Medicines optimisation for people swallowing difficulties (Dysphagia)

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• Types of Dysphagia
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Aim of swallowing

Create a bolus of food/ fluids to allow for the safe and effective swallowing and exit of the bolus from the mouth via the oesophagus into the stomach
What are the stages of normal swallow?

Preoral

Oral

Pharyngeal

Oesophageal
Oral phase

- Food/fluid enters the oral cavity.
- Breaking down food/fluid with saliva.
- Rotary and lateral jaw movement.
- Bolus formed
Pharyngeal phase

- Laryngeal closure
- Hyoid and laryngeal elevation
- Upper oesophageal sphinter opens
- Base of tongue retraction
- Posterior pharyngeal wall contraction
Oesophageal phase

- Peristaltic wave action propels food and fluid into the stomach.

- SLTs not usually involved in the assessment and management of this phase.
What is Dysphagia?

Describes a swallowing disorder usually resulting from a neurological or physical impairment of the:

- Oral (mouth) – (SLT)
- Pharyngeal (upper throat) – (SLT)
- Oesophagaeal (lower throat) mechanisms – (Gastroenterology)
“Non-dysphagia” reasons for swallowing difficulties

• Size or shape of tablet or capsule
• Dry mouth
• Fear of choking (common phobia) causing
  – Tensing of throat, neck and chest muscles
  – Feeling of inability to breathe
  – Increased anxiety

For more information on this, see Adults and older adolescents:
https://www.sussexpartnership.nhs.uk/sites/default/files/documents/swallowing_leaflet_-_adults_-_ver_2_-_jul_15_0.pdf

Children and younger adolescents:
When is dysphagia a problem?

• Common complication of other conditions, occurring in up to
  • two thirds of patients suffering stroke
  • two thirds of patients with dementia,
  • a quarter of patients with Chronic Obstructive Pulmonary Disease (COPD)

• Associated with aspiration pneumonia and this can lead to poor functional outcomes, such as dehydration, malnutrition, increased length of hospital stay, and death
Pneumonia Post-Stroke

• Varies with criteria used and population group studied
• 7% - 32% incidence in acute stroke population\(^1\)
• Up to 20% of individuals with stroke-related dysphagia die during the first year post-stroke of aspiration pneumonia

Dysphagia or Aspiration and Pneumonia Post-Stroke

- Aspiration alone does not lead to pneumonia
- Aspiration of small amounts of saliva during sleep occurs in ½ of elderly (produce 0.75 to 1.5 litres per day)
- Pneumonia is likely to occur when lung’s natural defences are overwhelmed by excessive or toxic aspirate (importance of MOUTH CARE)
Silent Aspiration Post-Stroke

- Penetration of food below level of true vocal cords without cough or outward sign of difficulty
- 8%-26% of aspirators within 5 days post-stroke
- Cough reflex testing with citric acid 0.6mmol to test for silent aspirators- positive if coughing and lower risk of aspiration
- Water protocol- medication not with fluid/water, if on textured food, the medication administered with food

Dysphagia 1998; 13: 208–212
Signs and Symptoms of Dysphagia

When ingesting food
- Choking
- Coughing Drooling or loss of food from mouth
- Pocketing of food in cheeks
- Slow, effortful eating

- Avoiding foods or fluids
- **Difficulty swallowing pills**
- Person complaining of:
  - Food sticking in throat
  - Problems swallowing
  - Reflux or heartburn
How does dysphagia relate to medication?

• Patients with dysphagia are unable to take some oral formulations of medication.
• Medication administration errors have been found more than three times* as frequently in patients with dysphagia than in those without.

What do you need to know?
Modified fluids and diet

While pharmacists commonly encounter solid and liquid medication, SLTs have classified food and fluid consistencies to meet swallowing needs.

This information can be used to support safe oral administration of medicines where simple liquid or solid medication may not be safe.
New updated Fluid and Food descriptors

Development of International Terminology and Definitions for Texture-Modified Foods and Thickened Fluids Used in Dysphagia Management: The IDDSI Framework.
The IDDSI flow test to classify liquid thickness

The International Dysphagia Diet Standardisation Initiative (IDDSI) framework of terminology and definitions includes an objective measurement tool for liquid thickness. The syringe flow test classifies IDDSI Levels 0-3 based on their rate of flow.

Specifications: It is essential to use the following syringe dimensions for correct results.

- Length of 10ml scale = 61.5 mm
- Luer tip (central or eccentric or Luer-Lok)

SIGN UP TODAY TO STAY INFORMED OF IDDSI UPDATES
http://iddsi.org/contact-us
To crush or not to crush?

Knowledge of food textures can allow some tablets or capsules to be administered **whole**, rather than crushed tablets or opened capsules, within a particular texture of food.

This is always preferable from legal, pharmaceutical and administration perspective.
What about the law?

When products are used outside their licence (e.g. crushing tablets) a greater liability rests with the individual prescriber, dispenser and/or person responsible for the provision or administration of the medication.
Legal implications of altering a solid-dose oral formulation

- To protect patients, the law requires that the:
  - Right medicine is given to the
  - Right person, at the
  - Right time, using the
  - Right dose, in the
  - Right form
Minimising risk to patients and staff

**Liability** can be minimized by:

- **Clear documentation** of the reason for altering the medicine
- Following evidence-based, safe, effective practice

- Obtaining consent from the patient (in England and Wales, doctors may act in a patient’s best interest if the patient is incapable of providing consent [in accordance with the Mental Capacity Act 2005]; in Scotland, doctors must act according to requirements of Part 5 of the Adults with Incapacity [Scotland] Act 2000)
Flow chart for managing medicines in patients with dysphagia

1. General Principles
   Swallowing difficulty identified:
   Liaise with Speech and Language Department

2. SLT recommend
   Modified diet and fluids

3. SLT recommend
   Water protocol WITH ORAL DIET

4. SLT recommend
   Water protocol only or Nil By Mouth

This flow chart provides a simple method of determining the stage of swallowing for individual patients and for the corresponding manipulation of formulation to allow for the safe and most effective administration of medication.
What can we do in Hospital

• Look above patient’s bed for leaflet from SLT indicating the patient’s swallowing recommendations!!!

• Pharmacists must then amend the patient’s medication as per the SLT recommendations to ensure safe and effective administration of medication
Section A
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1. General Principles

- Consider the following when prescribing medication for a patient with dysphagia:
  - Is this medication still indicated and required? Perform a medication review.
  - Can this tablet/capsule be swallowed whole with yogurt (check compatibility with yogurt - check drug-food interaction) e.g. levothyroxine, bisoprolol, ramipril?
  - Does the tablet need be crushed or the capsule opened and administered with thickened fluid or yoghurt.
  - Check compatibility with yogurt or pureed food must be checked for drug-food interaction. Remember to check SLT recommendations re. diet stages and fluid consistency.
• Can the tablet be swallowed whole when mixed with appropriate consistency of food/fluid? Check the size of the tablet which is comfortable for the patient to swallow. Small tablets, including bisoprolol, levothyroxine, may be suitable.

• Does the person administering/nurse know how to prepare and administer this medication. Speak to nurse administering medication.

• Annotate discharge letter to GP and communicate with community pharmacist on the patient’s medication administration and swallow
Section A
Flow chart for managing medicines in patients with dysphagia

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A stepwise approach:

**STEP 1**

*Use a licensed medicine in a suitable formulation.*

In order to use a licensed medicine, consider switching to a different agent in the same class, or to a different route of administration.
Consider the patient’s method of feeding:

- For patients on thickened fluids, liquid medicines can be mixed with products like Thick and Easy Clear®. –Check for ability to thicken-
e.g Movicol® does not thicken-change to magnesium hydroxide with quarter scoop of Thick and Easy Clear® -feed with a spoon.
- In some cases, patient’s may swallow small whole tablets with a teaspoon of soft puree or yogurt
- Patients on soft-food diets may be able to swallow tablet whole or crushed tablets or the contents of capsules given with food (unlicensed).
- Patients with enteral feeding tubes may have oral medicines given by this route.
- Patients on liquid feeds may take oral liquid medicines, dispersible tablets or solid preparations dispersed in water prior to administration.
STEP 2
Use a licensed medicine in an unlicensed manner

e.g. crushing/dispersing tablets in water or by opening capsules:

- Ramipril capsules can be opened and the contents mixed with water.
- Bendroflumethiazide tablets can be dispersed in water. Both the above examples are suitable for administration orally or via a feeding tube.

Not all medicines are suitable for administration in this way and check resources (NEWT Guidelines, Handbook of Enteral Feeding)

As before, consider switching to a different agent or route of administration in order to use a licensed product.
STEP 3
Where there is no licensed option, consider a ‘special’.

Special-order (‘special’) liquid medicines are unlicensed and expensive. They should only be used if there is no licensed medicine that meets the patient’s needs e.g. ethambutol liquid 500mg/5ml, demeclocycline liquid 300mg/5ml cost £315/150ml (short expiry date and very, very expensive)
Flow chart for managing medicines in patients with dysphagia

1. General Principles
   - Swallowing difficulty identified:
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This flow chart provides a simple method of determining the stage of swallowing for individual patients and for the corresponding manipulation of formulation to allow for the safe and most effective administration of medication.
4. Water Protocol with No Oral diet

Tips for managing patients on Water Protocol with NO ORAL DIET

- **Medications cannot be taken orally in any form**
- Is an enteral feeding tube to be inserted? If yes, discuss with PHARMACY to amend and advise on most appropriate formulations (see NEWT Guidelines and Handbook of Drug Administration via enteral feeding tubes)
- Only water to be sipped when required.
- No other fluids to be given i.e. tea, orange juice, soup. **WATER ONLY.**
- Regular mouth care to keep the mouth clean, especially after mealtime
Nil by mouth

• Some patients require an enteral feeding tube (nasogastric tube (NG tube- short term solution) and later Percutaneous endoscopic gastrostomy (PEG) or Radiologically Inserted Gastrostomy (RIG)

**Tips for managing patients with enteral feeding tubes:**

• Does this patient have a patent enteral feeding tube? **YES,**
• Refer to NEWT guideline/ Handbook of Drug Administration via enteral feeding tubes
• **Review cost and availability of medication of licensed liquid/dispersible tablet.** Try to avoid unlicensed crushing of tablets/opening capsules or unlicensed special liquid formulation.
• Regular mouth care to keep the mouth clean
• Annotate discharge letter to GP and communicate with community pharmacist on the patient’s medication administration, rationale for choice and length of therapy.
Hospital Pharmacist’s role in supporting patients with dysphagia

- Determine how the patient swallowed food and medication prior to admission
- Review the patient’s
  - dysphagia treatment plan
  - medication
- Investigate alternative methods of administration, dosage forms, or drugs and make recommendations
- Document instructions on medication administration for the patient, family member or inpatient nurse and in patient record
- Transfer information to next sector of care
What can we do in community?

• Determine what degree of swallow difficulty a patient has (stage of fluid/texture of food, PEG tube?)
• Liaise with carer/family/nurse who administer medication
• Follow SLT recommendations for Fluids and Food
• Amend medication formulations to ensure safe and effective administration taking into account drug-food interactions etc
• Advise and educate family/carers to medication administration
Case study

- Mr SM 83 male patient with vascular dementia admitted to hospital.
- On admission, daughter informs that patient has difficulty swallowing medication and is referred to SLT.
- SLT recommend-- Stage 1 fluid and puree diet.
Medication

- Ramipril capsules 1.25mg daily
- Clopidogrel tablet 75mg daily
- Ferrous fumerate tablet - 210mg daily
- Lansoprazole capsule 30mg daily
- Simvastatin tablet 40mg at night –
- Paracetamol 500mg tablet- 1000mg four times a day
Medication amended as follows:

- **Ramipril capsules 1.25mg daily** – swallow whole on puree/yogurt – if unable then, **change to tablets**

- **Clopidogrel 75mg tablets** – swallow whole on puree/yogurt – if unable then, crush and administer with puree

- **Ferrous Fumarate 210mg tablet** - administer tablet whole with yogurt/puree food – if unable then, crush and administer- liquid less viscous, can thicken

- **Lansoprazole 30mg daily** - Change to Oro-dispersible tablet administration with puree/ or open capsule and sprinkle pellets on food/puree (unlicensed)

- **Simvastatin 40mg tablet** - administer tablet whole with yogurt/puree food – if unable then, crush and administer

- **Paracetamol tablet** - break into quarters and administer with puree or change to liquid 250mg/5ml- thick suspension (however 20ml= 1g--- sorbitol/mannitol=laxative effect)
What can you do to optimise medicines for people with dysphagia?

• Ask questions:
  – What liquid consistency and food texture can the patient SAFELY swallow?
  – Is there an alternative formulation to oral?
  – Can the medication be altered within the same therapeutic class to allow for a licenced product?

• If no option for a licensed product, can the oral medication be administered crushed or capsules opened (unlicensed)?
  – Is there any evidence for administration with food?
Medicines optimisation and dysphagia
Aim is to provide safe, evidence based, well reasoned intervention:

• Use a licensed medicine in a suitable formulation to meet the patient’s needs (e.g. a dispersible tablet or licensed liquid medicine).
  – If no suitable licensed formulation, consider using a licensed medicine in an unlicensed manner, for example by crushing tablets or opening capsules
  – In order to use a licensed medicine, consider switching to a different therapeutic agent in the same class, or to a different route of administration. In most cases a suitable licensed preparation will be available to meet the patient’s needs.
  – In the few situations where the patient’s needs cannot be met by licensed medicines, the use of special-order products (‘specials’) may be considered. Consider that the cost can be hundreds of pounds instead of pence per month.
Support with guidance

How to crush tablets for oral administration

Care staff may only administer medicines in an unlicensed manner on the instruction of the prescriber. This means that a written direction to crush or disperse tablets must be documented on the patient’s prescriptions and in the care plan. Ask the prescriber to complete the relevant form to permit the crushing of a tablet (see page 2).

Crushing / dispersing tablets
- Please use an ‘enclosed type’ tablet crusher
- Only crush one tablet at a time
- Crush / disperse tablet just before administration

Guidelines for crushing tablets
1. Place tablet in tablet crusher
2. Crush tablet
3. Add the powder to 15-30ml water in a medicine cup
4. Mix well
5. Draw up solution using an appropriately sized oral syringe
6. Administer to patient immediately

Guidelines for dispersing tablets
1. Place tablet in 15 - 30 ml of water in a medicine cup
2. Allow to disperse
3. Draw up solution using an appropriately sized oral syringe
4. Administer to patient immediately

Guidelines for administering medicines in soft food
1. Follow the guidelines for crushing tablets (see above)
2. Put the powder on a tablespoon.
3. Scoop a teaspoon of cold soft food (e.g. yoghurt or jam) and mix with powder.
4. Administer to patient immediately

Medicines should only be administered in food with the patient’s knowledge and consent. Hiding medication in food is considered ‘covert administration’ and is only condoned in certain circumstances.

Always check if a tablet is suitable for dispersing or crushing beforehand.
Do not use a mortar and pestle to crush tablets.

For advice on appropriate dosage forms or to check if tablets or capsules can be dispersed, crushed or opened, please contact: NHS Lambeth Medicines Management team on 0203 049 4197, or email medicines.management@lambethpct.nhs.uk

Adapted from: UKW - Choosing medicines for patients unable to take solid oral dosage forms (January 2010)
Celine Chack (Consultant Pharmacist for Older People)
Steve Birch (Primary Care Pharmacist)
January 2011
Cough Reflex Testing:

• Use nebulised citric acid 0.6mmol to test if patient has cough reflex
• Diagnostic test to determine if dysphagic patient is at risk of silent aspiration
• No cough reflex = risk of silent aspiration
• Currently in hospitals only, plans to roll out service into the community
• Citric acid 0.6mmol nebulise solution unlicensed- Manufactured at Northwick Park Hospital
Dysphagia and medicines PJ August 2016, Vol 297, No 7892

https://www.pharmaceutical-journal.com/learning/learning-article/how-to-tailor-medication-formulations-for-patients-with-dysphagia/20201498.article
Remember

- **Gather information** on type & duration of swallowing difficulty

- **Understand food and fluid textures** to amend oral medicine appropriately, in line with SLT guidance for eating and drinking

- **Liaise with community pharmacy**, health and social care staff, carers/family and patients to agree prescription, supply & administration

- **Plan for ongoing care** setting date for review & monitoring.
Resources

• Guidelines on the medication management of adults with swallowing difficulties
  https://www.guidelines.co.uk/dysphagia/swallowing-difficulties-medication-management-guideline/453844.article
  See also example

• Choosing medicines for patients unable to take solid oral dosage forms (UKMi, Specialist Pharmacy Service) :
  https://www.sps.nhs.uk/articles/what-are-the-therapeutic-options-for-patients-unable-to-take-solid-oral-dosage-forms/

• Sign- management of patients with stroke, identification and management of dysphagia
  http://www.sign.ac.uk/assets/sign119.pdf

• RPS Guidance on Pharmaceutical Issues when Crushing, Opening or Splitting Oral Dosage Forms June 2011

• SPS website
Resources continued

• **Crushing Tablets & Drug Administration via Enteral Feeding Tubes including list of resource material**

• **Medicines Optimisation in Patients with Dysphagia**

• **Interdisciplinary management of dysphagia following stroke.** MacFarlane M, Miles A, Atwal, P, Parmar P. British Journal of Neuroscience 2014 Nursing Vol 10 1:267-272

• **Interdisciplinary management of dysphagia.** Miles A, MacFarlane M, Atwal P, Parmar P. Journal of Nursing and Residential Care 2014 Vol 16 10:495-7 (reprinted)