

Dear Clinicians,

How often do you hear this? “Doc, I missed my dose this morning because I was rushing in! That is why my pressure is high.” When confronted with these excuses, avoid clinical inertia and intensify treatment. Here is why.

Well, I do not consider this to be a valid excuse for just one single missed dose in patients taking drugs dosed “once every 24 hours.”

To start with, let us contrast two terms: “dosing interval” and “therapeutic coverage”.

Therapeutic coverage refers to the period of time during which the medicine continues to have significant blood pressure lowering effects. There are 2 commonly prescribed medicines whose recommended dosing interval is “once every 24 hrs,” however, their therapeutic coverage is actually LESS than 24 hours. These medicines are atenolol and hydrochlorothiazide. If a patient should miss a dose of these “culprit” medicines, the elevation in blood pressure from a single missed dose can be expected.

Elevation in blood pressure due to a single missed dose is less likely to happen if you use medicines with a long therapeutic coverage – examples here are amlodipine and chlorthalidone. Amlodipine and chlorthalidone have extended therapeutic coverage that ensures sustained blood pressure lowering effect, even if the patient misses a dose 24 hours after the last consumption. If a patient says they missed only the most recent single dose and their office pressure is high, consider focusing on adherence issues and have the patient return in very short order to re-assess the blood pressure control.

Clonidine is an example of a medication with a narrow window of therapeutic coverage. In this case, missing a single dose of clonidine as little as 8 hours after the last one can lead to a dangerous REBOUND hypertension. To avoid rebound hypertension, consider using a related centrally acting alpha agonist with a long therapeutic coverage. Guanfacine is one such medicine with longer therapeutic coverage, dosed every 24hrs, that can be substituted for clonidine.

This has been a very important discussion because of the implications of the “morning surge” of blood pressure that occurs in a lot of our patients with hypertension. The morning surge describes the rapid elevation of blood pressure in the early morning that is associated with a higher incidence of cardiovascular and cerebrovascular events. The surge is made more extreme by using medications with shorter therapeutic coverage such as clonidine. So, please consider using medications with longer therapeutic coverage, such as amlodipine and chlorthalidone, to avoid elevated blood pressures with missed doses.

We welcome your feedback and look forward to hearing from you – please send us your comments and questions!

If you have specific questions related to hypertension management in your patients, Dr. Williams can be reached by email at Stephen.Williams@nyumc.org or by phone at 646-320-8075 (cell).

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