



Clinical Digest

ONLINE EDITION

CARDIOVASCULAR DISEASE

Calcium, Phosphate, and Heart Risk

High serum calcium and phosphate levels are known to be associated with increased rates of cardiovascular disease in patients who have advanced chronic kidney disease. But is the same association present in patients with normal or near-normal kidney function?

To find out, researchers from the United States Renal Data System and the University of Minnesota, both in Minneapolis, MN, and Hope Hospital, Salford, United Kingdom looked at data from the Atherosclerosis Risk in Communities (ARIC) Study. This epidemiologic study of cardiovascular disease had a baseline sample of 15,732 community-dwelling adult participants who were examined between 1987 and 1989 and followed up at three-year intervals until December 31, 2001. The researchers looked for associations between participants' levels of serum calcium, serum phosphate, and calcium-phosphate product and the outcomes of coronary heart disease (CHD), stroke, and death.

Data on the participants' serum calcium indicated that each interval corresponding to 1 standard deviation of the population distribution was associated with stroke and death but not with CHD. (The mean [SD] calcium value was 9.8 [0.4] mg/dL.) With regard to phosphate, researchers found that low levels were associated with CHD and high levels with death. And data on calcium-phosphate product showed that low levels were asso-

ciated with CHD and high levels with stroke and death.

The researchers also analyzed the data using outcome models that adjusted for age, demographic characteristics, comorbid conditions, albumin levels, and glomerular filtration rate. This analysis showed that calcium was associated with stroke and that phosphate levels and calcium-phosphate products both were associated with stroke and death.

Overall, the researchers conclude, calcium, phosphate, and calcium-phosphate product levels "may be potentially modifiable risk factors for stroke and death in community-dwelling adults."

Source: *Am Heart J.* 2008;156(3):556-563.
doi:10.1016/j.ahj.2008.05.016.

EMERGENCY MEDICINE

Stroke Management in Elderly Patients

Researchers from Université Pierre et Marie Curie, Paris, France appear to have found some good news and some bad news about older patients who present to the emergency department (ED) with stroke. Although being aged 75 or older may not be an independent positive predictor of one-year mortality for these patients, the researchers found it could make them less likely to receive magnetic resonance imaging (MRI) and immediate referrals to stroke units.

The researchers set out to determine how older age affects stroke prognosis and management by performing a retrospective study on 206 consecutive patients who presented with stroke

to the ED of an urban teaching hospital. After dividing the patients into a younger-than-75 group of 101 patients and an older group of 105 patients, they looked at a number of prognosis and management factors.

The prognosis data indicated that while hemorrhagic stroke, dementia, and a high Rankin score all were independent positive predictors of one-year mortality, age was not. With regard to stroke management, however, the researchers found that only 6% of patients in the older group were given MRI, compared with 27% of patients in the younger group. Similarly, they found that 6% of the older patients were referred immediately to a stroke unit, compared with 28% of the younger patients. There were no significant differences between the age groups in terms of treatment or use of computed tomography (CT).

The study's prognosis data "highlight the weight of comorbidities compared to age in elderly patients and the need to evaluate and to consider stroke severity more than age," say the researchers. They note that the reasons for the apparent age-related differences in stroke management are unclear, although such factors as ageism or reluctance to admit older patients into the stroke unit because of their hemorrhagic risk with thrombolytic therapy might be involved. In light of previous findings that older patients were less likely than younger patients to receive CT scans and antithrombotic therapy, the researchers say, their findings of similar CT scan rates and treatment results for the two age groups show "important progress."

Source: *Am J Emerg Med.* 2008;26(7):742-749.
doi:10.1016/j.ajem.2007.10.023.