

## Telmisartan/Hydrochlorothiazide A Viewpoint by Betsy Ripley

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Telmisartan/hydrochlorothiazide is a combination drug with telmisartan, a selective angiotensin II receptor antagonist and hydrochlorothiazide (HCTZ) a thiazide-type diuretic. This combination drug is attractive because of the dual and synergistic mechanism for controlling hypertension. It is approved by the US FDA as a second-line drug for the treatment of hypertension. The pharmacokinetics and dynamics of the combination are similar to monotherapy. The delivery system is notable; it is delivered in blister packs to assure stability of the telmisartan prior to dosing.

In patients with renal insufficiency, stage 3-4 or higher, HCTZ is ineffective as a diuretic and is not recommended. No dosing adjustments are required for telmisartan in renal failure. In hepatic impairment dosage adjustment is suggested. Concomitant administration with digoxin has been associated with increased levels and should be monitored. Telmisartan and HCTZ are both good antihypertensive medications. The combination of telmisartan/HCTZ has significantly better blood pressure (BP) lowering and achievement of control than either monotherapy.

Telmisartan/HCTZ was superior to losartan/HCTZ and equivalent to enalapril/HCTZ. Telmis-

artan has equivalent BP lowering to atenolol, a beta blocker. Although the addition of HCTZ results in a decrease in BP with both, it is significantly better with telmisartan. The side effect profile for telmisartan is excellent. The addition of telmisartan to HCTZ can attenuate the hypokalaemia that can be seen with monotherapy.

The US FDA has deemed this combination as second-line therapy (as it has with other ACE inhibitor or angiotensin II receptor antagonist and diuretic combinations). The new JNC 7 guideline for the treatment of hypertension highlights the utility and necessity of multiple medications. In fact for stage 2 hypertension (those with systolic blood pressure >160mm Hg or diastolic blood pressure >100mm Hg) the initial recommendation is for combination medication from the start, as most patients in this category will require at least two medications for control.

In the US, angiotensin II receptor antagonists like telmisartan have received the compelling indications for first line use in heart failure, diabetes, and chronic kidney disease. Thiazide-type diuretics are strongly encouraged for most hypertensives. Therefore, telmisartan/HCTZ offers the physiologic advantages of blockade of the renin angiotensin axis in addition to diuretic therapy and the combination can improve BP lowering and achievement of control. ▲