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TABLET SPLITTING: ONLY IF YOU "HALF" TO by PRP Ingrid

INTRODUCTION

Tablet splitting : where a higher strength tablet is split into half or quarter, has become a common practice in both hospital and community healthcare settings. Currently, FDA approves splitting scored tablets as efficacious and safe, but studies have shown that the halved tablet weights often do not pass the dose content uniformity tests.

Tablets are split for various reasons; among which include:

- **Titration of dose or flexible dosing**: to aid in the titration of appropriate individualized patient dose where the dose is not commercially available or as part of dose optimization strategy.
- **Lower medication cost** : Multiple dosage strengths may have very little difference in cost. Thus tablet splitting can be an effective means of reducing cost while maintaining the desired therapy. Patients who obtained higher strength tablet and split it into half can significantly reduce the cost of medicines. For example, the cost of a month supply of Rosuvastatin (Crestor®) 10mg is RM80.00, while Rosuvastatin (Crestor®) 20mg strength is priced at RM128.80. By splitting the 20mg tablet to get the 10mg dose; patients can save RM52 for a two month supply of Rosuvastatin 10mg.
- **Easy to swallow** : It also aids in the administration of larger tablets that patients may find hard to swallow whole.



FACTORS TO CONSIDER BEFORE SPLITTING TABLET



Patient factors : Good **visual acuity** and **manual dexterity** are necessary for accurate tablet splitting. Therefore, splitting tablets can be a very challenging task especially for the elderly and children. Patients with impaired grip strength will find splitting tablets extremely inconvenient. In addition, some patients can easily confuse with the correct dosage. Some could split the tablet of wrong strength or even wrong medicine. Moreover, tablet splitting may cause non-compliance due to inconvenience of administration.

Drug/Medicine factors : **Dosage uniformity** should be considered when tablets are to be split. Uneven breaking of tablet often results in unequal dosage between fractions and hence causes significant fluctuation in dose administered. This will adversely impact clinical outcomes, especially for **narrow therapeutic index** drugs such as warfarin and digoxin. Hill and colleagues demonstrated in a uniformity test that 23.9% of half tablets tested did not meet the proxy USP specification of drug content. In this study, 22.2% of **scored tablets** also failed the test. Another research cited by Grissinger showed the significant dose variation in split tablets with a 5% to 72% inaccuracy. Thus, drugs with a narrow therapeutic range should only be split if satisfactory clinical response can be produced.

Not all tablet formulations are suitable for splitting. Generally, the following kinds of pills should **not** be split:

- ♦ Chemotherapy drugs
- ♦ Anti-seizure medicines
- ♦ Birth control pills
- ♦ Blood thinners (Coumadin, warfarin)
- ♦ Capsules of any kind that contain powders or gels
- ♦ Pills with a hard outside coating or tablet with taste masking coat
- ♦ Pills designed to release medication over time in your body/ sustained or extended-released tablet
- ♦ Pills that are coated to protect your stomach (enteric coating)
- ♦ Pills that crumble easily, irritate your mouth, taste bitter, or contain strong dyes that could stain your teeth/mouth.
- ♦ Unscored tablet, small size, thick or oddly shaped tablet

However, there are some extended-release products which can be split without compromising the release characteristic of the drugs. For instance, isosorbide mononitrite (Imdur®) can be split into half but the same drug of different brand, Elantan LA® should be swallowed whole. Similarly, Glicazide 60mg (Diamicon MR) can be halved, but NOT the Glicazide 30mg (Diamicon MR). Hence, it is vital to always consult the product information before deciding on splitting the tablets. Caution should also be exercised should **hazardous drug** such as carcinogenic or teratogenic drugs be prescribed as half tablets as individual handling the drug will be exposed to the associated hazard.

Drugs NOT recommended to be split (list is not exhaustive)	Reason
Azathioprine, Busulphan, Hydroxyurea, Letrozole, Methotrexate, Tamoxifen	Hazardous
Carbamazepine, Digoxin, Phenytoin, Sodium Valproate,	Narrow therapeutic window
Alendronate , Diclofenac, Potassium chloride	Irritant
Cefuroxime axetil, Ciprofloxacin, Pseudoephedrine	Bitter tasting
Adalat LA, Slow K, Tegretol retard	Extended release
Sodium valproate (Epilim®), montelukast (Singulair®)	Hygroscopic (melts upon splitting)

Table 1 shows some examples of drug that should not be split.

However, if splitting tablet is inevitable, patients are encouraged to follow these recommendations:

- ◆ Use proper **equipment** eg tablet cutter. Don't split with a knife. Studies show that doing so, too often leads to unequal halves.
- ◆ Pills should only be **split into half** and not into smaller portions, such as thirds or quarters. The easiest pills to split are those that are relatively flat round ones with a scored center, a slightly indented line that runs across the center of the pill.
- ◆ **Don't split** your pills in **advance**. Some pills may deteriorate or are affected when exposed to air, heat, humidity and moisture. Hence, for medications taken on a regular basis, only split your pill on the day you take the first half, and then take the other half on the second day or whenever you are scheduled to take your next dose.

CONCLUSION

The reduction of cost achieved by splitting tablets is noteworthy. However, risk of tablet splitting should be weighed against patient's benefits. It is crucial to recognise the consequences of tablet splitting. Manipulating the way a dosage form is presented might modify its absorption profile, affect its stability, may produce safety issue or unmask the taste of medicine.

Prescribers and pharmacists should make every effort to use commercially available tablets when possible. However, when necessary, tablet splitting should be implemented carefully and appropriately, taking into consideration all factors that can affects clinical and humanistic outcomes. In a nutshell, pharmacists play an important role to ensure that the patient or patient's caregiver :

- ◆ understand the purpose of splitting tablets
- ◆ understand the intended dose and treatment regime and instruction to the take the second half of the tablet for the next dose
- ◆ able to easily and accurately split the tablet and suggest the use of tablet splitter when necessary
- ◆ report any difficulties with splitting the tablets or ingesting the split tablets

References:

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Announcement from Pharmacy Department



e-MASS or **electronic Medical Automation Supply System** was started on **15th May 2012** in PPUKM. This system facilitates the supply of medications and medical devices which are not provided by Government Hospital/Clinic for federal pensioners & eligible dependents. Previously, the eligibility status of pensioners can only be checked by Oratis RX Sdn Bhd or Kedai Farmasi Staffs from Pharmacy Department, but now public/pensioners can check their eligibility status online by going to this link : <http://emass.com.my/csp/emass/ViewEntitlement.csp>. Subsequently, pensioners are required to key in their 14 digits identification number. Those with 'ENTITLED' results are eligible for the e-MASS program.

The screenshot shows the e-MASS eligibility website. At the top, there is a header with the text "MALAYSIA CIVIL SERVICE RETIREMENT SUPPORT" and the NBQS logo. Below the header, there is a login form with the following fields:

- Sila masukkan bilangan anda:
- No Kad Pengenalan: (Tanpa "-" atau "space")
- No Akaun:

There are "Semak" and "Reset" buttons below the form. Below the form, there is a table with the following columns:

No.	Nama	No. Akaun	No. Akaun Tanggungan	No. Kad Pengenalan Baru	No. Kad Pengenalan Lama	Status	Agensi	Kelayakan	Perihal
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