Administering drugs to patients with swallowing difficulties

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Dysphagia is common among older patients. Its impact can be profound can swallowing difficulties not only undermine the quality of life and exacerbate malnutrition but also complicate medication administration. Tablet crushing and capsule opening are widespread, yet few health care professionals are aware of the pharmacological or legal aspects of these practices. This article examines some of the causes of dysphagia in older patients, its impact on medication management and practical ways for nurses to meet this challenge.

Dysphagia is prevalent in older patients for a number of reasons. Older people are more prone to diseases linked to dysphagia, such as advanced Alzheimer’s disease, stroke and cancer (Eggenberger and Nelms, 2004; Finestone and Greene-Finestone, 2003). It has been estimated that up to 40 per cent of patients who experience stroke suffer from swallowing problems (Eggenberger and Nelms, 2004).

More than half of patients with Parkinson’s may exhibit symptoms of dysphagia (Kawamura et al, 2004). It can also arise from a cancer or its treatment. Tumours in the mouth, throat or oesophagus can obstruct the flow of food (Woodruff, 2004). Radiotherapy can induce mucosal inflammation and damage salivary glands, causing painful dysphagia and xerostomia (dry mouth) (Gaze and Wilson, 2003; Mercadante, 2002).

**REFERENCES**


**Learning objectives**

Each week *Nursing Times* publishes a guided learning article with reflection points to help you with your CPD. After reading the article you should be able to:

- Understand what dysphagia is;
- Be familiar with some of the causes of dysphagia;
- Know the pharmacological implications of crushing tablets or opening capsules;
- Understand the legal implications of crushing tablets or opening capsules.

**Swallowing difficulties and stroke**

Stroke is one of the most common causes of dysphagia (Murry et al, 1999). Six months after an acute stroke only 34 per cent of survivors are able to eat properly. Some 61 per cent show slight eating difficulties and five per cent moderate eating difficulties (Perry and McLaren, 2003).

In another study, 42 per cent of survivors of stroke either choked when they attempted to swallow or showed abnormal swallowing. The fatality rate was particularly high among this group (Wade and Hewer, 1987). Up to one-fifth of survivors die from aspiration pneumonia during the first year after their stroke. A further 10 per cent to 15 per cent of those who die over the next few years succumb to aspiration pneumonia (Murry et al, 1999).

Dysphagia most commonly occurs when the stroke affects the brainstem. Infarct size also correlates with dysphagia risk – the larger the infarct the greater the risk (Murry et al, 1999). These correlations are not absolute and some patients with relatively small cortical strokes will develop dysphagia.

**Dysphagia and the ageing process**

As well as the diseases outlined above, several age-related changes may contribute to dysphagia. For example, salivary gland function usually declines as patients get older. The resulting xerostomia can contribute to dysphagia (Mercadante, 2002). Also, the nerves from the larynx induce contraction of the upper oesophageal sphincter and abnormalities in this reflex seem to contribute to some cases of dysphagia (Kawamura et al, 2004).

**Defining dysphagia**

Dysphagia may be due to either a local lesion or part of a generalised disease. Patients tend to complain of something sticking in their throat or chest during swallowing or immediately afterwards. Some patients will not acknowledge their symptoms, possibly through embarrassment or because of difficulties in communication. Any of the following situations could mean dysphagia:

- Recurrent chest infections, which could be a sign that food or liquid is entering the lungs;
- Coughing while or immediately after swallowing, which could indicate that food is travelling the wrong way and there is a risk of food entering the lungs;
- A rattling or gurgling voice after swallowing, particularly after swallowing liquids, which is an
BOX 1. KEY POINTS

- Older people may find it difficult to swallow drugs that are in tablet or capsule form.
- Crushing tablets before administering them can result in drugs being released over a period of five to ten minutes instead of the intended 12–24 hours.
- Many liquid alternatives are available that are more convenient for older people to take.
- Nurses must take into account legal and pharmacological considerations when administering medicines to dysphagic patients.

indication that liquid has entered the voice box;
- Brining food or liquid back up after swallowing;
- Food or liquid regurgitated after swallowing;
- Food or liquid coming down the nose;
- Weight loss.

There are a number of diagnostic tools for assessing the cause of dysphagia. A fibre-optic laryngoscope can be used to examine the patient’s throat, ultrasound to image the various stages of swallowing and occasionally video fluoroscopy to produce video of the swallowing mechanism.

Administration of drugs

Between 15 and 33 per cent of patients in nursing homes report having trouble swallowing solid oral medications (Wright, 2002; Stevenson, 2002). The crushing or opening of medication to make administration easier (unlicensed administration) takes place at least once a week in more than 80 per cent of all nursing homes. While the majority of nurses (90.3 per cent) would not be reluctant to ask the prescriber for a liquid alternative, 58 per cent stated that the prescriber may recommend that medicines be crushed or opened (Wright, 2002) – a practice that has both pharmacological and legal implications.

Pharmacology of tablet crushing

Medicines are available in a variety of formulations including controlled and modified release. It is essential that they are swallowed whole. When crushing a tablet or opening a capsule, the dose is released over five to ten minutes as opposed to 12–24 hours. This results in an initial overdose followed by a subsequent period without medication. Many commonly prescribed drugs are not controlled or modified release but there is no way of recognising them by simply looking at the tablet or capsule.

Extended release preparations

Extended release preparations allow the dosage frequency to be halved compared with conventional dosing. The drug is released over a predetermined period of time, aiding compliance through reduced dosage frequencies, and may help minimise unwanted side-effects. An example of this can be seen with Slow-K (potassium chloride), which reduces mucous irritation and should never be crushed or chewed.

Most extended-release formulations enable the patient to take fewer tablets or capsules each day without any loss of efficacy. Chewing or crushing disrupts the dosage and destroys the extended-release properties, thereby increasing the risk of adverse effects or drug toxicity. These preparations should never be crushed. If the patient has swallowing difficulties a liquid version should be prescribed. There are many common abbreviations for extended-release formulations, including:

- CR – controlled release;
- CRT – controlled-release tablet;
- LA – long acting;
- SR – sustained release;
- TR – time release;
- ID – time delay;
- SA – sustained action;
- XL – extended release.

Any drug with these abbreviations should not be crushed before administration.

Enteric-coated drugs

Enteric-coated preparations delay the action of a drug following administration and prolong drug release, reducing stomach irritation and minimising premature breakdown (Mitchell and Pawlicki, 1992). Crushing or chewing them exposes the stomach to potentially irritant ingredients. NSAIDs and steroids, for example, are known to irritate the stomach lining. Solid-dose forms such as potassium chloride are especially hazardous when crushed, because of their irritant gastrointestinal effects.

Drugs with carcinogenic potential

The crushing, opening or breaking of medicines that have carcinogenic properties may not only alter the delivery mechanism, but can lead to unwanted airborne release of particles, thus exposing the nurse to their cytotoxic activity. An example is tamoxifen, which is routinely prescribed in breast cancer and can be given as a liquid.

Liquid medicines

When patients experience difficulty in swallowing, the use of elixirs, mixtures or solutions may often be a convenient alternative. Some patients may even derive psychological benefit from taking a brightly coloured liquid rather than a white tasteless pill. Specialist liquid medicine manufacturers provide a wide range of liquid alternatives. If a medicine is not listed in the British National Formulary as being available as a liquid, special oral liquid versions of licensed solid formulations can be supplied if needed.

REFERENCES


Legal implications of crushing tablets

Besides the pharmacological aspects of crushing tablets, there are also legal implications. A nurse who administers a medicine outside its product licence takes on a degree of liability for any adverse effects. Crushing tablets or opening capsules not specifically designed for this purpose falls outside the product licence, as does mixing medication with food or drink before administration. It is essential therefore for a nurse who is faced with this situation to minimise her or his personal liability.

The law requires that medicines are given to the right person, at the right time, in the correct form, using the correct dose, via the correct route. Initial statutory protection is given by the Consumer Protection Act 1987, but the main statutory framework for the regulation of medicines is the Medicines Act 1968. This regulates the licensing, supply and administration of medicines. It states that prescription-only medicines may only be administered by or in accordance with the directions of an appropriate practitioner. Nurses must only administer medicines in accordance with the directions given by the prescribing doctor. Unless instructed there is no legal scope for nurses to alter the dose or change the form of a medicine by crushing or opening a capsule and to do so would be a breach of the 1968 Medicines Act.

The act provides further protection for the patient by requiring that medicinal products are used in accordance with a product licence or manufacturing authorisation. It is essential those administering medicines are aware of the licensed uses of the product. A medicine would be used in an unlicensed manner if the dose, route or form were outside the licensed terms. A nurse who decides to administer a medicine by crushing a tablet or opening a capsule would be using the medicine in an unlicensed form. This would render them personally liable for any harm caused and they would be required to justify their actions in the event of an adverse reaction. If medication is crushed to assist a person with swallowing difficulties and they are harmed as a result, then liability in negligence might arise and the person may seek damages for the harm caused.

In considering their ruling the court would consider what other options were available. In a case of tablet crushing the court would consider whether there were alternative products available such as liquid preparations and whether the appropriate practitioner was consulted about the method of administration and gave approval for the crushing.

Nurses should therefore avoid crushing tablets and should always consult the prescriber and the pharmacist. Accurate records should also be kept of any discussions and subsequent actions.

Enteral feeding

There is a growing interest in enteral feeding as a means of delivering medication, particularly to dysphagic patients. Although the newer feeding tubes share the capacity for medication delivery, their use for the administration of drugs may induce intolerance and/or result in less than optimal drug absorption. There are several reasons for this:

- Crushing oral tablets or opening capsules for the purposes of enteral administration may alter bioavailability, resulting in unpredictable serum concentrations or tube occlusion;
- Drugs may bind to the enteral feeding tube, reducing drug absorption.

Crushed tablets can block the enteral tube, so that it will need replacing. Liquid rather than solid medicines should always be administered to patients being fed by the enteral route.

Covert administration of drugs

Concealing medication in food is a widespread practice (Treloar et al, 2000) and an astonishing 90 per cent of health care workers found the practice to be justifiable. However, this practice is outside the product licence and should be avoided.

Conclusion

Many older patients suffer from dysphagia either as a consequence of disease or as part of the ageing process. Therefore when considering the administration of medicine to an older person, it is important to review whether she or he has any degree of dysphagia, which could make swallowing solid-dose medications difficult or even impossible.

Also, nurses should take into consideration the legal and pharmacological considerations of medication administration. It is essential to take great care to keep accurate records of medication given, including methods of administration. If there is any doubt, always seek advice from the prescriber or pharmacist.

Managing an older patient with dysphagia may be challenging, but approached with care it is rewarding for both the nurse and the patient.

Guided reflection

Use the following points to write a reflection for your PREP portfolio:

- Explain how this article is relevant to a patient in your clinical area;
- Highlight the key points the article makes;
- Outline a new piece of information you have learnt;
- Consider how you can use this information in the care of a patient;
- Outline how will you follow up what you have learnt.

References


