Society of Hospital Pharmacists

Don’t rush to crush

Pharmacists have a role in educating patients and other healthcare staff on the dangers of altering solid dosage forms.

"I am struggling to swallow my tablets, is it OK to crush them?"

As pharmacists, we are asked variations on this question frequently. Many patients are elderly, taking multiple medicines. Some are unable to eat normally and have enteral feeding tubes. So, we can expect these questions to continue, from both patients and healthcare staff.

This means pharmacists need to be proactive because many people who alter medicines either don’t seek alternatives or advice—they should be asking how they are managing their medicines.

There are a number of dangers inherent in altering solid dosage forms.

From a medico-legal stance, altering solid dosage forms to administer in a form not intended by the manufacturer is classified as “off label” use, with greater liability falling on front-line practitioners. It is important that solid dosage forms are only altered when this is the only available option, the risk and benefit have been thoroughly assessed and documented, the prescriber is aware, and the patient consents. Altering the dosage form may reduce stability, efficacy and palatability, and increase toxicity. Administering crushed medicine via an enteral tube also risks blockage of the tube. Off label use is not an exercise to be undertaken lightly. So what should we do? Start with treatment review. Liaise with prescribers to minimise current medicines. Consider substitution with more suitable formulations or alternative drugs, taking into account PBS availability and affordability of potential options. Use of liquids, dispersible tablets, rectal or transdermal preparations may avoid the problem.

For the remaining medicines there are a number of issues to consider before altering the dosage form.

First, consider the release characteristics of the formulation. Only immediate release preparations should be crushed. If the solid dosage form is formulated as a sustained release product, designed to release the drug over an extended period of time, crushing it or opening up the capsule and chewing the granules may result in “dose dumping” — a tablet designed to release the drug over a 24-hour period, may release the whole dose over 30 minutes. This has the potential for serious toxicity and indeed deaths have been reported. Of course drug coating is not always about prolonging release, enteric coating is designed to prevent the medicine being released in the stomach. This avoids destruction of the drug by stomach acid, or local adverse effects in the stomach. Crushing therefore results in either reduced efficacy or increased side effects, neither of which are desirable.

Liquids are often suitable for patients with tubes or swallowing difficulty, but may need diluting to aid administration or reduce intolerance due to high osmolality, or thickening in patients at risk of aspiration.

Second, consider side effects. If the drug is irritant, crushing may increase erosion in the mouth or oesophagus. Finally, assess occupational safety.

Altering dosage forms exposes the handler to powdered drug that puts them at increased risk of toxic effects via inhalation and skin exposure. This is particularly a concern with cytotoxic agents, but also other agents such as hormones and antibiotics.

When dispersing or crushing, safe practices for administration should be adhered to. Always use oral dispensers, never syringes intended for parenteral use, due to the risk of administration error. Dispersing, if appropriate, may be preferable to crushing with less occupational safety issues and dosage loss.

Fortunately, there are excellent sources of information available to help us deal with these questions. The first edition of the SHPA’s Don’t Rush to Crush was released in 2008. A second edition is expected shortly, also available in electronic and mobile formats. It is an excellent source of information for medical, nursing and allied health staff on the suitability of Australian medicines for patients with swallowing difficulty or enteral tubes, and gives comprehensive guidance on correct administration procedures.

Pharmacists have a role in educating other healthcare staff on the dangers of altering solid dosage forms and the sources of information available to help manage these issues. Encourage staff and patients to ask for your advice, and consider altering solid dosage forms only when it is absolutely necessary and safe to do so.

"We should be asking how patients are managing their medicines.”

Written by Carol Simmons, medicines information pharmacist, Fremantle Hospital and Health Service, WA

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