Supporting patients with swallowing difficulties: Medicines and dysphagia

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Introduction

What is Dysphagia?
Dysphagia is the term used to describe a swallowing disorder usually resulting from a neurological or physical impairment of the oral (mouth), pharyngeal (upper throat) or oesophageal (lower throat) mechanisms.

Why is it a problem?
Dysphagia is a common complication of stroke, occurring in up to two thirds of patients suffering stroke (Martino et al 2005). It also occurs over two thirds of patients with dementia, up to a quarter of patients with Chronic Obstructive Pulmonary Disease and is commonly found in patients with progressive neurological diseases e.g. Parkinson’s Disease and head and neck cancers. Dysphagia is associated with aspiration pneumonia and this can lead to poor functional outcomes, such as dehydration, malnutrition, increased length of hospital stay, increased need for residential care and health-care costs. Over 50% of people with advanced dementia and up to one-third of stroke patients will develop pneumonia.

Dysphagia is a significant problem following stroke as whilst stroke is the third most common cause of death and the most important cause of long-term disability most stroke-related deaths are due to medical complications of the stroke, rather than directly due to the neurological damage. 30% of post-stroke deaths are due to pneumonia.
Dysphagia is commonly noted as a symptom in the frail elderly or with any impairment of oral structure, the respiratory or neurological system can cause dysphagia (RCSLT 2009).

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 (Kelly et al 2012). Where dysphagia is not identified and managed, it can lead to significant negative consequences ranging from unintended non-adherence to choking, aspiration pneumonia and death (RCSLT 2009).

How is it identified?
Patients with dysphagia may cough on the swallowing of liquids and/or food. This will affect their ability to safely take medication. In hospital, patients who cough when administered fluids like water, tea, coffee to drink or on eating food, will be signposted by the nurses to speech and language therapists (SLT) to assess the patient’s swallow. These patients may present with lower respiratory infections (aspiration pneumonia).

In the community, a patient may present to a member of the pharmacy team and identify that they are having difficulty swallowing medication. This is an opportunity to establish whether the patient has difficulty swallowing food or liquids and whether there has been any associated weight loss. A patient with these symptoms can then be referred via GP services to speech and language services.
Many patients with dysphagia aspirate (food/fluid or saliva entering the airway) without coughing (silent aspiration). In the acute post-stroke dysphagic population patients are more likely to silently aspirate than cough on aspiration (audible aspiration). Patients that silently aspirate are more difficult to identify and are more likely to develop aspiration pneumonia than those that don't aspirate or audible aspirate. Video Fluoroscopy (VFS), Fibre-optic Endoscopic Evaluation of Swallowing (FEES) and Cough Reflex testing (CRT) are all tools that are used to identify silent aspiration.

How can pharmacists help?
Knowledge of dysphagia and interpreting the various stages of fluid and consistency of foods can assist pharmacists in advising in the most appropriate and safe manner in administering medication to patients with dysphagia. While guidance exists for the administration of medication via NG and PEG tubes (NEWT Guidelines and Enteral Feeding Handbook) there is no national available resource to guide pharmacists in optimising formulation for patients with dysphagia. Medication administration in people with dysphagia is complex and poses pharmaceutical and legal challenges. Pharmacist advice should be sought for all people requiring diet modification to ensure that speech and language therapy recommendations regarding safety can be translated into safe medication prescriptions. Pharmacists should be consulted and patient care plans should be individualised to provide safe and effective pharmaceutical support. United Kingdom Medicines Information (UKMI) Q&A’s provide information to support patients with swallowing difficulty and Parkinson’s disease and guidance around crushing tablets or opening capsules in a care home setting.

Who is the resource for?
This resource is intended to support pharmacists and those who are involved in administering medication to patients with dysphagia in selecting the most appropriate method of administering medication. It can be used in the community to support GPs, SLTs and those who help others with administration of medication to ensure safe selection and administration of appropriate formulations. It can be used to support multidisciplinary approaches to optimising swallowing management which will ensure people with dysphagia receive safe, appropriate medication formulations. In hospital, the resource is designed to help pharmacists who are part of the multidisciplinary team, which includes dieticians, doctors, nurses, and speech and language therapists, focussing on management of swallowing safety, as well as nutrition, hydration and pharmaceutical needs.

What does this resource contain?

A: Flow chart for identification of medication formulation requirement
B: Unlicensed medication and the law
C: Reference and further reading
### Terminology

- **PEG** - Percutaneous endoscopic gastrostomy
- **NG** - Nasogastric tube
- **Texture B** 'Thin blended diet' cannot be eaten with a fork. e.g. tinned tomato soup, runny yoghurt (thin - not set), thin custard - pours from a spoon rather than drops in a lump.
- **Texture C** 'Thick blended diet' can be moulded, layered and piped. It will hold its own shape and can be eaten with a fork. No chewing required. e.g. blancmange, smooth fromage frais, mousse, whipped double cream. **IT SHOULD BE SMOOTH - NO LUMPS**
- **Texture D Mashed Diet** - Food that requires very little chewing
- **Texture E Soft Diet** - Foods made up of solids and thick sauces e.g. sponge pudding, fish in sauce, banana, macaroni cheese, potato, cooked carrots, bread with soft filling, tinned fruit
Section A
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.
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?

- Can the tablet be crushed or the capsule opened and administered with for administration 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, such as those less than 4mm including bisoprolol, levothyroxine, may be suitable.

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

- Annotate discharge letter to GP and communicate with community pharmacist on the patient’s medication administration and swallow (see Appendix 1 and Appendix 2 for information and communication sheet examples).

2. **Modified fluids and diet**

While pharmacists commonly encounter solid and liquid medication, SLTs have classified food and fluid consistencies to meet swallowing needs. These can be used to support safe oral administration of medicines where simple liquid or solid medication may not be safe.

**Food textures**

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 both legal, pharmaceutical and administration perspective.
Food textures identified include (NPSA, 2011)

- **Texture B** ‘Thin blended diet’ cannot be eaten with a fork. e.g. tinned tomato soup, runny yoghurt (thin - not set), thin custard - pours from a spoon rather than drops in a lump.

- **Texture C** ‘Thick blended diet’ can be moulded, layered and piped. It will hold its own shape and can be eaten with a fork. No chewing required. e.g. blancmange, smooth fromage frais, mousse, whipped double cream. *IT SHOULD BE SMOOTH - NO LUMPS*

- **Texture D** Mashed Diet - Food that requires very little chewing

- **Texture E** Soft Diet - Foods made up of solids and thick sauces e.g. sponge pudding, fish in sauce, banana, macaroni cheese, potato, cooked carrots, bread with soft filling, tinned fruit

**Fluid consistencies** (House L, 2013)

Pharmacists need to be aware of fluid consistencies which are manipulated using thickeners. There are various brands of thickener. Each brand has its own formulae, found on the reverse of the tin, for achieving various fluid consistencies between brands and they differ from one another. In addition, local policies may exist which specify unique guidelines for thickening fluids that differ to or are in addition to guidelines on the reverse of the thickener tin. It is vital to establish which type of thickener is being used for each patient, the recommended fluid consistency AND guidance on how this consistency is achieved. Failure to do any of the above increases risk of aspiration and choking.

An example is provided below for Hormel’s ‘Thick and Easy Powder’:

**Stage 1**: 1 level scoop ‘Thick and Easy’ powder per 100mls fluid : SYRUP CONSISTENCY

**Stage 2**: 1.5 level scoops ‘Thick and Easy’ powder per 100mls fluid : CUSTARD CONSISTENCY

**Stage 3**: 2 level scoops ‘Thick and Easy’ powder per 100mls fluid : PUDDING CONSISTENCY

MIX WITH A FORK AND LEAVE TO STAND FOR 1 MINUTE

**How to administer common medications that are used in patients after stroke**

The following table provides examples of administration for common medication used after stroke. It is correct at the time of publication and refers to generic products where available.
### Common drugs used in stroke:

<table>
<thead>
<tr>
<th>Drug</th>
<th>Formulation</th>
<th>Administration</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin</td>
<td>Use dispersible tablets</td>
<td>With puree, thickened fluids</td>
<td></td>
</tr>
<tr>
<td>Clopidogrel</td>
<td>Tablet crushed</td>
<td>With food</td>
<td>Specials available but expensive, short expiry date</td>
</tr>
<tr>
<td>Warfarin, Apixaban,</td>
<td>Tablet crushed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rivaroxaban, Endoxaban</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dabigatran,</td>
<td>Change to alternative NOAC</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Simvastatin, Atorvastatin</td>
<td>Crushed</td>
<td>With food</td>
<td>Specials available but expensive, short expiry date</td>
</tr>
<tr>
<td>Lansoprazole,</td>
<td>Use dispersible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omeprazole</td>
<td>Change to lansoprazole fast tablets</td>
<td>N/A – care with NG tubes</td>
<td>Special available but expensive and short expiry date</td>
</tr>
<tr>
<td>Amlodipine</td>
<td>Crushed</td>
<td>With food</td>
<td>Specials available but expensive, short expiry date</td>
</tr>
<tr>
<td>Ramipril</td>
<td>Crushed tablet/open capsule</td>
<td>With food</td>
<td>Specials available but expensive, short expiry date</td>
</tr>
<tr>
<td>Bendroflumethazine</td>
<td>Crushed</td>
<td>Administered with food</td>
<td>Specials available but expensive, short expiry date</td>
</tr>
<tr>
<td>Metformin</td>
<td>Crush tablets licensed liquid available</td>
<td></td>
<td>Sachets unavailable</td>
</tr>
<tr>
<td>Sodium valproate</td>
<td>Use licenced liquid</td>
<td>Add Thickener powder</td>
<td>With spoon</td>
</tr>
<tr>
<td>Levetiracetam</td>
<td>Use licenced liquid</td>
<td>Add Thickener powder</td>
<td>With spoon</td>
</tr>
</tbody>
</table>
3. **Water Protocol with oral diet**

Patients, who are at risk of aspirating fluids like tea, coffee, juice etc., are at a high risk of aspiration pneumonia due to the fluids entering their lungs when drinking. These patients are then placed on a Water Protocol with oral diet. Water has a neutral pH and is relatively free of bacteria. Lungs can tolerate small amounts of water, whereas other fluids (such as tea, fruit juice, and squash) can cause chest infections if they enter the lungs.

If a patient is recommended for the Water Protocol, they CANNOT take medication with water and they CANNOT take liquid medication. The patient may be “risk feeding” i.e. where all concerned are aware that there is a risk of aspiration with oral food. Where an oral diet is recommended, it may be possible for medication to be taken with yoghurt/pureed food (check drug-food interactions).

Key information about the **Water Protocol with oral diet**

- **Medications NOT to be taken with water.** PHARMACY to advise on medication administration.
- **Check food texture being given with SLT as medication may be given with food**
  - No water to be given at mealtimes or for 30 minutes after eating
  - No other fluids to be given i.e tea, orange juice. **WATER ONLY.**
  - No thin food textures i.e. soup, ice cream, cereal and milk
  - Do not give thickened fluids – even if coughing
  - Regular mouth care to keep the mouth clean, especially after mealtimes

Remember the General Principles ([section 1](#)) still apply
4. Nil By Mouth and Water Protocol with No Oral diet

Water Protocol with No Oral diet
If a patient is recommended ‘The Water Protocol’ only and NO ORAL DIET, medications cannot be taken orally in any form. In hospital, there may be times where there is a clinical decision not to require immediate insertion of an NG tube while the patient continues on the Water Protocol with no oral diet.

Tips for managing patients on Water Protocol with NO ORAL DIET
- Medications must NOT to be taken with water or any oral food.
- 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. 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) tube (long term solution)). Guidance is available to support safe medication administration via enteral feeding tubes.

Tips for managing patients with enteral feeding tubes:
- Does this patient have a patent enteral feeding tube?
- 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. Full guidance is available here
- 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.
Section B
Unlicensed medicines & the law

Under the Medicines Act, which governs all medicine usage in the UK, all prescribers (doctors, dentists, independent and supplementary) are allowed to prescribe medicines outside of their license either for unlicensed patient groups (off-label) or medicines with no license e.g. medicines with a non-EU license (unlicensed). By prescribing either an off-label or unlicensed medicine the liability rests with the prescriber. It may also rest with the administrator and supplier if they are aware of the unlicensed or off-label use and were in a position to intervene. (see Ch 7 Handbook of Drug Administration via enteral feeding tubes)

Prescribing decisions that fall below the accepted standard can lead to:

- Civil liability
- Criminal liability
- Professional liability
- Breach of employment contract

- Prescribers should make clear documentation of the reasons why this action is taken.
- The issue should be discussed with the patient – this should also be documented. Documentation in the patient’s care plan and labelling of medication
- Instructions should clearly state how the medicine is to be administered – if the form is altered it must be done immediately before administration
- In general, administrators of medication may only administer medicines in an unlicensed manner on the instruction of the prescriber but local procedures need to be taken into consideration
- Patients should be aware of medication being administered; administering a crushed tablet in food for example is not designed to disguise the medication but to aid the patient swallowing it.
Appendix 1: Example of directions of how to crush tablets for community care

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 syringe
6. Administer to patient immediately

Guidelines for dispersing tablets
1. Place tablet in 15 - 30ml 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 teaspoon
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 NHSLambeth Medicines Management team on 0203 688 4107, or email medicines.management@lambethpct.nhs.uk

Adapted from: CMOB: Choosing medicines for patients unable to take solid oral dosage forms (January 2016)
Lelly Oboh (Consultant Pharmacist for Older People)
Cuba Chiropractic (Primary Care Pharmacist)
January 2011

With kind permission of Lelly Oboh, Consultant Pharmacist on behalf of Lambeth Community Health
Appendix 2: Example of GP document authorising the crushing of medications for care homes

**PLEASE COMPLETE AND FAX BACK TO THE CARE HOME**

To:  
From:  
Date:  

Re:  Crushing medicines / enteral tube administration for

Medication (continue on second sheet if required)

The following medication can safely be crushed / dispersed in water (all instructions have been annotated in the drug chart accordingly):

This list has been checked with the pharmacist/pharmacy reference sources by
(Name)  
Date:  

To be completed by the GP/authorising doctor:

I, Dr______________ (GMC number ________________) authorise the administration of the following crusheddispersed tablets, opened capsules and liquid medication orally / via an enteral feeding tube (delete as appropriate) for the above patient while in a Lambeth Care Home. I am aware that this is off-label (unlicensed) administration.

Signed: ___________________ Date:

With kind permission of Lelly Oboh, Consultant Pharmacist on behalf of Lambeth Community Health
| Section C  
<table>
<thead>
<tr>
<th>Key Resources</th>
</tr>
</thead>
</table>
| Choosing medicines for patients unable to take solid oral dosage forms (UKMi):  
| Consensus guideline on the medication management of adults with swallowing difficulties  
http://www.equidelines.co.uk/equidelinesmain/gip/vol_11/sep_08/wright_dysphagia_sep08.php?sector=professional#.VB866zd0zIU  
| Crushing Tablets & Drug Administration via Enteral Feeding Tubes  
| Handbook of drug administration via enteral feeding tubes  
https://www.medicinescomplete.com  
http://www.nursingtimes.net/Journals/2012/05/18/i/j/b/120522-med-errors.pdf  
| House L. 2013 Thickened Fluids and Modified Diet- Speech and Language Therapy: Blackpool Teaching Hospital NHS Trust  
http://stroke.ahajournals.org/content/36/12/2756.full  
| Medicines Optimisation in Patients with Dysphagia:  
http://dysphagia-medicine.com/index.html |
<table>
<thead>
<tr>
<th>Resource</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal College of Speech and Language Therapists (RCSLT) RESOURCE MANUAL FOR COMMISSIONING AND PLANNING SERVICES FOR SLCN: Dysphagia 2009 (updated 2014)</td>
<td><a href="http://www.rcslt.org/speech_and_language_therapy/commissioning/dysphagia_manual_072014">http://www.rcslt.org/speech_and_language_therapy/commissioning/dysphagia_manual_072014</a></td>
</tr>
<tr>
<td>United Kingdom Medicines Information What are the therapeutic options for patients unable to take solid oral dosage forms? UKMI Q&amp;A 294.3</td>
<td><a href="https://www.sps.nhs.uk/articles/academic-detail-aid-for-prescribers-d-choosing-medicines-for-patients-unable-to-take-solid-oral-dosage-forms-qa-307-1/">https://www.sps.nhs.uk/articles/academic-detail-aid-for-prescribers-d-choosing-medicines-for-patients-unable-to-take-solid-oral-dosage-forms-qa-307-1/</a></td>
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