Oral Health Care for the Aging

A Broad Overview of the Problems on the Horizon
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Oral Health of Vulnerable Older Adults and Persons with Disabilities
MEDICAL CONSIDERATIONS IN THE ORAL HEALTH OF OLDER ADULTS AND PERSONS WITH DISABILITIES

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MEDICAL CONSIDERATIONS IN THE ORAL HEALTH OF OLDER ADULTS AND PERSONS WITH DISABILITIES

Introduction
Burden of oral diseases
Oral systemic linkages
Prevention and cost savings
Concluding remarks
Everyone deserves a healthy smile!

Special efforts are needed for those most vulnerable
Everyone deserves a healthy smile!

Special efforts are needed for those most vulnerable
Whole mouth health is closely linked to whole body health.
Burden of oral diseases
“Elderly suffer a disproportionate & debilitating amount of oral disease”

Alliance for Aging Research
Oral health domains

Pathology
- Dental caries
- Periodontitis
- Oral cancer

Function
- Chewing
- Speaking

Esthetics
- Self esteem

Symptoms
- Dry mouth
Plaque (biofilms) responsible for most oral-related problems
Consequences of dental infections

- Extreme tooth pain
- Bacteremia
- Facial cellulitis
- Brain abscess

Airway
Moderate to Severe Periodontal Disease Prevalence in the US: NHANES (1999-2004) + 50% (?)

New estimate %

Reported %

Higher prevalence: males, non-hisp blacks, low SES

http://jdr.sagepub.com/content/89/11/1208.abstract (Ekes P)
Oral Cancer – Sobering Facts

1. Kills an American every hour
2. 3x more victims than cervical cancer
3. Claims more lives than leukemia, Hodgkin’s lymphoma, laryngeal ca, testicular ca, thyroid ca, or skin ca (melanoma)
4. Detected late - 22% survive; early - > 80%
5. Smokers & drinkers – 15 times greater risk
6. Minorities have greater risk; esp Af-Am males

http://www.oralcancerfoundation.org/facts/index.htm
Chewing dysfunction cascade

- Caries and Periodontal Disease
- Tooth Loss
- Problems

Image of a mouth with damaged teeth.
Chewing problems common

• One third of all elderly have “difficulty chewing or biting some foods”
  • 75% of edentulous elderly
• 20 + teeth needed for good nutrition

M Inukai et al, Health and Quality of Life Outcomes 2010,
Impact of Malnourishment

- 3 times longer length of hospitalization
- 3 times higher risk of infection
- More dependence in activities of daily living (ADLs)

Low levels of vitamin E, B\textsubscript{12} and D have been associated with a decline in functional mobility
Mouth dryness

~ 30% of elderly have xerostomia
Chronic mouth dryness limits:

- Maintenance of neutral oral pH
- Ongoing remineralization
- Protective coating on mucosa & teeth
- Lubrication for chewing, swallowing, & talking
- Local antimicrobial action through enzymes, immunoglobulin A & histatins
- Solvent role for enhancing taste
Oral discomfort can be extreme
The Importance of a Smile

- Social engagement
- Self esteem
- Mental health
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Burden of oral diseases
Oral systemic linkages
Links between oral & general health

Caveats on “causation”

common risk factors
“Have inflammation, will travel”

Scientific American: Oral and Whole Body Health - October 2006

R. Kao, CDA Journal April 2010

During the past five years, there has been a plethora of publications touting the importance of how inflammation in the mouth may be linked to systemic health and disease. Some of these articles have labeled this link as the oral-systemic link. In this issue, the case is argued that these interactions should more appropriately be labeled as the perio-systemic link.

R. Kao, CDA Journal April 2010
Inflammation plays an increasingly recognized role in oral-systemic interaction.

Inflammation

Macrophages

Neutrophils

Toxins

Anaerobic bacteria in plaque

Circulating inflammatory mediators

- fatty acids
- interleukin 1
- tumor necrosis factor alpha
Oral health/systemic health research

- Diabetes type 2
- Cardiovascular disease
  - MI, stroke, htn, vhd, pvd
- Respiratory disease
  - Pneumonia, VAP, lung abscess, COPD
- Cognitive impairments
- Cancer
- Chronic kidney disease
- Metabolic Syndrome (obesity)
- Prostate disease
- Crohn’s disease
- Gastroesophageal reflux
- Systemic septicemia
- Premature underweight births
- Anemia
Inflammation

Macrophages

Neutrophils

Toxins

Anaerobic bacteria in plaque

Circulating inflammatory mediators

fatty acids, interleukin 1, and tumor necrosis factor alpha

Acute phase proteins

CRP, SAA, IL6, TNF alpha

Liver and pancreas
insulin resistance

Diabetes
Diabetes in older adults

- > 20% of 60+ yr olds (40% - impaired glucose tolerance)
- One half treated with insulin or oral agent
- Only 50% reach goal of HbA1c<7%
- Obese Afr-Am & Hispanics at increased risk
- One of the costliest conditions to treat
Diabetes and Periodontal Disease

- “Sixth” complication of diabetes
  CVD, kidney, neuropathy, retinopathy, foot/skin
- Poorly controlled (HbA1c >9)
  3x more likely to have severe pd
- 1/3 of diabetics have severe pd
  (attachment loss of 5+ mm).
- Most complications in most “vulnerable”
Poor Glycemic Control – Oral Impact

• Periodontal disease
• Dry mouth
• Oral infections
• Poor wound healing
• Burning mouth syndrome
• Dental caries
• Candidiasis & Cheilitis
• Salivary gland enlargement
Can Mouth Bacteria Affect the Heart?

Heart Health in the Inflammation Age
Periodontal disease is a risk factor or marker for CHD that is independent of traditional CHD risk factors, including socioeconomic status.

various measures of periodontal disease confer approximately a 24–35% increase in risk of CHD.

Impact of toothbrushing on cardiovascular disease

Poor oral hygiene is associated with higher levels of risk of cardiovascular disease and low grade inflammation.

Increased risk of a cardiovascular disease event (hazard ratio 1.7, 95% CI 1.3 to 2.3) in a fully increased concentrations of both C reactive protein and fibrinogen.

Can poor oral health predispose high risk patients to oral colonization by respiratory pathogens?

Respiratory infection depends on aspiration of pathogens from proximal sites into the respiratory tree.
Systematic Review Findings

*good evidence*

that improved oral hygiene and frequent professional oral healthcare reduces the progression or occurrence of respiratory diseases in high-risk elderly adults

(relative risk reduction of 34–83%).

Systematic review finds positive preventive effects of oral care

“… providing mechanical oral hygiene may prevent ~1 in 10 deaths from pneumonia in dependent elderly people and show similar pneumonia prevention effect.”

15 publications (5 were RCT). All revealed positive preventive effects of oral care on pneumonia or respiratory tract infection in nursing home residents.

Sjogren P, et al: JAGS 2008 (56); 2124-30
Tooth loss and cognitive status

A low number of teeth increased the risk of higher prevalence and incidence of dementia (2-4x).

Edentulism or very few teeth (1-9) may be predictors of dementia in late life.

Pamela Sparks Stein, et al, JADA, 2007;138;1314-1322
Recent Study Finds Dose Dependent Links

CONCLUSION
This fairly large, prospective study with a long follow-up period presents for the first time a dose-dependent relationship among NT and both all-cause and CVD mortality, indicating a link between oral health and CVD, and that the NT is a proper indicator for oral health in Age Period.

Number of Teeth as a Predictor of Cardiovascular Mortality in a Cohort of 7,674 Subjects Followed for 12 Years

Holmlund A. J Periodontol
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Systematic Review Findings

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Azarpazhooh A, Leake JL, J of Periodontology 2006:77
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In summary

• Profound disparities in oral health (and access) to care exist for all ages … especially vulnerable elderly and persons with disabilities

• Oral disease can severely affect systemic health and impair quality of life

• Much oral disease is preventable or at least controllable; substantial medical cost savings are possible
“…too many people outside the oral health community are uninformed about, misinformed about, or simply not interested in oral health.”

U.S. Surgeon General
Translating knowledge into solutions

• Need a broadly-based and energized coalition to advocate for improved oral health for those most vulnerable.

• Need epidemiological research on oral-general health links (risk factors) and operational public health research.

• Build oral health systems capacity based on age & disability friendly primary health care.

• Improve & integrate health promotion/disease prevention efforts.

• Improve health insurance coverage.

Adapted from: Oral health in ageing societies; WHO, 2006
Thank You
ORAL AND DENTAL CARE IN LONG TERM CARE FACILITIES

MARGE BUEHNER, RDH, RDA, BS, MHSA
CURLES COLBERT, DDS, MS
OBJECTIVES

• Participants will be able to:
  • Identify the need for daily oral care for the residents in LTCF
  • Identify the connections of poor oral health and contributory factors to total body health
  • Identify intra-oral concerns for the residents in LTCF
  • Identify early warning signs of poor oral health for residents in LTCF
  • Identify preventive efforts to reduce oral infection and bacterial growth
WHY IS ORAL CARE SO IMPORTANT

• #1 It is the law!

• #2 Removal of bacteria laden plaque is essential for health mouths and total body health

• #3 Bacteria filled plaque forms on teeth all day long

• #4 Bacteria is the cause of periodontal disease and decay
THE LAW??!!

• Yes!

• LTCF must ensure that residents receive the care they need to maintain good personal and oral hygiene care!

• In response to reports of widespread neglect and abuse in nursing homes, Congress enacted legislation in 1987 requiring nursing homes participating in Medicare and Medicaid to comply with certain quality of care rules. This law, known as the Nursing Home Reform Act, says that nursing homes “must provide services and activities to attain or maintain the highest practicable physical, mental, and psychosocial well-being of each resident in accordance with a written plan of care.” To participate in Medicare and Medicaid, nursing homes must comply with the federal requirements for long term care facilities. *

* HTTP://WWW.NURSINGHOMEALERT.COM/FEDERAL-NURSING-HOME-REGULATIONS-AND-STATE-LAWS
DENTAL HAS IMPACT ON MEDICAL CONDITION

• Diabetes
• Heart disease
• Strokes
• Pneumonia
DIABETES

• Diabetes can harm the eyes, nerves, kidneys, heart and other systems including the oral cavity.

• Periodontal infection may adversely influence the glycemic control among patients with diabetes and decrease insulin-mediated glucose uptake by skeletal muscle, resulting in a poor glycemic control.

• Periodontal disease is one of the major oral health problems encountered among patients with diabetes mellitus.

• Diabetes slows down healing.

• Diabetes causes the level of sugar (glucose) in saliva to increase.

• Dry mouth and fungal infections.

HEART DISEASE

• Inflammation caused by periodontal disease may be responsible for increasing the risk of heart disease

• Periodontal disease can also exacerbate existing heart conditions

• A recent study has shown that periodontal disease might be a significant independent risk factor for the development of peripheral vascular disease

STROKES

• Additional studies have pointed to a relationship between periodontal disease and stroke. In one study that looked at the causal relationship of oral infection as a risk factor for stroke, people diagnosed with acute cerebrovascular ischemia were found more likely to have an oral infection when compared to those in the control group.
PNEUMONIA

• One of the most common route of infections for bacterial pneumonia is aspiration of oropharyngeal contents

• Oral bacteria have been implicated in the pathogenesis of this disease pathogens

• Bone loss due to periodontal disease has been found to be an independent predictor of chronic obstructive pulmonary disease

PLAQUE FORMATION

• A sticky substance composed of mucin derived from the saliva and bacteria and their products

• Responsible for the inception of caries and for gingival inflammation/periodontal disease
PLAQUE REMOVAL

• In order to maintain good oral condition, and total body health, plaque must be removed 2x daily

• Brushing for 2 minutes, morning and night

• Flossing is very beneficial but problematic in LTCF

• Daily rinsing with a bactericidal oral rinse can be helpful
DECAY PROCESS

• Tooth decay is a bacterial disease which destroys teeth. The bacteria lives within plaque.

• Disrupting and removing the bacterial plaque can arrest the process of decay.
PERIODONTAL DISEASE

• Either soft gingival tissue or advancing to hard bone tissue

• Periodontal disease is caused by bacteria that invade gingival tissues to cause inflammation in gingiva and bone.

• Periodontal disease can lead to pain, bad breath that doesn’t go away, chewing difficulties, and even tooth loss.
IDENTIFY ORAL CARE PROBLEMS

• Intra oral assessments
  • Adequate lighting a must
  • Use of bilateral digital palpation and use of gauze
IDENTIFY ORAL CONCERNs

• Learn intra oral pathology
  • Bleeding oral tissues always problematic
  • Discoloration-red, blue, white lesions
  • Pain, swellings, sores, blisters or lumps
ORAL EVALUATION
IDENTIFY ORAL CARE PROBLEMS
IDENTIFY ORAL CARE PROBLEMS

• Xerostomia
  • Medications, age related, disease caused
  • Red, fissured tongue
  • Many rinses and lozenges on the market to help
IDENTIFY ORAL CARE PROBLEMS

• Food pouching
  • After meals, and at bedtime
  • Rinsing with water after all meals
  • Wiping oral tissues with warm wash cloth
IDENTIFY ORAL CARE PROBLEMS

• Denture care
  • Remove and clean every night, weekly soak with effervescent tablets. Store in labeled denture container. Do not use toothpaste
  • Inspect for fractures and poor fit such as drooping in the mouth
  • Use adhesives sparingly!
  • DDS must inspect if problems
MONITOR, IDENTIFY AND ADDRESS ORAL CARE ISSUES

• At oral tissue assessment identify plaque build up
• Tooth brushing twice daily

• NEW FORM INSTEAD OF MDS!!!!!!
IDENTIFY EARLY WARNING OF POOR ORAL HEALTH BEFORE INTRUSIVE CARE REQUIRED
PREVENTIVE TECHNIQUES, IMPROVE ORAL CARE, EFFORTS TO REDUCING INFECTION AND BACTERIA GROWTH

• TBI instructions
PARTNERSHIPS!!!

• Dental hygienist on staff
• Dentist on staff
• Contact dental school &/or hygiene program
• Contact oral care companies- P&G, Crest, Listerine, Arm and Hammer, etc
REFERENCES

- Free pamphlets on oral care- www.nidcr.nih.gov
- www.ada.com
- www.smilemichigan.org
- https://www.youtube.com/watch?v=KoKCKIQ0bIE
THANK YOU!!