

## Caring for Medically Complex Patients

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## Purpose

- Understand medical conditions common in older adults and how these medical conditions affect oral health
- Identify management issues that occur related to these conditions.
- List issues that arise when a patient enters the nursing home.

## **Medication Use**

- OTC Medications (not perceived as medicines or serious)
- Prescription medications
- Compliance
- Interactions
- Change frequently so ask at each appointment if any changes to health and/or medications

## **Medications**

- |                            |                          |
|----------------------------|--------------------------|
| ■ <u>Prescription Meds</u> | ■ <u>OTC Meds</u>        |
| Anti-hypertensives         | Antacids (sugar content) |
| Diabetic meds              | Analgesics               |
| Cholesterol lowering       | Vitamins (E and C)       |
| Cardiac meds               | Herbal Supplements       |
| NSAID (anti-arthritis)     | Glucosamine              |
| Anti-depressants           | Chondroitin sulfate      |
|                            | Co-enzyme Q              |

## **Differential Diagnosis of Alterations in Salivary Flow**

- Multiple medications
- Head and neck radiation
- Endocrine changes
- Primary salivary gland pathology

## **Medications Causing Oral Dryness**

- |                     |                  |
|---------------------|------------------|
| ■ Antidepressants   | ■ Antispasmodics |
| ■ Antihistamines    | ■ Decongestants  |
| ■ Antihypertensives | ■ Diuretics      |
| ■ Antineoplastics   | ■ Tranquilizers  |
| ■ Antipsychotics    |                  |

## Medication Interactions

- Erythromycin
  - Azithromycin
  - Coumadin
- Digoxin  
Digoxin  
Vitamin E

## ASA Assessment and Dental Implications

- Class I - Healthy Patients
- Class II - Mild Systemic Disease (e.g. Well controlled diabetic)
- Class III - Severe but not incapacitating systemic disease (poorly controlled diabetic)
- Medical Hx & Routine Dental Care
- Medical Hx to determine disease status; Routine dental care
- Medical Hx, medication review, lab work (?) prior to routine dental care; some modifications

## ASA Assessment and Dental Implications

- Class IV - Incapacitating systemic disease that is a constant threat to life (immediately s/p myocardial infarct)
- Class V - Moribund patient (not expected to survive 24 hrs)
- Medical HX, medication review, MD consult, lab work (?), routine dental care with some modifications
- Oral health care to keep patient clean and comfortable

## Oral Cancer, US

- ~28,000 new cases each year, US
- 40% will die within 5 years of diagnosis
- 1 out of 4 have no risk factors for oral cancer
- New diagnostic aids for improved detection

Source: American Cancer Society, 2014.

## Oral Cancer Survival Rates

- Survival based on stage of disease at time of diagnosis
- 5 year survival for cancers of oropharynx and tonsil - 66%
- 5 year survival for cancers of gum and other parts of the mouth - 60%
- Survival rates based on stage of disease - not available

Source: American Cancer Society website, last revised 7/17/2014.

## Risk Factors for Oral Cancer

- Tobacco use
- Alcohol use
- Age
- Sunlight (lip cancer)
- HPV-16
- Survival based on stage of disease at time of diagnosis

Source: Morbidity and Mortality Weekly Report, Human

## Rheumatoid Arthritis/Osteoarthritis

- Disabilities
- Medications
- Self-Care
- Transportation to Dental Office

## Osteoporosis

- Loss of bone mass and architecture
- Increased risk of fracture
- Female to male ratio 4:1
- 1.5 Million fractures annually

**Demineralization**  
- Prevents mineral from coming out of bone



**Remineralization**  
- Promotes new bone growth

(osteoclastic activity)

(osteoblastic activity)

## Treatment of Osteoporosis

- Vitamin D
- Calcium
- Weight bearing exercise (not swimming)
- Bisphosphonates & anti-resorptive meds  
Fosamax, Aredia, Boniva, Zometa
- Strength Training

## Patient/Dentist Concerns

- Reports occurring in women who took oral bisphosphonates
- Long history of medication effect in bone
- Dentists are becoming concerned about treating patients with history of meds
- Physicians & dentists need to work together on this issue

## Medication Therapy Related Osteonecrosis of the Jaw (MRONJ)

- Exposed, necrotic bone in the maxillofacial region persisting for more than 8 weeks;
- in a patient taking or has taken a bisphosphonate; and
- has not had radiation therapy to the head and neck

Source: Oral and maxillofacial position paper on bisphosphonate related osteonecrosis of the jaw; accessed JADA website (members only), Feb 22, 2011.

## Medication related Osteonecrosis of the Jaw (MRONJ)

- **Risk Factors:**
  - Older age (over 65 years)
  - Periodontitis
  - More than 2 years use of bisphosphonates
  - Smoking
  - Diabetes
  - Corticosteroid use for chronic conditions
- **Risk of developing BON on oral bisphosphonates appears low (~0.1%)**
- **IV bisphosphonate use creates a higher risk than oral use**

Source: Hellstein JW, Adler, RA, Edwards B, et al. Managing the care of patients receiving antiresorptive therapy for preventive and treatment of osteoporosis. JADA 142(11):1243-1251, Nov. 2011.

## Routine Dental Treatment of Patients Taking Bisphosphonates

- **No clinical trials to support specific recommendations; science is developing**
- **Recommendations based on expert opinion**
- **Conservative dental treatment recommended**
  - Sound oral hygiene practices & regular dental care to reduce risk of BON
  - Discontinuing bisphosphonate therapy does not eliminate risk

Sources: Oral and maxillofacial position paper on bisphosphonate related osteonecrosis of the jaw; accessed JADA website (members only), Feb 22, 2011.

Migliorati, CA, JA Casiglis, J. Epstein, PI Jacobsen, MA Siegel, SB Woo. Managing the care of patients with bisphosphonate-associated osteonecrosis: An American Academy of Oral Medicine position paper. JADA 136(12):1658-68, 2005.

## Treating Osteonecrosis of Jaw

- **Do not debride-lesion only gets larger**
- **Antibiotics may be helpful-Amoxicillin or Levaquin for 10 days**
- **Good daily hygiene and chlorhexidine daily rinse**
- **Counsel patient that you can manage this oral side effect, while the patient manages their chronic disease, especially if undergoing cancer therapy.**

Source: Robert Marx, Bisphosphonate-induced Osteonecrosis of the Jaw, 2006.

## Patients on Bisphosphonates

- **Take a good history**
  - Oral bisphosphonates < IV Bisphosphonates
  - Oral bisphosphonates < 2 yrs
- **Treatment Planning**
  - Informed Consent
  - Tooth Conserving procedures (endo v. extraction)
- **Prevention**
  - Good oral hygiene
  - Regular dental visits
  - Consult with patient's oncologist

Source: Hellstein JW, Adler, RA, Edwards B, et al. Managing the care of patients receiving antiresorptive therapy for preventive and treatment of osteoporosis. JADA 142(11):1243-1251, Nov. 2011.

## Dental Care for MRONJ Patients

- **Soft vinyl obturators to cover exposed necrotic bone to prevent further trauma to soft tissues. These prostheses must not rest on the necrotic tissues.**
- **Any existing removable prostheses must be evaluated to ensure that they fit well. Consider relining with a soft liner to promote a better fit and to minimize soft tissue trauma and pressure points.**
- **Odontogenic infections should be treated aggressively with systemic antibiotics. Culture and sensitivity should be tried. If not possible, empiric therapy is amoxicillin alone or amoxicillin + clindamycin or levaquin.**

Source: Migliorati, CA, JA Casiglis, J. Epstein, PI Jacobsen, MA Siegel, SB Woo. Managing the care of patients with bisphosphonate-associated osteonecrosis: An American Academy of Oral Medicine position paper. JADA 136(12):1658-68, 2005.

## Incidence of Hip Fractures

- **1 in 3 adults over age 65 falls each year**
- **Hip fractures result in greatest number of deaths and morbidity**
- **Women account for 80% of the 300,000 hip fractures annually**

## Hip Fracture Prevention

- Women who walked 4 hours/wk had approximately a 40% reduction in risk of hip fractures.
- Women who exercised the equivalent of 3 hrs/wk jogging reduced the risk of hip fractures by 50%.
- Exercise for 3 hrs./wk had same protective effect as HRT.

## Patients with a Joint Replacement

- Sequelae of degenerative joint disease
- Can have total joint replaced or pins placed to repair fractures
- Debate surrounding need for antibiotics for patients with joint replacements

## 2015 Guidelines for Patients with Prosthetic Joints



### Clinical recommendations:

- In general, for patients with prosthetic joint implants, prophylactic antibiotics are NOT recommended prior to dental procedures to prevent prosthetic joint infection.
- For patients with a history of complications associated with their joint replacement surgery who are undergoing dental procedures that include gingival manipulation or mucosal incision, prophylactic antibiotics should only be considered after consultation with the patient and orthopedic surgeon. To assess a patient's medical status, a complete health history is always recommended when making final decisions regarding the need for antibiotic prophylaxis.

Source: ADA Council on Scientific Affairs. New guidelines for using prophylactic antibiotics. JADA January, 2015

## What is the prudent clinician to do?

- When in doubt, discuss with patient & consult the patient's orthopedic surgeon
- If prophylactic antibiotics are recommended prior to dental procedures to prevent prosthetic joint infection, prescribe the antibiotics.
- Another option-have the patient's orthopedic surgeon prescribe the antibiotics

Source: ADA Council on Scientific Affairs. New guidelines for using prophylactic antibiotics. JADA January, 2015

## Current Recommendations:

### Amoxicillicin

2 gr orally 1 hr prior to dental procedure

### If allergic to Penicillins:

Clindamycin 600 mg 60 min prior to dental procedure

Cephalexin 2 gr 60 min prior to dental procedure

## Heart Disease in the Elderly

- Hypertension
- Myocardial Infarct
- Congestive Heart Failure
- Valvular Heart Disease
- Conduction System Defects

## New Hypertension Guidelines

Blood Pressure <u>Classification</u>	SBP (mm Hg)	DBP (mm Hg)
■ Normal	< 120	and < 80
■ Prehypertension	120-139	or 80-89
■ Stage 1 Hypertension	140-159	or 90-99
■ Stage 2 Hypertension	≥ 160	or ≥ 100

## Dental Guidelines

- BP readings for all new patients and recall patients at least annually or according to State Dental Practice Act. Refer patients with BP ≥20 mm Hg.
- BP readings at each visit for pt with hypertension b/f significant dental procedures.
- Use Hg sphygmomanometer –most reliable
- Refer any patient immediately with BP ≥210/120 mm Hg
- Patients with well controlled or Stage 1 hypertension are good candidates for all dental procedures.
- Limit use of LA with epinephrine (2-3 cartridges of 1:100,000 or 0.036-0.054 mg epinephrine)
- Use of retraction cord with epinephrine should be avoided.

## Dental Issues in Hypertension Management

- Orthostatic hypotension  
Give patient chance to accommodate in chair
  - Oral Side Effects of Medications  
Xerostomia – BB, Diuretics, ACEI, CCB  
Gingival overgrowth - nifedipine  
Lichenoid reactions – thiazides, propranolol, ACEI
  - Drug Interactions – BB & epinephrine in LA
  - Team work between DMD and MD  
Obstructive sleep apnea – 50% of patients have ↑ BP
- Source: Herman, Konzelman, Prisant, JADA, May 2004.

## Cardiac Disease and Treatment

- Organ damage due to hypertension
- Muscle damage due to decreased blood supply (angina, MI)
- Conduction system defect (arrhythmias)
- Pump malfunction (CHF)
- Valvular Disease
- Diuretics, ACEI, CCB, β-blockers
- NTG, CABG
- Lidocaine, pacemaker, implanted defibrillator
- Digoxin
- Prosthetic Valves

## Dental Implications of Conduction System Defects

- Medications
- Pacemaker  
has life expectancy, may need to be replaced
- Implanted Defibrillator  
monitors rhythm and administers current

## Cardiovascular Implantable Electronic Devices (CIED)

- Pacemakers & implanted defibrillators
- Risk factors for infection include:  
Immunosuppression (renal/corticosteroid use)  
Oral anticoagulation use  
Patient coexisting illness (diabetes)
- Literature review of 140 articles (1950-2007) found no reports of “hematological infection from dental, gastrointestinal, GU, dermatologic or other procedures.”
- “Antimicrobial prophylaxis is not recommended for dental or other invasive procedures not directly related to device manipulation to prevent CIED infection.”

Source: Baddour L et al. A summary of the update on cardiovascular implantable electronic device infections and their management. JADA 142(2):159-165, Feb 2011. (reprinted from Circulation, 2010).

## Dental Implications

### ■ Congestive Heart Failure

Medications-digoxin  
narrow therapeutic window  
Interacts with erythromycin

Weigh patients in nursing home for fluid retention

### ■ Valvular Heart Disease

#### SBE prophylaxis

Older adults get infective endocarditis

#### Valve replacement

may be on immunosuppressives  
may have gingival overgrowth

## CARDIAC CONDITIONS FOR WHICH PROPHYLAXIS FOR DENTAL PROCEDURES IS RECOMMENDED FOR PREVENTION OF BACTERIAL ENDOCARDITIS

- Prosthetic Cardiac Valve
- Previous Infective Endocarditis
- Congenital Heart Disease (CHD)
  - Un-repaired cyanotic CHD, including palliative shunts and conduits
  - Completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first 6 months after the procedure (endothelialization occurs within 6 month of procedure)
- Repaired CHD with residual defects at the site or adjacent to the site of a prosthetic patch or prosthetic device (which inhibits endothelialization)
- Cardiac transplant recipients who develop cardiac valvulopathy

\*Except for the cardiac conditions listed above, antibiotic prophylaxis is no longer recommended for any cardiac condition or problem.

Source: Current American Heart Association Guidelines, *Circulation*, Vol. 115, May 8, 2007.

## Antibiotics for IE Prevention

### Standard Regimen

#### ■ Adults and Children > 60#

Amoxicillin, 500 mg. (4 tabs)

2.0 g orally 1 h before procedure:

No follow-up dose

## Prevention of Bacterial Endocarditis

### Amoxicillin/Penicillin Allergic Patients

- Clindamycin, 150 mg. (4 tabs)  
600 mg p.o. 30-60 min. preop
- Cephalexin or Cefadroxil, 500 mg. (4 tabs)  
2.0 g p.o. 30-60 min, preop

\*Cephalosporins should not be used in individuals with immediate-type hypersensitivity reaction (urticaria, angioedema, or anaphylaxis) to penicillins.

## Prevention of Bacterial Endocarditis

### Amoxicillin/Penicillin Allergic Patients

- Azithromycin, 250 mg. (2 tabs)  
500 mg p.o. 30-60 min. preop
- Clarithromycin, 250 mg. (2 tabs)  
500 mg p.o. 30-60 min, preop

## Vasoconstrictor Doses

	<u>Healthy</u> 3ug/ml	<u>CV Disease</u> 1.5ug/ml
50 kg (110 lbs)	8 carp	4 carpules
60 kg (132 lbs)	10 carp	5 carpules
70 kg (150 lbs)	12 carp	6 carpules

## Cerebrovascular Accident

- 500,000 new cases each year
- 3rd most common cause of death
- Can be thrombolytic or hemorrhagic
- Most common sequelae- motor loss of dominant side

## Cerebrovascular Accident

- Study reported a 400% increase in stroke risk associated with periodontitis but found no relationship between caries and stroke.

Source: Grau AJ, Becher H, Ziegler CM et al. Periodontal disease as a risk factor for ischemic stroke. Stroke 35(2): 496-501, 2004.

## Dental Implications of CVA

- Transportation to dentist
- Dominant hand function
- Transfer to dental chair
- Loss of oral motor function
- Radiographs in WC
- Post-op meds: anti-coagulants, phenytoin

## International Normalized Ratio (INR)

- Laboratory test to measure bleeding
- Trend toward maintenance of anticoagulant levels
- $\frac{PT}{Control} = INR$
- If less than 3.0, provide treatment
- If greater than 3.0, consult MD; modify treatment e.g. scale one quadrant at time, use tea bags to control bleeding

## Diabetes Mellitus

- 6.2% of population
- Onset
  - Type I-5% (Juvenile)
  - Type II- 95% (Adult)
- Medications
  - Oral hypoglycemic
  - Insulin
- Compliance

## Dental Implications

- Higher risk of periodontal disease
- Increased risk of oral *candidiasis*
- Compliance with oral hygiene
- Uncontrolled diabetics may require antibiotics for surgical procedures



## Considerations for Dental Treatment

- More frequent recall
- Emphasis on soft tissue management
  - SRP prn
  - Antibiotic treatment
- AM appointments (or when insulin at peak)
- Shorter, rather than longer appointments

Source: Considerations for treating the dental patient with diabetes. American Dental Association, 2003.

## Patients with Malignancy

- ~1,500,000 people diagnosed with cancer each year
- Most treated with some form of surgery and/or radiation with chemotherapy
- Chemotherapy can cause oral stomatitis in ~40% of patients
- Think prevention rather than palliative treatment
- Need stronger evidence & protocols

Source: Oral Health in Cancer Therapy. A Guide for Health Care Professionals. Third Edition. Editors: Rankin KV, Jones DL, Redding SW. 2008.

## Patients with Malignancy: Palliative Strategies

- Evidence:
  - Good evidence for treating oral stomatitis
  - Goal: Control pain and assist patient to eat
- Protocol:
  - Rinse with milk of magnesia to coat oral mucosa
  - Topical anesthetic to allow eating
  - Consider MI Paste to coat oral tissue

Source: Oral Health in Cancer Therapy. A Guide for Health Care Professionals. Third Edition. Editors: Rankin KV, Jones DL, Redding SW. 2008.

## Patients with Malignancy: Preventive Strategies

- Evidence:
  - No clinical trials identifying best practices
  - Goal: Control bacterial populations during chemotherapy cycle (usually 3 weeks)
- Protocol:
  - Chlorhexidine rinse daily before bed during course of chemotherapy
  - Fluoride gel/toothpaste (1.1% neutral sodium fluoride) to promote remineralization

## Categories of Elder Abuse

- Physical Abuse
- Psychological Abuse
- Financial Abuse
- Neglect

## Elder Abuse

- Parallels child abuse
- Perpetrator often adult child, who was abused
- Oral injuries don't fit explanation
- Adult child won't leave Mother alone in operatory

## Elder Neglect

- Not easily defined
- Current nursing home oral health care?
- Education of caregivers/hospital/NH staff could improve oral neglect

## Dementia

- 50% of NH residents carry DX dementia
- Loss of cognitive function
- Alzheimer's Disease
- Lose self-care ability
- Medications

## Types of Dementia

- |                        |                               |
|------------------------|-------------------------------|
| ■ Reversible           | ■ Irreversible                |
| Depression             | Alzheimer's disease (~60%)    |
| Pharmacologic agents   | Multi-infarct dementia (~25%) |
| Nutritional deficiency |                               |

## Dementing Illnesses as Model for Interdisciplinary Care

- Dental treatment should be provided as soon as possible after diagnosis
- Plan for neurological degeneration (make prosthesis sooner, rather than later)
- Develop an aggressive preventive program into the treatment plan
- Educate, educate, educate

## Dental Implications

- Dental Consult ASAP
- Dental Treatment ASAP
- Aggressive Prevention
- Family & Caregiver Education

## Stages of Alzheimer's Disease and Oral Health Care Guidelines

- |   |  |
|---|--|
| ■ Decline may last ~15 years  | ■ Minimal treatment plan modification; Restore oral diseases and prevention!   |
| ■ First stage – memory loss, spatial and/or temporal disorientation (2-4 yrs)   | ■ May require treatment modification; short visits, anti-anxiety agents if patient unable to cooperate; welcome family member or caregiver in operatory; aggressive prevention |
| ■ Second stage see more rapid and focal losses –unable to balance checkbook, intermittent speech loss, unable to carry out purposeful movements, psychotic symptoms may occur | ■ May require home visits; patient more cooperative in this stage; palliative care   |
| ■ Third stage –profoundly disoriented, can be bedridden, incontinent, bodily wasting  |  |

## Communication Guidelines

- **Verbal**  
Short words, simple sentences  
Assume patient understands everything
- **Speech style**  
Speak slowly and clearly  
Ask one question at a time and wait for answer
- **Non verbal**  
Face patient, maintain eye contact  
Caring, non verbal gestures

Alzheimer's disease. J. Geront. Nursing, 1979.

## The Nursing Home Dental Consult

- Takes time from office
- Meets a patient need
- Educates nursing staff about oral health, disease and prevention
- Develops a relationship with nursing staff
- Best marketing you can do for your practice!

## Oral Health Needs in Nursing Homes

- Staff education on oral health, disease and prevention
- Staff oral health consultations
- Daily oral self-care assistance for residents
- Label prostheses

## Systemic Diseases & Dental Care

- Hypertension, Allergies
- Bleeding  
OTC-Vitamin E, ASA  
Rx – plavix (clopidogrel), warfarin, coumadin, effient
- SBE indications
- Joint replacements

## Most Frequent Prescriptions

- 5000 ppm fluoride toothpaste (*caries*)
- 0.12% chlorhexidine gluconate (*gingivitis*)
- Fluconazole (*candida*)
- Amoxicillin (*SBE*)
- Pilocarpine (*salivary hypofunction*)

## Resources for Medically Compromised Older Population

- Epocrates or Lexi-comp– any software program with drug info for PDA
- Dental Therapeutics, 3<sup>rd</sup> edition, ADA Publishing, (\$48.95)
- Medical Considerations for Dental Practice, Quintessence ( \$98.00)
- Little and Falace, Dental care for the medically compromised, Mosby