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Tablet Splitting

Breaking drug tablets in half is a common practice.\(^1\) Since our last article on this subject, some new data have become available.\(^2\)

**Rationale** — Tablets are sometimes split to achieve an intermediate dose between marketed strengths and, when 2 tablet strengths cost the same, as they often do, splitting the higher strength saves money.

**Dosage Uniformity** — The distribution of active drug in a whole tablet and its potential for crumbling or breaking unevenly are related to drug manufacturing quality assurance standards. In one study, using near-infrared spectroscopic imaging, large clumps of active ingredient were found in simvastatin tablets manufactured in 4 countries by secondary manufacturers, but not in tablets manufactured by Merck in the US.\(^3\)

Another study analyzed the drug content and weight of split tablets of warfarin, simvastatin, metoprolol, citalopram and lisinopril. The drug content of the half-tablets met USP specifications (adapted for half tablets) for 19 of 30 half-tablets for warfarin (95-105% of half the mean value of whole tablets), 27 of 30 for simvastatin, 20 of 30 for metoprolol succinate, 26 of 30 for metoprolol tartrate, 25 of 30 for citalopram and 20 of 30 for lisinopril. (The standard for drugs other than warfarin was 90-110% of half the mean values of the whole tablets.) Falling outside the standard range of drug content was closely correlated with falling outside the acceptable range for weight. Results with scored tablets were better than those for unscored tablets.\(^4\)

**Clinical Outcomes** — A recent review found that the use of split tablets did not seem to affect the clinical outcomes of patients with hypertension, hyperlipidemia or psychiatric disorders.\(^5\)

**Important Variables** — Tablet splitting is not standardized; results vary depending on tablet characteristics and the patient’s visual acuity, strength, dexterity and cognitive ability. With or without score marks, the size, shape and fragility of a tablet can affect the accuracy of cutting it in half. Large, elongated tablets with deep score marks on both sides are the easiest to split. Use of tablet-splitting devices may be helpful. Patients who are able to split tablets themselves should do so one at a time so that under- or overdosing could be compensated for by the next dose.

**Contraindications** — Enteric-coated and un-scored extended-release formulations should not be split. Combination tablets in which the amount of one active ingredient changes from one tablet size to the next, but the amount of the other does not, should not be split; some examples are sitagliptin/simvastatin, linagliptin/metformin, codeine/acetaminophen, azilsartan/chlorthalidone, eprosartan/hydrochlorothiazide and amoxicillin/clavulanic acid. Drugs with a narrow therapeutic index may be the least suitable for splitting.

**Conclusion** — Tablet splitting may not have adverse clinical consequences and can reduce costs for both patients and institutions, but it is not appropriate for all patients or all drugs. Using a whole tablet is the safest way to ensure accurate dosing. When it is appropriate, splitting tablets one at a time can minimize under- or overdosing.
