Elderly can blame fractures and falls on low sodium

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Older adults with even mildly decreased levels of sodium in the blood (hyponatremia) experience increased rates of fractures and falls, according to a study presented at the American Society of Nephrology's 43rd Annual Meeting and Scientific Exposition. Falls are a serious health problem for the elderly and account for about 50 percent of deaths due to injury in the elderly.

"Screening for a low sodium concentration in the blood, and treating it when present, may be a new strategy to prevent fractures," comments Ewout J. Hoorn, MD, PhD (Erasmus Medical Center, Rotterdam, the Netherlands). However, hyponatremia does not appear to affect the risk of osteoporosis, as defined by low bone mineral testing, so more research is needed to understand the link between sodium levels and fracture risk.

The study included more than 5,200 Dutch adults over age 55, all with initial information on sodium levels and six-year follow-up data on fractures and falls. "A number of recent studies suggested a relationship between hyponatremia, falls, osteoporosis, and fractures," Hoorn explains. The authors' goal was to confirm these possible associations using prospective, long-term follow-up data.

About eight percent of the study participants, all community dwelling adults, had hyponatremia. This group of older participants had a higher rate of diabetes and was more likely to use diuretics (water pills) than those with normal sodium levels. Subjects with hyponatremia had a

higher rate of falls during follow-up: 24 versus 16 percent. However, there was no difference in bone mineral density between groups, so hyponatremia was not related to underlying osteoporosis.

Nevertheless, the group with low sodium levels had a higher rate of fractures. With adjustment for other risk factors, the risk of vertebral / vertebral compression fractures was 61 percent higher in the older adults with hyponatremia. The risk of non-spinal fractures, such as hip fractures, was also significantly increased: a 39 percent difference.

The relationship between hyponatremia and fracture risk was independent of the increased rate of falls in the low-sodium group. Subjects with hyponatremia also had a 21 percent increase in the risk of death during follow-up.

Hyponatremia is the most common electrolyte disorder, usually developing because the kidneys retain too much water. "Although the complications of hyponatremia are well-recognized in hospitalized patients, this is one of the first studies to show that mild hyponatremia also has important complications in the general population," says Hoorn.

Further study will be needed to clarify the mechanism by which low sodium levels increase fracture risk. In the meantime, "Screening older adults for and treatment of hyponatremia in older adults may be an important new strategy to prevent fractures," adds Hoorn.

Provided by American Society of Nephrology