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Diuretic Fake News

Diuretic prescribing is often driven by renal function. For example, hydrochlorothiazide (HCTZ) and chlorthalidone (thiazide diuretics), are avoided in residents with chronic kidney disease (CKD).

First, a little physiology… Thiazides work by inhibiting Na reabsorption in the distal convoluted tubules of the kidney's nephrons. The Na pulls water creating a diuresis. This diuretic effect is not as pronounced as that of loop diuretics like furosemide. Loop diuretics work in multiple locations of the nephron, including the solute dense Loop of Henle. They exhibit a powerful diuretic action, even in the presence of renal impairment. Since thiazides work in the latter portion of the tubules and with less vigor, they are thought to be ineffective, and potentially dangerous, when used in severe CKD.

Like so many certainties in the drug world, it seems we had this one wrong. A new study, Chlorthalidone in Chronic Kidney Disease, *CLICK*, calls these assumptions into question. *CLICK*, published in *NEJM*, randomized 160 subjects in stage 4 CKD (GFR 15–29 ml/min) to receive placebo or chlorthalidone (starting dose 12.5mg daily). Dose increases every 4 weeks, up to 50mg per day, were allowed, if needed.

Despite their poor renal function, chlorthalidone users saw their systolic BP drop by 10 mmHg overall. Even more impressive was the 50% reduction in urinary albumin creatinine ratio. Rather than harming kidneys, chlorthalidone protected them! These improvements were shocking, especially since the subjects had treatment resistant hypertension, each taking an average of 3.4 BP meds each day before study initiation.

As *ALLHAT* showed 20 years ago, chlorthalidone is a first line treatment for hypertension. It compares well with ACE inhibitors (lisinopril) and calcium channel blockers (amlodipine) in preventing CV events such as stroke and heart failure. It has an excellent side-effect profile. Hypokalemia can be a concern relative to the other *ALLHAT* drugs, and HCTZ, but monitoring can easily detect this. With its safety and benefits to renal function, its time to show chlorthalidone some love in treating HTN, even in residents with compromised kidneys.

ISMP Prescriber Request

Earlier this month, I received a message from my contacts at ISMP. Dr. Michael Hamilton, the Medical Director at ISMP Canada, and a LTC physician, asked me to make a request of our LTC prescribers. The folks at ISMP would appreciate it if you completed this survey: https://www.surveymonkey.com/r/YYDDCCM,

The 10-minute survey seeks to determine the level of prescriber involvement in ISMP's Medication Safety project via programs such as the Medication Safety Self-Assessment (MSSA). Of course, nobody has time to complete surveys, but Dr. Hamilton explains the direct benefit to prescribers.

1) A collective response will provide strategies that can be presented directly to the Ministry. 2) Medication errors can impact your residents and you have an opportunity to improve processes in your home. 3) Understanding what's behind recurrent issues in house will help you fix them. 4) Medication errors are a major reason why you get called off hours - would you like to help reduce the number of errors and both improve the care of your residents and reduce your calls?

Please take a few minutes to complete the survey. You will help ISMP and help yourself in the process.

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