care planning and treatment a true interdisciplinary health care service can be provided.

KEYWORDS: Medically compromised; Oral health care; Cognitive skills; Interdisciplinary; Assessment scale

INTRODUCTION

Oral health is mirror of general health. Oral health care professionals must be able to identify patients with systemic diseases, compromising conditions, and disabilities that have an impact on, and can be impacted by, oral and maxillofacial health care. The ability to properly practice dentistry within the context of the larger health care system is often a challenge for the dental practitioner but need not be so. Inappropriate identification of a patient with a compromising systemic condition through improper history taking and interpretation, can create ineffective, or even detrimental, oral health care.^[1] To properly identify a patient's medical condition, an adequate medical history must be taken. In many cases, the patient does not interpret systemic illnesses, signs, symptoms, medications, etc as relevant to the practice of dentistry.^[2] As a result, a simple question and answer form provided by the patient may not reveal relevant medical information. The dentist must therefore conduct a verbal (or other appropriate) interview of the patient, family member, caretaker, nurse, etc.

THE REVIEW OF SYSTEM

The Review of Systems (ROS) is the most common aspect of the medical history with which most clinicians are familiar. It includes topics related to all body systems based on symptoms recognized by the patient and told to the health care practitioner. These can be very subjective topics and should be assessed with a critical eye and ear.^[3,4] The best method of obtaining accurate historical information is by maintaining eye contact with the patient during the questioning period and discussion session. Patients are less

likely to forget or misstate problems and symptoms if the health care practitioner is genuinely interested in the answers and indicates that the questions or topics relate in some appropriate manner to oral health care.^[5] Some predisposing factors like weight change, weakness, fatigue, etc. can provide the clinician with an indication of anxiety, phobias to oral health care, immunologic changes or deficits, surgical healing ability, reactions to anesthetics (local or systemic) etc. The skin should be assessed. Skin diseases such as those related to autoimmune disorders (lupus, lichen planus, erythema multiforme, etc.) can be found on oral mucosa and may indicate an inability to tolerate oral surgical procedures in the usual manner. The head must be assessed for trauma, headache, and tenderness. The possibility of a stroke, myalgia, TMJ and/or myofascial pain have obvious relationships to safe and effective oral health care. Dysfunction in the eyes and ears can indicate intracranial disease or conditions which might cause a decision to limit the use of a vasoconstrictor in a local anesthetic for instance. Specific questions to ask must include visual changes such as blurring, decreases in visual field (scope or area of vision), double vision, and spots. Nasal symptoms can affect a decision to use or not use inhalation analgesia such as nitrous oxide or indicate the presence of a lesion as serious as a nasal pharyngeal carcinoma. Specific questions must include bleeding, obstruction, and allergy-like symptoms. Questions should be directed toward such symptoms as hoarseness (which could indicate cancer) and thyroid problems which could indicate intolerance to local anesthetic agents such as vasoconstrictors. Evaluation of the heart must include questions about murmurs, Rheumatic Fever, heart attacks, chest pain, position related difficulties such as orthopnea, and breathlessness for example. Assessment can be aided by observing for swollen extremities and/or cyanosis in the patient's skin. Congestive heart failure, and therefore valvular disease, can be identified by breathlessness on exertion or fluid accumulation in the extremities. Chest pain can be indicative of coronary artery disease and/or valvular disease.^[6] Tolerance to dental appointments, stress, the decision to limit the use of vasoconstrictors in local anesthetic, and even the need to monitor a

patient's vital signs during treatment can be affected by positive findings in this system.^[7] The respiratory system must be evaluated. Again, breathlessness, during rest, exertion, sleep, etc. should be investigated. Environmental allergies and the related respiratory difficulties must be differentiated from emphysema, asthma, pneumonia, or oncologic processes.^[8] Patient positioning, may have to be altered or a standard supine positioning for dental care may have to be changed to a semi-reclining position for treatment.^[9] Obvious respiratory challenges could preclude the use of a rubber dam for treatment or the decision to avoid nitrous oxide use. The gastrointestinal system includes more than the stomach and intestines. In particular, the function of the liver needs to be assessed by inquiries addressing bleeding problems, history of hepatitis, etc. Specific questions should be directed toward bleeding tendencies, use of alcohol and drugs, infectious diseases, and jaundice.^[10] Renal function must also be evaluated. Drug metabolism is critical in the routine management of the dental patient. Of specific concern would be a dramatic increase or decrease in urine characteristics or output and lower back pain.^[11] Venereal disease questions must be asked of the patient since positive a history could coincide with HIV status and a depressed immune system that could preclude elective oral surgery or necessitate a more aggressive approach to periodontal disease management and prevention. Questions regarding sterility and impotence are usually of minimal direct importance to oral health care.^[12] Gynecological questions should not be avoided, although must be asked with respect and informed knowledge as to the relevance to oral health care. Significant dysmenorrhea can indicate bleeding tendencies or hormonal imbalance that can lead to surgical complications and periodontal related disorders.^[13] Matters concerning elective abortions are usually not relevant but a positive history for miscarriages could indicate a patient at risk from oral health care during the first trimester or at any time if the individual is of child bearing age and not using regular contraception methods. Endocrine disorders such as diabetes and thyroid disease can be readily investigated via history. Increased urination may be an indicator of altered insulin metabolism. Intolerance to temperature

variations may cause the dentist to suspect thyroid disorders. Both of these endocrine conditions have serious implications for safe and effective therapeutic and preventive oral health care.^[14] Problems in the musculoskeletal system could indicate arthritic changes or conditions which, when treated with non-steroidal drugs or steroids can cause complications in patient management for dental treatment. Bleeding can occur with NSAIDs. The use of steroid drugs with the associated adrenal insufficiency could lead to hypotensive crises during stressful dental appointments. The hematologic system is often easiest to assess objectively through lab testing but historical information could be most valuable. The tendency for the patient to bleed has direct oral health implications and lead to systemic complications. Any appearance of anemia with pale tissues or history of anemia can lead to suspicion of leukemias or the patient's inability to heal from surgical procedures or tolerate a significant blood loss. Decreased white cell counts, by history, can indicate the patient's depressed immune system and/or inability to properly respond to infection or transient bacteremias from routine oral health care.^[15] The neuropsychiatric system should not be overlooked. Of obvious concern is the seizure patient as it relates to gingival overgrowth from drug therapy or appropriate management of anxiety and seizure inducing situations. However, the psychological stability of a patient is paramount to obtain optimum compliance with oral care regimens and medications prescribed for therapeutic and preventive treatment. The ability of a patient to mentally, emotionally, and physically cooperate for dental treatment, prosthesis fabrication and function, etc. must be determined.^[16] This concludes a brief summary of what general and specific items need to be addressed in a medical history and for what reasons as it relates to oral health care. Once an appropriate and accurate history is obtained from and about a particular patient with a compromising medical condition, the information must be put to use in an effective fashion. An assessment scale is one such appropriate tool. This assessment scale was formerly called as the **Dental Risk Assessment and Prognosis Evaluation Scale or DRAPE Scale**. The name of the scale was reassessed and more appropriate

working title was given by Daniel E. Jolly as **Prognosis and Assessment of Risk Scale (PARS)**. It can function in conjunction with Frankl^[17] and American Society of Anesthesiology Scales^[18] for patient care evaluation. This scale has been useful in educating the dental professional for appropriate initial considerations in treatment planning for the medically compromised patient (Table 1 & 2).

Category I: A healthy patient who requires no special modifications to receive dental care. Dental treatment planning would not have to consider any significant medical implications. Acute and chronic dental disease can be managed in a routine manner.

Category II: A person with a medical condition who requires some non-routine considerations to receive dental care. Dental treatment should focus on elimination of acute infection prior to a medical or surgical procedure. Acute disease, such as a periapical abscess, generally should be treated by extraction. Chronic disease which can be maintained in control can be treated after the medical or surgical treatment. Prosthetic heart valve patients are an example.

TABLE 1 PROGNOSIS and ASSESSMENT OF RISK SCALE (PARS)									
CATEGORY DESCRIPTIONS	TYPE & TIMING OF TREATMENT								
	BEFORE1					AFTER2			
	R3	N4	S5	A6	M7	R3	C8	L9	
CATEGORY I Healthy patient No special modifications	X						X		
CATEGORY II Medical condition who requires some non-routine considerations to receive dental care		X					X		
CATEGORY III Medical condition with significant life-long implications and requires significant modifications in dental treatment planning			X					X	
CATEGORY IV Medical condition which necessitates major modifications in dental treatment planning				X					X
CATEGORY V Serious medical condition which necessitates only limited care to eliminate serious acute oral disease					X				DOES NOT APPLY

Footnotes: Please refer to Table 2

TABLE 2	
PROGNOSIS and ASSESSMENT OF RISK SCALE (PARS)	
Type and Timing of Treatment (Explanation of footnotes from table 2a)	
1.	BEFORE: Types of treatment considerations prior to the planned medical or surgical therapy.
2.	AFTER: Types of treatment considerations after completion of medical or surgical therapy.
3.	ROUTINE: No alterations prior to or following medical or surgical therapy except those which are routinely made secondary to "normal" treatment planning and patient specific considerations. Some medical management preparation may be required.
4.	NON-ROUTINE: Extract teeth with periapical lesions, abscesses, furcations more than Grade II, mobility more than Grade II, and those with a potential for endodontic complications (large caries, etc.). Prophylaxis prior to therapy. Minor medical management preparation required. Oral hygiene history and potential and other patient factors can modify treatment plan significantly.
5.	SIGNIFICANT: Extract teeth with periapical lesions, abscesses, furcations of Grade II or more, mobility of Grade II or more, impacted third molars, and those with a potential for endodontic complications. Prophylaxis prior to therapy. Significant medical management preparation required. Modifying factors will usually not significantly modify treatment plan.
6.	AGGRESSIVE: Extract impacted teeth and those with abscesses, large caries, periapical pathology, periodontal disease, and any potential for infectious and/or septic complications. Prophylaxis of remaining teeth prior to therapy. Significant medical management preparation may be required. Modifying factors will usually not modify treatment plan at all.
7.	MINIMAL: Manage only acute disease to prevent pain and infection with palliative procedures.
8.	CONSERVATIVE: Routine dental care generally possible. Evaluate carefully if extensive rehabilitative oral care is planned with fixed prosthetics. Avoid implants or procedures which would potentially exacerbate immunosuppressed individuals. Most surgical procedures are generally not contraindicated. Appropriate medical management preparation needs to be considered.
9.	LIMITED: Manage only acute disease, Fixed and removable prosthetic rehabilitation may be limited. Surgical procedures exposing bone may require extensive preparation (e.g. hyperbaric oxygen treatments for radiation therapy patients). Will require extensive medical management preparation.

Category III: A person with a medical condition which has significant implications lifelong for the patient. Dental care should focus on elimination of acute infection and removal of chronic problems and disease states prior to the medical or surgical procedure. Extractions would be indicated for teeth with periapical abscesses or for teeth with moderate to severe periodontal disease. Organ transplant patients are examples of this category.

Category IV: A person with a medical condition which necessitates major modifications in dental treatment planning. Removal of acute and chronic oral disease prior to medical, surgical, or

radiologic treatment is imperative. All future potential oral disease should be minimized or eliminated prior to the medical therapy. Teeth presenting with large dental caries and moderate periodontal disease should be extracted. These extractions should be performed even if the condition is one which would be readily treatable in the Category I, II, or III patient. For example, patients with poor oral hygiene, extensive but restorable dental caries, and localized moderate periodontal disease who are to receive radiation therapy to the head and neck should have all teeth with questionable prognosis removed before treatment

Category V: A person for whom no dental treatment would be indicated except to control acute and chronic infection and establish basic oral function as necessary. A terminally ill patient with a very short life expectancy might be an example of this category.

Modifications: All the categories are modified by an individual evaluation of the categories itemized in the section on Optimum Oral Health Care above and described in Table 3. These general categories include: 1) oral hygiene abilities, 2) level of interest in oral health as evidenced by the current condition and past dental history, 3) urgency of the medical condition, 4) patient desires, 5) emotional factors such as self-image, 6) level of function in the community in which the patient lives, and 7) other individual factors.

CONCLUSION

Medical and dental interdisciplinary cooperation is critical in appropriate assessment of the medical history and the subsequent management of the medically compromised dental patient. This interdisciplinary, rather than multidisciplinary, cooperation must extend beyond the physician and include the patient, family, caregivers, therapists, and anyone else involved in the life of the particular individual.^[19] The patient with a medical condition is one with a significant disability affecting many facets of life. The critical activity on the part of the dentist in managing the medically compromised dental patient is the cognitive skill ability. If properly accomplished, the cognitive skills will permit appropriate use of the proper technique and behavioral skills.^[19] Proper oral health care can contribute significantly to a person's quantity and

TABLE 3
PROGNOSIS and ASSESSMENT OF RISK SCALE (PARS)

Modification Considerations

All the DRAPE Scale categories are modified by an individual evaluation of the patient aspects itemized in the section on Optimum Oral Health Care. These general categories include:

1. Medical and Physical status: What complicating medical conditions exist? This is a large item of consideration which will be clarified by other chapters of this publication.
2. Oral Hygiene: What are the patient's abilities and level of interest in oral health as evidenced by the current condition and past dental history?
3. Psychological needs: What are the esthetic and functional factors which would improve the individual's self image and willingness to function in society, at work at school and with peers?
4. Functional ability: What is the level of function in the community in which the patient lives
5. Mental status: What is the level of understanding and communication of the patient?
6. Social status: What is the patient's work and school environment?
7. Family status: What is the patient's home and living environment, availability and level of understanding of caregivers?
8. Physical limitations: What ability does the patient have to provide their own oral hygiene care?
9. Accessibility issues: Can the patient receive dental treatment in the dental office environment, physically enter the office and move safely around in the office; does the patient have a way to travel to the office for frequent, occasional, annual or only emergency visits?
10. Financial issues: Can the patient afford the recommended treatment or what alternatives and compromises are feasible for the individual?
11. Communication needs: Can the patient understand instructions, require an interpreter or communicate his or her concerns directly to the dental team in an appropriate fashion?
12. Appropriate behaviour management needs to be planned: What medications, restraints, informed consent, extra time allowance, hospitalization, etc. need to be considered?
13. Consent: Is the patient able to provide his or her own consent or is another individual, group of individuals, agency or court responsible?
14. Other individual factors.

quality of life.^[20] The concept of optimum dental treatment planning differs from ideal dental treatment planning, but is not to be considered compromised dental treatment planning. Finally, an evaluation tool, the PARS (Prognosis and Assessment of Risk Scale) is a means to aid dental treatment planning for the medically compromised dental patient. Remember that optimum care may not be ideal and will be influenced by the patient and situation specific circumstances. When this approach to treatment is followed in the appropriate interdisciplinary fashion, the patient will benefit and an individual's quantity and quality of life should benefit. Dental care for the patient with medically compromising conditions can be difficult and infinitely challenging, but ultimately rewarding. Our patients benefit, we benefit, health care professions as a whole benefit, and society benefits.^[21] The measure of a success of a society is the measure of the degree to which that society takes care of those of its members who can not take care of themselves. Dental care for the person with medical disabilities is just such an example.

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