

GERIATRICS

Homocysteine Levels, PD, and Fracture Risk

Plasma homocysteine concentrations may help identify hip fracture risk in elderly women with Parkinson disease (PD), according to researchers from Mitate Hospital, Tagawa, Keio University School of Medicine, Tokyo, and Hirosaki University School of Medicine, Hirosaki, all in Japan. In their study of 199 women who were taking levodopa to treat PD, they found patients with the highest levels of homocysteine (range, 21 to 29.8 $\mu\text{mol/L}$) had more than twice the risk of hip fracture than those with lower levels (range, 6.1 to 20.9 $\mu\text{mol/L}$).

The association appeared to be independent of age and other hip fracture risk factors, such as body mass index and recent falls. Because the women in the highest of four quartiles of homocysteine level also were those who'd been taking levodopa the longest, the researchers suspect drug involvement. Indeed, several studies have found levodopa-induced hyperhomocysteinemia in patients with PD.

The researchers cite the results of a 2004 study in which it was found that elderly women (without PD) in the highest quartile of homocysteine levels had a hip fracture risk that was 1.9 times greater than those in the lowest quartile. Based on the fact that their own study revealed a hip fracture risk that was 2.4 times greater, the researchers suggest that plasma homocysteine levels have more of an influence on bone fragility in women who have PD than in women who don't.

After adjusting for age, homocysteine levels were not associated with bone mineral density—similar to find-

ings from previous studies. Although the researchers say there is only limited biological evidence that homocysteine has a direct effect on bone, it has been shown to interfere specifically with the formation of collagen cross-links. And, as these are important for the stability and strength of collagen networks, the interference may contribute to bone fragility. Further, low levels of collagen cross-linking have been found in serum from patients with homocystinuria.

Nutritional factors also are a part of the problem, the researchers point out. The women with the highest levels of homocysteine also tended to have a high incidence of vitamin D deficiency. The effect of homocysteine also may reflect lack of vitamins B₆ and B₁₂ and folate. In any case, the researchers suggest vitamin supplements are a good place to start prevention efforts.

Source: *Am J Med.* 2005;118:1250-1255.

ONCOLOGY

Cancer's Long-Term Effects

People who survive childhood cancer may have sequelae long after they've grown up, according to a collaborative study, coordinated at the University of Minnesota, Minneapolis and involving 26 institutions that treat childhood cancer. Of 11,481 survivors of cancer (who were diagnosed before the age of 21 and between 1970 and 1986) and 3,839 of their siblings, survivors were more likely to report that their health prevented them from engaging in such activities as walking; climbing a flight of stairs; playing sports; or even eating, bathing, and dressing.

Although all cancer survivors had a high risk of functional loss, those

who'd had brain cancer were at the greatest risk. When compared with their siblings, they were 17, 15, and 16 times more likely to report that they were restricted in performing personal care skills or routine activities and were prevented from participating in school or work.

Nearly half (42.6%) of the survivors reported late neurologic symptoms. Prolonged pain or an abnormal sensation in the trunk or extremities was the most common impairment mentioned (31% of survivors, compared to 14% of siblings). The survivors also reported hypothyroidism (11%), chest pain with exertion (10%), weakness in the arms or legs (9%), and chronic cough (7%). In fact, cancer survivors were nearly seven times more likely to report any endocrine problem and nearly nine times more likely to have musculoskeletal problems.

Treatment type also made a difference. Survivors who had received radiation or chemotherapy plus radiation were more likely to report limitations than those who'd only been treated surgically.

Each cancer type has its own long-term health risks as well, the researchers say. For example, survivors of Hodgkin lymphoma are more likely to suffer from impairments of the cardiac or pulmonary system. In addition, neuroblastoma survivors, treated in an era of radical surgery and aggressive chemotherapy, are prone to such complications as neurogenic bladder and paresthesias.

To combat these late effects, the researchers advise monitoring patients for functional loss and referring them for necessary rehabilitation throughout their lives. ●

Source: *Ann Intern Med.* 2005;143:639-647.