

Potential Drug-Nutrient Interactions Involving Blood-Pressure Medications

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According to the American Heart Association, 76.4 million or approximately 33.5 percent of U.S. adults have high blood pressure.¹ **High blood pressure** (hypertension) is defined by multiple readings of 140/90 mmHg, whereas normal blood pressure is defined as less than 120/80 mmHg. The range of 120-139 / 80-89 mmHg is defined as "prehypertension." As blood pressure is dynamic, a single high reading does not constitute a diagnosis and or need for management of hypertension; however, when hypertension is diagnosed, antihypertensive drugs are often prescribed.

There are many classes of antihypertensive drugs used to lower blood pressure by different means, but among the most widely used are thiazide diuretics, ACE inhibitors, calcium channel blockers and beta blockers. These medications are obviously intended to improve the patient's blood pressure, but we all know that medications have negative **side effects** as well. Did you know that many medications can benefit from the addition of specific nutritional supplements to both reduce the side effects of the drug and/or improve the drug's overall action?

Diuretics

Let's take a look at diuretics, a family of drugs that promote urination to reduce the accumulation of water. This reduction of water can lead to a decrease in overall vascular pressure, resulting in a reduction in blood pressure. Diuretics are among the most commonly prescribed antihypertensive drugs and generally fall under three different categories based on how they function physiologically. These categories are 1) thiazide diuretics; 2) loop diuretics; and 3) potassium-sparing diuretics.

One of the most commonly prescribed diuretics is hydrochlorothiazide (abbreviated as HCTZ). HCTZ was the 10th most common drug prescribed in the U.S. during 2010, with over 47.8 million prescriptions. It is important to remember that the purpose of this article is not to call into question the effectiveness of HCTZ, but rather to highlight the fact that this medication is very commonly prescribed and carries various biochemical side effects that may be augmented by the addition of specific nutritional supplements:

- *Co-enzyme Q₁₀* synthesis is impaired by HCTZ. The drug reduces the production of **CoQ₁₀**, which is an important enzyme in energy production.² Supplementation with CoQ₁₀ may be recommended for patients taking HCTZ to help restore the enzyme depletion caused by this drug and to help the patient combat decreased energy levels.
- *Magnesium* is a vital mineral in soft-tissue recovery and thus is recommended by many chiropractors to their patients. But did you know that **magnesium** deficiency might occur as a result of thiazide diuretic use?³⁻⁵ For this reason, it may be helpful to recommend Mg supplementation to your patients who are taking HCTZ (or any other thiazide diuretic, for that matter).

ACE Inhibitors

ACE (angiotensin-converting enzyme) inhibitors are commonly prescribed antihypertensive drugs that function to decrease blood pressure by the renin-angiotensin-aldosterone system (RAAS). ACE inhibitors block the conversion of angiotensin I to angiotensin II, which ultimately reduces blood pressure. A commonly prescribed ACE inhibitor is lisinopril. In fact, lisinopril was the third most commonly prescribed drug in 2010, with over 87.4 million prescriptions written. Again, this medication is very commonly prescribed and carries various biochemical side effects that may be augmented by the addition of a specific nutritional supplement:

- *Iron* - An interesting finding associated with the usage of lisinopril is that many patients may develop a dry cough as a side effect of this drug. Research has shown that the addition of iron may help to alleviate this side effect.⁶ *Note:* It is important to recognize that iron supplements and ACE inhibitors should be taken at different times of day (2-3 hours apart), as iron may interfere with the medication's absorption.

The findings above are not inclusive of the potential drug-nutrient interactions involving antihypertensive drugs; they are a sample of the information that has been researched. As a chiropractor, it is important to analyze all of the medications and nutritional supplements your patients consume for possible beneficial and negative interactions.

References

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