



EDUCATIONAL RESOURCES

# Dysphagia: Implications on Medication Administration in Serious Illness

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 HOME HEALTH



# Objectives

- Review dysphagia and its impact on medication administration
- Discuss dysphagia as part of prognostication and as an opportunity for evaluating medication appropriateness
- Highlight non-oral routes of administration and medications commonly continued in the final days and weeks of life

# Dysphagia

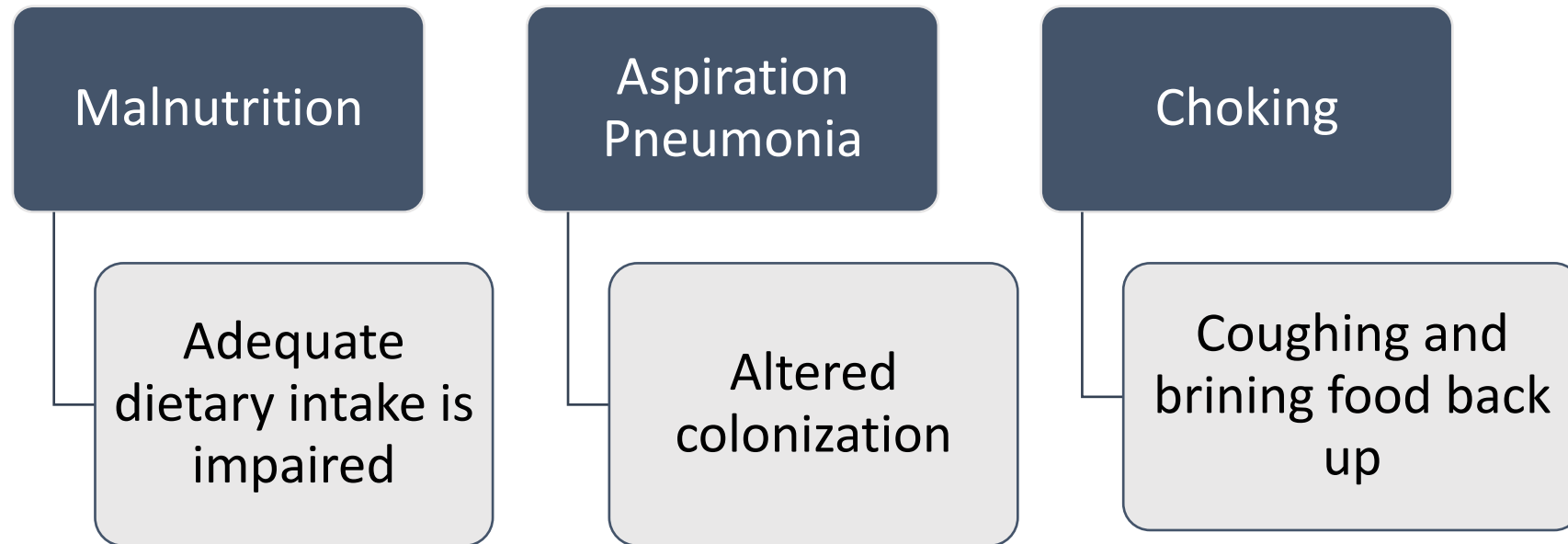
- Difficulty swallowing food or liquid
  - Includes medications
- Common symptom in advanced illness
  - Head and neck cancer, esophageal cancer, compromised neurologic function
- Swallowing evaluation
- Initial therapy
- Non-oral feeding



# Dysphagia: Risk Factors

- Clinical features
  - History of aspiration
  - Coughing, choking, frequent throat clearing
  - Prolonged chewing
- Cerebrovascular disease, cancer, pulmonary disease, frailty, polypharmacy
- Gastroesophageal reflux disease (GERD)
- Artificial airway or mechanical ventilation
- Secretions
- Age
- Pain

# Dysphagia: Complications



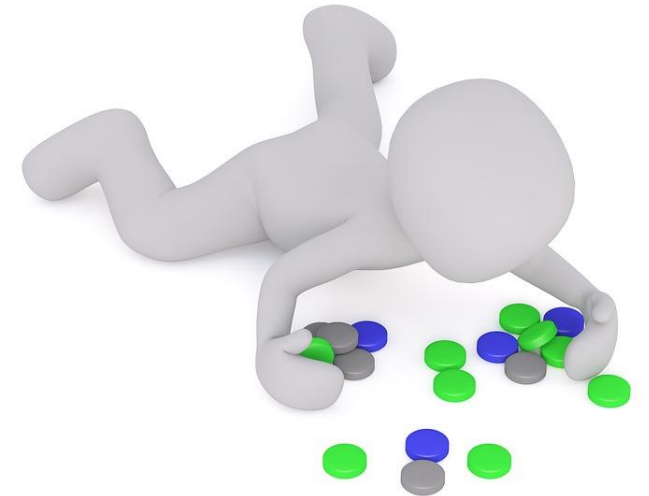
# Physiologic Changes: Prognostication

- Diminished appetite vs. difficulty swallowing
- Natural process
- Quality of life
  - Patient
  - Caregivers
- Goals of care
- Oral hygiene



# Medication Appropriateness

1. Is there an indication for the drug?
2. Is the medication effective for the condition?
3. Is the dosage correct?
4. Are the directions correct?
5. Are the directions practical?
6. Are there clinically significant drug-drug interactions?
7. Are there clinically significant drug-disease interactions?
8. Is there unnecessary duplication with other drugs?
9. Is the duration of therapy acceptable?
10. Is this drug the least expensive alternative compared with others of equal usefulness?



# Medications

- Difficulty swallowing tablets
  - Chronic dysphagia
  - End of life
- Multiple swallow attempts, residue, increased time and effort, fear
- Pharmacist medication review

## Therapy Modification

- Crushed tablets
- Orally disintegrating tablets
- Buried whole
- Alternate routes of administration
- Specialty compounding



# Medications

## Xerostomia

- Adding moisture
- Cevimeline, pilocarpine

## Infections: Thrush

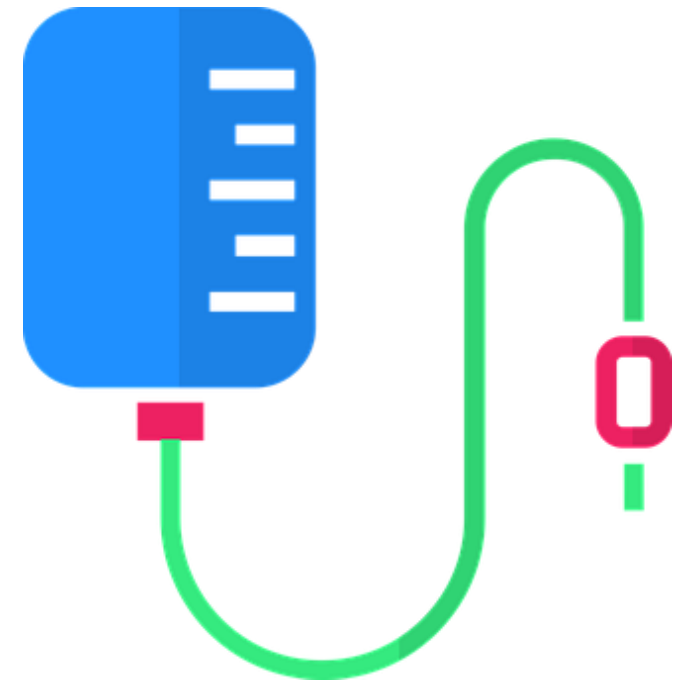
- Nystatin, fluconazole

## Gastroesophageal reflux disease (GERD)

- Behavioral modifications
- H-2 blocker: famotidine
- PPI: omeprazole, pantoprazole

# Routes of Administration: Intravenous

- Minimal patient burden
- Time to peak
- First pass metabolism
- Aggressive symptom management
- Patient location may limit availability
- Central venous access lines may be maintained proactively



# Routes of Administration: Subcutaneous

- Produce same blood levels as intravenous (IV) infusions
  - Parenteral formulation
  - Intermittently or continuous infusion
- Consider abdominal wall
  - Perfusion
- Volume considerations (limited infusion rate)
- Administration
- Safe and effective



# Routes of Administration: Gastrostomy Tube

- Placement may be controversial
- Convenient and usually well tolerated, when tube is already in place
- Liquid medications or crushable immediate-release formulations



# Routes of Administration: Sublingual & Transmucosal

- Many oral medications are available as oral solutions or oral concentrates
  - Concentrated oral solutions may be administered sublingually or buccally
  - Volumes > 1ml should only be administered to patients who can swallow
- Some medications have IV formulations readily absorbed by buccal, sublingual and nasal routes
  - Fentanyl, midazolam, lorazepam, ketamine, methadone
- Bioavailability considerations



# Orally Disintegrating Tablets (ODT)

## Analgesics

- Acetaminophen
- Meloxicam
- Zolmitriptan

## Antipsychotics

- Aripiprazole
- Clozapine
- Olanzapine
- Risperidone

## Gastrointestinal

- Hyoscyamine
- Lansoprazole
- Metoclopramide
- Ondansetron

## Neurologic Agents

- Alprazolam
- Clobazam
- Carbidopa-levodopa
- Donepezil

# Sublingual & Buccal Administration

Medication	Clinical Pearls
Alprazolam	Tablets may be administered SL
Atropine	1% ophthalmic drops
Dronabinol	5mg/mL oral solution
Fentanyl	Buccal tablets, lozenge, SL tablets, spray, IV solution
Haloperidol	2mg/mL oral concentrate
Ketamine	50mg/mL, 100mg/mL IV solution (mixed with cola)
Lorazepam	2mg/mL oral concentrate; tablets may be administered SL
Methadone	10mg/mL oral concentrate
Midazolam	IV solution: 5mg/mL
Morphine	20mg/mL oral concentrate
Oxycodone	20mg/mL oral concentrate

# Routes of Administration: Rectal

- Reliable route
  - Easy, minimal education, inexpensive
  - Used less frequently, long term
- Turning a patient may be physically uncomfortable or awkward
- Predictable absorption
- Ensure rectum is free from stool or tumor prior to insertion
- Macy catheter, small bladder catheter
- Avoid in patients with neutropenia, thrombocytopenia, diarrhea



# Routes of Administration: Transdermal

- Useful for stable, or localized, symptoms
- Difficulty with dose changes
- Cachexia
- Less useful in actively dying patients
  - Centralized circulation



# Physiologic Changes: The Dying Process

- Decreased oral intake and impaired swallowing
  - Weakness, sedation, metabolic disturbance
- Accumulation of upper airway secretions





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# Thank you

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