SOUTHWESTERN NEWS

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Cardiovascular patients taking certain medications need close monitoring to guard against dangerously high potassium levels, advises UT Southwestern nephrologist

DALLAS – Aug. 5, 2004 – Some patients with hypertension or other cardiovascular diseases should be closely monitored in order to maintain safe potassium levels in the body when prescribed certain medications, counsels a nephrologist at UT Southwestern Medical Center at Dallas.

Angiotensin-converting-enzyme (ACE) inhibitors and angiotensin-receptor blockers are commonly used to treat hypertension and decrease cardiovascular problems in high-risk patients. A side effect to these therapeutics is hyperkalemia, or higher than normal levels of potassium in the bloodstream.

"Because a third to half of patients with congestive heart failure have kidney complications, a large proportion of patients being treated with ACE inhibitors and angiotensin-receptor blockers are at increased risk for hyperkalemia," said Dr. Biff Palmer, professor of internal medicine at UT Southwestern, in a review article in today's issue of *The New England Journal of Medicine.*

The balance of potassium between cells and the blood is critical. Potassium affects the way cell membranes work and governs the action of the heart and pathways between the brain and muscles. The development of hyperkalemia is a potentially life-threatening complication because it can disrupt the heart's normal rhythm.

Potassium is primarily excreted by the kidneys. However, the levels can become elevated if the kidneys are not functioning properly or if damaged cells release potassium into the bloodstream faster than the kidneys can remove it.

Hyperkalemia has been linked to the use of ACE inhibitors in 10 percent to 38 percent of hospitalized patients with hypertension or other cardiovascular diseases, and it develops in about 10 percent of outpatients within a year of these drugs being prescribed. Patients at greatest risk include those with diabetes and those with impaired kidney function who may already have complications in excreting potassium.

Dr. Palmer said it is important for physicians to identify patients at risk for hyperkalemia and

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implement corresponding measures when using these drugs.

"The patient's medication profile should be reviewed and drugs discontinued that impair excretion of potassium in the kidney, such as over-the-counter non-steroidal anti-inflammatory drugs like ibuprofen and naproxen," he said. "Patients should be asked about the use of herbal remedies, as herbs can be a hidden source of potassium."

Also, a low-potassium diet – avoiding orange juice, melons, bananas and salt substitutes with potassium – should be prescribed. If treatment with an ACE inhibitor or an angiotensin-receptor blocker is needed, it is best to begin with low doses, Dr. Palmer said. Implementing these measures will allow patients at increased risk for hyperkalemia to enjoy the cardiovascular benefits of these drugs rather than unnecessarily being labeled intolerant as a result of the disorder.

The review article, intended as a guide for physicians, accompanies a study by researchers from the University of Toronto and the Institute for Clinical Evaluative Sciences in Toronto. The study documents a multifold increase in the incidence of hyperkalemia in congestive heart patients following the publication of a trial in 1999 that reported use of an aldosterone-receptor blocker and an ACE inhibitor together reduces death rates in such patients.

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