By Stuart Schrader

Long-term Vigorous Recreational Exercise Lowers Risk of Breast Cancer

Strenuous recreational exercise over many years appears to have a protective effect against breast cancer. Dr. Leslie Bernstein and colleagues published the results of a study of 110,599 women examining the relationship between vigorous physical recreation and breast cancer in the February 26 issue of *Archives of Internal Medicine*. The women were between ages 20 and 79 and had no history of cancer at baseline in 1995. By the end of 2002, invasive breast cancer had been diagnosed in 2,649 women and in situ breast cancer in 593. Subjects reported their participation in moderate (eg, brisk walking, golf) and strenuous exercise (eg, swimming laps, running/jogging) as well as the amount of time spent participating in these activities. Subjects' other risk factors were also assessed. Analysis adjusted for other risk factors revealed that the risk of invasive carcinoma was reduced among those who participated in strenuous activity for more than 5 hours per week, as compared to those who participated in such activity for less than 30 minutes per week (relative risk [RR], 0.80; *P* for trend =.02). Similar results were seen for in situ breast cancer (RR, 0.69; *P*=.04). It was suggested that the biologic mechanisms responsible for the beneficial effect seen are physical activity's effect on endogenous hormones, metabolism, and immune function. Both strenuous and moderate long-term activity were associated with reduced risk of estrogen receptor–negative tumors, but no amount of activity affected the risk of estrogen receptor–positive tumors. Dr. Bernstein said, "Exercise has many health benefits; however, from my series of studies it seems that it works best in reducing breast cancer risk if started in adolescence and maintained throughout life. Nevertheless, I would still say it is never too late to start being physically active."

Initial Results Show Rituximab by Intraventricular Administration Safe in NHL

The first phase I study of the intraventricular use of a naked monoclonal antibody, in this case rituximab (Rituxan, Genentech/Biogen Idec), found such administration to be worthy of further study. The results were published in the April 10 issue of the *Journal of Clinical Oncology*. Ten patients with recurrent central nervous system (CNS) and intraocular non-Hodgkin lymphoma (NHL) received intrathecal rituximab monotherapy on a dose-escalation basis. Doses ranged from 10 mg to 50 mg and the maximum tolerated dose was found to be 25 mg. The rationale for this study was based on earlier research showing that intravenous administration of rituximab is associated with limited penetration into the leptomeningeal space; additionally, systemic administration of rituximab is not associated with a decreased risk of CNS relapse or dissemination in patients who have large-cell lymphomas. Rapid craniospinal axis distribution was observed in all patients. Six patients had a cytologic response, and 4 patients had a complete response. Improved intraocular NHL was seen in 2 patients, and 1 patient experienced resolution of parenchymal NHL. The researchers pointed to the growing body of evidence suggesting that rituximab "may sensitize malignant or autoimmune B cells to apoptosis induced by genotoxic therapy," which indicates that further investigation of intraventricular administration of the drug in combination with methotrexate for recurrent CNS lymphomas is warranted.

Helicobacter pylori Infection Linked to Gastric Cancer

Results of a prospective study published in the April issue of the *American Journal of Gastroenterology* show that gastric adenocarcinoma and gastric lymphoma developed only in patients who were infected with *Helicobacter pylori*, leading to the conclusion that such infection is a causative prerequisite of most gastric cancers (the second leading cause of cancer death worldwide). A total of 1,225 dyspeptic patients in Taiwan were followed for a mean of 6.3 years. Of these patients, 618 (50.4%) were infected with *H. pylori* and 607 (49.6%) were not. Endoscopy was performed at enrollment and at 1- to 3-year intervals subsequently. Gastric adenocarcinoma was found in 7 of the patients infected with *H. pylori* and gastric lymphoma was found in 1 infected patient. Zero patients who were not infected developed either malignancy. The combined rate of gastric malignancy was significantly higher in infected patients (1.3% vs 0.0%; *P*=.007). Eradication of *H. pylori* was achieved in 283 patients; 5 patients whose disease was eradicated and 2 whose disease was not eradicated developed gastric adenocarcinoma (the difference was nonsignificant). The only independent factor predicting subsequent development of a gastric malignancy was intestinal metaplasia (odds ratio 4.5). Thus, careful monitoring of *H. pylori*–infected patients with intestinal metaplasia for development of gastric malignancy is recommended.