

# NPO until Dysphagia Screen



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# Goals for this session

- ◆ Discuss consequences of dysphagia
- ◆ Review of JCAHO guidelines
- ◆ Evidence-base for screening procedures
- ◆ Different models that emerged
- ◆ Lessons learned from one hospital
- ◆ Questions and answers



# Consequences of dysphagia

- ◆ Mortality
- ◆ Malnutrition
- ◆ Dehydration
- ◆ Pneumonia
- ◆ Growth (for pediatric patients)

# Medical status - mortality

- ◆ Smithard et al (1996) -presence of dysphagia was associated with increased risk of death
- ◆ Cowen at al (1997)- mortality was high in patients with severely abnormal swallowing studies who required non-oral feeding

# Medical status - mortality

- ◆ Very difficult to demonstrate that dysphagia management results in reduced mortality because dysphagia occurs with many other diseases which may cause the mortality

# Medical status - malnutrition & dehydration

- ◆ Malnutrition occurs in 47% of stroke patients when admitted to rehabilitation
- ◆ 35-85% of institutionalized elderly are malnourished
- ◆ Dehydration probably occurs in most institutionalized elderly, and 33% may be clinically dehydrated

# Medical status - malnutrition & dehydration

- ◆ Dysphagia increases risk of malnutrition because patients often have reduced amount of oral intake, restricted diet, and are tube fed
- ◆ No cause and effect relationship between these problems in patients with dysphagia who are or are not treated (Davalos et al, 1996; Keller 1993, 1995)

# Medical status - pneumonia

- ◆ Relationship between pneumonia and aspiration not clear
- ◆ Not everyone who aspirates gets aspiration pneumonia

# Medical status - pneumonia

- ◆ Feinberg (1990) - patients who aspirated thin liquids on fluoroscopy got no more pneumonia than patients who did not aspirate (unless they were tube fed)

# Medical status - pneumonia

- ◆ Corghan et al (1994) - no difference in number of patients who got pneumonia when comparing known aspirators to those who did not

# Medical status - pneumonia

- ◆ Schmidt et al (1994) - patients were 7.6 X more likely to develop pneumonia if they aspirated on fluoroscopy

# Medical status - pneumonia

- ◆ Non-compliers with dysphagia recommendations had more hospital admissions because of chest infections or aspiration pneumonia
  - Low et al 2001

# Medical status - pneumonia

- ◆ Who will get pneumonia?
- ◆ How much is aspirated?
- ◆ Are lungs able to clear material?
- ◆ What was baseline pulmonary status?

# Aspiration pneumonia

- ◆ Highest mortality rate of any infection
- ◆ Among hospitalized elderly, development of pneumonia is associated with 43% mortality rate
- ◆ Pneumonia 2nd most common infection in nursing homes
- ◆ Up to 80% of nosocomial pneumonia may be aspiration pneumonia

# Aspiration pneumonia

- ◆ Kasprisin (1989) - compared two groups of treated patients with group of untreated patients
- ◆ Both treated groups had significantly less aspiration pneumonia than the untreated group

# Aspiration pneumonia

## ◆ Kasprisin conclusions

- Even mildly dysphagic patients are at risk for the development of aspiration pneumonia
- Severely dysphagic patients responded to management of their swallowing problems

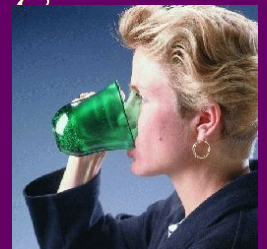
# JCAHO guidelines

- ◆ Performance Measure: Screen for Dysphagia
- ◆ “A screen for dysphagia should be performed on all ischemic/hemorrhagic stroke patients before being given food, fluids, or medication by mouth.”



# JCAHO's rationale

- ◆ 27-50% of stroke patients develop dysphagia
- ◆ 43-54% of stroke patients with dysphagia will experience aspiration
- ◆ Of those patients, 37% will develop pneumonia
- ◆ If not part of a dysphagia diagnosis and treatment program, 3.8% with pneumonia will die
- ◆ Other adverse effects include malnutrition and increased length of hospital stay



The JCAHO document even specifies that the methods may include but are not limited to:

- ◆ clinical bedside examination
- ◆ simple water swallow test
- ◆ Burke water swallow test (De Pippo *et al.*, 1994)
- ◆ bedside swallowing assessment
- ◆ simple standardized bedside swallowing assessment (SSA)
- ◆ barium swallow
- ◆ videofluoroscopy
- ◆ double contrast esophagram
- ◆ radio nucleotide studies
- ◆ endoscopy.



# Does Dysphagia Screening Work?

## ◆ IMPORTANT CONCEPTS:

- Construct validity
  - The extent to which a test (dysphagia screening) measures the intended trait (dysphagia)
- Sensitivity
  - The number of people with a problem (dysphagia) who are correctly identified
- Specificity
  - The number of people with no problem (no dysphagia) who are correctly excluded



# Does Dysphagia Screening Work?

- ◆ What are the expected outcomes?
  - Correct identification of potential dysphagia
  - Correct implementation of precautions
  - Correct triage for further assessment
  - Appropriate intervention for dysphagia
  - Improved health status outcome
    - Lower incidence of dysphagia-related complications such as aspiration pneumonia, prolonged length of hospital stay, death



# 5 Kinds of Swallowing Outcomes

- ◆ Respiratory: *to prevent “aspiration pneumonia” and other aspiration sequelae*
- ◆ Nutritional: *to prevent malnutrition and hydration associated with swallowing inefficiency and weakness*
- ◆ Financial: *to limit health care expenditure for preventable consequences of dysphagia*
- ◆ Physiological: *to restore normal swallowing physiology*
- ◆ Quality of Life: *to restore normal mealtime participation and enjoyment*



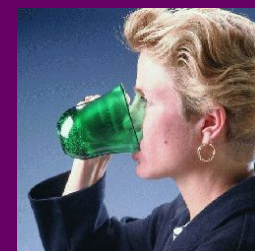
# Does Dysphagia Screening Work?

- ◆ Dysphagia literature focuses almost exclusively on correct identification of aspiration
- ◆ The accuracy of identification has usually been measured in two ways:
  - In comparison to a subsequent instrumental examination
  - By looking at the incidence of an ultimate health status consequence (pneumonia rates, length of stay)



# Does Dysphagia Screening Work?

<u>SIGN</u>	<u>Gold Standard</u>	<u>Testing Method</u>	<u>Sensitivity</u>	<u>Specificity</u>	<u>Reference</u>
Cough while drinking	Subsequent evidence of aspiration on videofluoroscopy	Administration of 10 5-ml water boluses in sequence	80%	14%	Kidd, Lawson, Nesbitt & MacMahon, 1993
		3 oz (90 ml) "Burke" water swallowing test	92%	44%	De Pippo, Holas, Reding, Mandel & Lesser, 1994
		Patient report of history of cough on swallowing	71%	77%	Mari, Matei, Ceravolo, Pisani, Montesi & Provinciali, 1997
		Patient report of history of cough on swallowing PLUS 3 oz water swallow test	84%	78%	
Absent gag reflex or Abnormal sensation	Subsequent evidence of aspiration on videofluoroscopy	Bilateral pharyngeal sensation testing	100%	60%	Kidd, Lawson, Nesbitt & MacMahon, 1993



# Some Big Problems...

- ◆ Cough does not necessarily indicate aspiration
- ◆ Cough does not necessarily indicate ejection of material from the larynx
- ◆ Absence of cough does not necessarily rule out silent aspiration
- ◆ Absence of cough does not rule out other swallowing problems (e.g. residue)



# Debated Techniques

- ◆ Observing “wet voice” as an indicator
- ◆ Cervical Auscultation (specific acoustic features as indicators)
- ◆ Pulse Oximetry (desaturation as an indicator)
- ◆ Laryngeal Cough Reflex (absence of cough to irritant chemical as indicator)



# Survey of Division 13 affiliates

- ◆ Reported “issues” with screening:
  - Screening prior to giving oral meds vs. screening prior to feeding
  - Over-referral (SLPs being called in for EVERY patient)
  - Many patients unnecessarily made NPO
  - SLP swallow evals ordered for unresponsive patients
  - Timeliness of response once SLP assessment is ordered
  - Delay in administration of meds if waiting for swallowing assessment by SLP
  - Nursing compliance
  - Screening not being completed (or not properly)
  - Nursing staff turnover (training needs)
  - Mechanisms for training physician residents/interns
  - Physicians ordering diet and evaluation at same time



# Models emerging

- ◆ Different facilities have taken different approaches to developing models for the screening
- ◆ Some have developed specific tools to use



# Model A

- ◆ The speech-language pathologist trains nursing staff to conduct swallowing screenings. Nursing staff perform swallowing screening and refer patients who fail to speech-language pathology for a comprehensive swallowing assessment.



# Model B

- ◆ The physician performs swallowing screening in the course of his/her regular medical evaluation. He/she requests further swallowing assessment by the speech-language pathologist when he observes signs of swallowing difficulty.
- ◆ Physician swallowing screening tends to be less structured than swallowing screening conducted by nursing staff



# Model C

- ◆ Model A or B followed by an automatic referral within a specific time-frame (often 24-48 hours) for swallowing assessment by speech-language pathology for all patients admitted to the Acute Stroke Unit or with a specific diagnosis.



# Model D

- ◆ All patients are automatically referred to speech-language pathology for swallowing screening or assessment
- ◆ Is SLP available 24/7?



# Model E

- ◆ Nursing staff contact the speech-language pathologist on an on-call basis to request screening for patients who have presented to the emergency room with conditions that are recognized to pose a possible risk for dysphagia



# What do some facility screening forms look like?

- ◆ Many are in the form of a flow sheet
- ◆ Questions or behavioral tasks are posed
- ◆ If the answer is YES, the screening continues
- ◆ If the answer to any question is NO, the screening stops



# What areas are often included on the screening forms

- ◆ History questions
- ◆ Level of alertness
- ◆ Behaviors/signs considered risk factors for dysphagia and/or aspiration
- ◆ Observation of swallowing



# Measuring the effectiveness of a screening program

- ◆ % of admitted CVA patients who were screened
- ◆ Length of time to screen
- ◆ % of CVA patients who failed screening
- ◆ Length of time to SLP assessment
- ◆ % of patients who failed screening where later SLP assessment concurred or disagreed
  - Bedside
  - Instrumental
- ◆ % of CVA patients who develop specific complications (e.g. pneumonia) within a specified time frame
  - Those who failed initial screening
    - Those who received subsequent dysphagia intervention
  - Those who passed the initial screening



# Lessons learned from Central Baptist Hospital

- ◆ Transition of models
  - Neuroscience Executive Council recommended speech-language pathology screen all patients
  - Neuroscience Board had concerns:
    - “Not all patients need a screen”
    - Didn’t want patients to be hungry waiting on us
    - Concern over how to give meds
  - Decided the physician would screen



# Physician driven screening

- ◆ Physicians on Board agreed to standardized protocol
- ◆ Developed a form so they could simply check a box that screening was done
- ◆ Approximately 50% of patients had screening documented



# JCAHO visit in July 2006

- ◆ Patients weren't being screened
- ◆ Patients who were NPO were given oral meds
- ◆ Recommended a change in our procedure



# Nursing screening

- ◆ Training videotape developed
- ◆ Trained “superusers”
- ◆ Training of all nurses on designated units
  - Those who administer the NIHSS
- ◆ SLP repeats screening on all patients (pass or fail) to determine inter-rater reliability



# Questions??

- ◆ What is going on at your facility?
- ◆ What questions do you have?

