DSEN ABSTRACT

How do thiazide diuretics compare to ACE inhibitors and combination antihypertensive products in terms of effectiveness (and cost-effectiveness) for the management of hypertension in non-diabetic patients?

Key Messages

Hypertensive patients using TDs in monotherapy are more likely to discontinue or initiate a new treatment, but those who remain on TD have greater reduction in their blood pressure compared to ACEi and ARB and lower risk of cardiovascular and cerebrovascular outcomes when compared to ACEi and CCB. This later result is more clearly seen in women than in men, in part due to our limited power in males.

Implications

Our results bring evidence from real world population and supports prior findings that TDs are effective in treating hypertension in non-diabetic adults. Considering our results and the low cost of the medication, TDs are the most rational first-line choice in treating hypertension in non-diabetic adults, especially in women.

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What is the issue?

- Pharmacological treatment that controls blood pressure can reduce morbidity and mortality in hypertensive patients; however, gaps remain regarding the best approaches. Thiazide diuretics (TD) are cheaper than other antihypertensive classes and have great potential for saving costs when used first-line hypertension.

What was the aim of the study?

- This study aimed to compare TD with other antihypertensive, including angiotensin-converting enzyme (ACE) inhibitors, used as monotherapy for hypertension in non-diabetic patients.

How was the study conducted?

- CAN-AIM conducted one cross-sectional analysis with data from a Canadian population-based study and two longitudinal analyses from international databases.
- CAN-AIM investigators conducted comprehensive comparison between TD and three other classes of antihypertensive (ACE inhibitors, angiotensin receptor blocker [ARB], and calcium-channel blockers [CCB]) in terms of peripheral and central blood pressure measurements, therapy persistence, and clinical outcomes (cardiovascular and cerebrovascular fatal and non-fatal events).

What did the study find?

- Most patients who started with monotherapy treatment for hypertension do not stay long on the monotherapy regimen. Patients starting on TD were more likely to discontinue or add a new antihypertensive medication compared with initiators of ACEi or ARB.
- Patients using TDs were similar to non-TD users in terms of central blood pressure measurements. Over a 12-month period, the use of TDs was associated with a clinical significant reduction of systolic blood pressure when compared to ACEi and ARBs (8.3 mmHg reduction in the TD group compared to 6.3 and 2.6 in the ACEi and ARB groups, respectively).
- TD users exhibited a lower risk of cardiovascular and cerebrovascular events compared with ACEi and CCB users; patients using ACEi were 69% more likely to have these events when compared to TD users (among CCB users the risk was 74% higher). This association was clearer in women than in men.

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Link to publications: Machado et al, 2017; Moura et al, 2015.