

RESEARCH HIGHLIGHTS

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Clinical Research

Chemotherapy May Improve Outcomes for Patients With Resected Non-Small Cell Lung Tumors

The results of the randomized International Adjuvant Lung Cancer Trial were presented by researchers from the Institut Gustave Roussy in Villejuif, France. In this study, 1,867 patients from 148 centers in 33 countries were randomized into two treatment arms: cisplatin-based chemotherapy or no chemotherapy. All patients had complete resection of non-small cell lung carcinomas. A total of 935 patients were allocated to the treatment arm, and 67% received at least 300 mg/m² of cisplatin. The drug was combined with etoposide and a vinca alkaloid. The other 932 patients in the control arm did not receive chemotherapy. A significant difference existed between the study arms in the two- and five-year survival rates (70% and 45% in the chemotherapy arm versus 67% and 40% in the control arm; $R^2 = 0.86$, confidence interval = 0.76–0.98, $p < 0.03$). The study arms also differed in the two- and five-year disease-free survival (61% and 39% in the chemotherapy arm versus 55% and 34% in the control arm; $R^2 = 0.83$, confidence interval = 0.74–0.94, $p < 0.003$). Toxicities occurred in the chemotherapy arm, including at least one grade IV toxicity (23%), mainly neutropenia (18%); seven patients (0.8%) died from chemotherapy-related toxicity. The researchers concluded that this study supports the use of adjuvant chemotherapy for patients with resected non-small cell lung carcinomas.

Pemetrexed May Be Effective for Patients With Non-Small Cell Lung Carcinoma

Researchers from Indiana University presented the results of a multicenter, phase III trial of pemetrexed versus docetaxel for patients with recurrent non-small cell lung cancer. Pemetrexed is an inhibitor of folic acid synthesis. Folic acid is essential for cell growth, and pemetrexed interferes with the

activity of three enzymes necessary for cell division. A total of 571 patients who had been treated previously with chemotherapy were randomized into one of two treatment groups: pemetrexed 500 mg/m² IV supplemented with vitamin B₁₂ injections, folic acid, and dexamethasone, or docetaxel 75 mg/m² IV with dexamethasone on day one of 21-day cycles. Ten months after the final patient entered the study, 52% (299 patients) had died. Toxicities included neutropenia (40%), neutropenia fever (7%), anemia (6%), fatigue (5%), anorexia (2%), nausea (2%), thrombocytopenia (2%), diarrhea (1%), neuropathy (1%), and hypersensitivity ($< 1\%$). For all patients, 43% had stable disease. Partial or complete remission occurred in 9% of patients taking pemetrexed and 9% of patients taking docetaxel. Patients taking pemetrexed were less likely to experience severe chemotherapy-related side effects such as fever and infections, be hospitalized because of side effects, or experience hair loss or peripheral neuropathy. The researchers concluded that because of the reduction in side effects, pemetrexed might replace docetaxel for recurrent non-small cell lung cancer.

Epidemiologic Research

Survey Indicates Need for Cancer Prevention Education

A survey conducted by the American Society of Clinical Oncology and the Cancer Research and Prevention Foundation indicated that the public might be confused regarding what steps are necessary for cancer prevention. The purpose of the Cancer Prevention Survey was to assess attitudes and perceptions about cancer prevention. Telephone interviews of a random sample of adults aged 18 and older ($n = 1,000$) were conducted in April and May 2003. Primary care physicians ($n = 150$) also were surveyed regarding cancer prevention attitudes and practices. The results showed that 88% of the respondents believed that they could take actions to reduce their risk for developing cancer; however, their understanding of specific actions to take varied. For example, only 38% thought that eating fresh fruits and vegetables could lower their risk and only 33% believed that maintaining a healthy weight would be effective. Scientific evidence does show that diets that include fresh vegetables and fruits and reduced animal fat or calories are associated with reduced risk of developing

some cancers. Maintaining a healthy weight appears to reduce the risk of colon, pancreatic, breast, and other cancers. Slightly more than half of the respondents agreed that cancer risk could be reduced by exercise. Because of the importance of weight control, current recommendations for a healthy lifestyle and cancer risk reduction include at least 30 minutes of exercise per day five or more days per week. Although scientific evidence does not support the use of herbal supplements to reduce cancer risk, nearly 30% of the respondents strongly agreed that taking vitamins or herbal supplements would be effective. The Cancer Prevention Survey also found some disparity between the information that physicians believe they are providing concerning preventive cancer risk behaviors and the information that patients report receiving. Physicians reported counseling 75% of their patients regarding cancer risk; however, only 45% of the respondents reported that a healthcare professional had spoken to them about cancer prevention. These survey results indicate that much work must be done to dispel myths regarding cancer risks and prevention behaviors and to consistently provide accurate information to help patients choose healthier lifestyles.

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Basic Research

New Antiangiogenesis Therapy Shrinks Liver Tumors in Mice

The Tie2 receptor protein in endothelial cells regulates the cellular response to vascular endothelial growth factor (VEGF) that is secreted by malignant cells to grow and maintain blood vessels. Angiopoietin 2 binds to the Tie2 receptor, resulting in the signal for blood vessels to grow. Blocking the Tie2 receptor could limit tumor growth. Researchers from Duke University developed mouse colon cancer cells that secreted

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