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Model Predicts Follicular Lymphoma Survival

National Cancer Institute (NCI) researchers have developed a model to predict survival of patients with follicular lymphoma based on the genetic "signatures" of their tumors at diagnosis. According to the model, the activity of two sets of genes—termed "survival-associated signatures" by lead researcher Dr. Louis Staudt and colleagues—was associated with either more aggressive forms of the cancer and shorter survival times, or slower moving forms of the cancer and longer survival times.

The findings, published in the Nov. 18 *New England Journal of Medicine*, could have implications for treatment of follicular lymphoma. Survival among follicular lymphoma patients varies dramatically, explains Dr. Staudt, a principal investigator in the NCI Center for Cancer Research Metabolism Branch. "Understanding the molecular causes of such differences in survival could provide a more accurate method to determine patient risk," Dr. Staudt says, "that could be used to guide treatment and may suggest new therapeutic approaches."

To perform gene expression profiles for this study, researchers used DNA microarray analysis, a method for quickly scanning thousands of genes

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Director's Update

Achieving Success and Addressing Challenges in Tobacco Control

In the landmark 1964 U.S. Surgeon General's report on smoking and health, then-Surgeon General Dr. Luther L. Terry called for "appropriate remedial action" to combat smoking and its detrimental effects. Over the last few weeks, we have seen the cancer community's continued dedication to combating the smoking scourge, and witnessed the impact it has had. As reported in last week's *Bulletin*, there is now a new, single access number to the existing network of tobacco quitline services, 1-800-QUITNOW. The launch of this centralized quitline—and related Web site, www.smokefree.gov—is an integral component of our nationwide effort to help tobacco users end their deadly habit. And last Thursday brought us the 28th annual Great American Smokeout, the excellent campaign spearheaded by the American Cancer Society. Last year approximately 20 percent of current smokers participated in this 1-day event—a clear indication that there is a sincere desire among many tobacco users to quit.

"We have seen the cancer community's dedication to combating smoking."

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for activity in a tumor sample. The researchers used the Lymphochip—a glass chip with DNA "spots" on it from approximately 18,500 genes expressed in lymph tissue—created in Dr. Staudt's laboratory to study lymphoid cancers.

Researchers analyzed follicular lymphoma biopsies of 191 patients before treatment; biopsies came from institutions participating in the NCI-sponsored Lymphoma/Leukemia Molecular Profiling Project. After biopsy, all patients received standard treatments; subsequent medical records were examined to determine survival. The Lymphochip was used to determine which genes were active in the first group of 95 tumor biopsies (the "training set") and at what levels; researchers then determined which of these genes were statistically associated with survival. Next, researchers identified subsets of good- and bad-prognosis genes that tended to be expressed together; these subsets constituted the survival-associated signatures. In the remaining 96 samples (the "test set"), two signatures—indicating poor and good prognosis—had strong synergy and together predicted survival better than any other model tested. Unexpectedly, both came from nonmalignant immune cells that infiltrate the tumors.

Based on the two-signature model, the NCI team divided patients into four equal groups with average survival rates of 3.9, 10.8, 11.1, and 13.6 years. For the 75 percent of patients with survival rates of 10 years or longer, "watchful waiting is appropriate," Dr. Staudt says. "On the other hand, those patients in the group with the lowest survival rate should be considered for newer treatments and clinical trials."

That the most predictive signatures came from immune cells suggests an important interplay between the host immune system and malignant cells in follicular lymphoma. "One possibility is that immune cells with the good-prognosis signature are attacking the lymphoma and keeping it in check," he suggests. "Alternately, these immune cells may provide signals that encourage the cancer cells not to leave the lymph node, preventing or delaying the spread of the cancer."

In 2002, Dr. Staudt's group published a study on a similar model identifying a single 17-gene signature that predicted patient survival for diffuse large B-cell lymphoma (DLBCL). This model will be used in a phase III trial testing the current standard of care for untreated DLBCL against a new regimen. Patient biopsies will undergo gene expression profiling to determine what tumor features influence patient response to the therapies. ◆

(Director's Update continued from page 1)
The success that state comprehensive tobacco control programs can have appeared in the November 12, *Morbidity and Mortality Weekly Report*. An NCI-funded study revealed that in 2003, the prevalence of cigarette smoking among adults in Utah was 12 percent or less—this is the first time any state has reached the *Healthy People 2010* health objective for smoking prevalence. The report warned, however, that a number of states continue to struggle in this area, with a median smoking prevalence in all 50 states of approximately 22 percent.

As the Centers for Disease Control and Prevention continue to provide support for state tobacco control programs, NCI-funded investigators collaborate with local program leaders to test program components and develop new strategies. For example, NCI is supporting a randomized trial testing existing smoking prevention programs in 36 school districts in Oregon. Results should provide real-world evidence for the effectiveness of combined school- and community-based tobacco interventions, and factors that influence their success.

The NCI Tobacco Control Research Branch (TCRB), part of the Division of Cancer Control and Population Sciences, continues to lead NCI's investment in tobacco control. A flagship of TCRB's efforts is the Transdisciplinary Tobacco Use Research Centers (TTURC) initiative. Launched in 1999, the centers are at the forefront of advancing tobacco control research, pushing it in new and novel directions. Earlier this year, researchers at the University of Pennsylvania TTURC published the first study linking specific genes and psychosocial factors to whether teen smokers progress to become adult smokers. At the Roswell Park Cancer Institute TTURC, investigators are examining the impact of national tobacco control policies around the world.

We continue to be proactive in addressing emerging research needs. NCI is one of the primary funders of a program announcement (PA) intended to stimulate multidisciplinary research on so-called reduced-exposure tobacco products. There is a severe lack of scientific evidence on whether these modified tobacco products do, in fact, reduce users' exposures to toxins in tobacco smoke or their risk for tobacco-related diseases. This PA is a proactive effort to understand the impact of tobacco products on smokers' behavior and health.

The breadth of the tobacco control efforts going on nationwide is striking. At NCI, we are committed to comprehensive tobacco control, and I am confident that—working with partners on the federal, state, and local levels—we can indeed turn the tide against tobacco use. ◆

Dr. Andrew C. von Eschenbach
Director, National Cancer Institute

Special Report

Family Studies: Unlocking Genetic Secrets, Promoting Team Science

When Dr. Peggy Tucker talks of "funny looking moles," she's not complaining about vermin in her yard. Rather, she's using shorthand for what dermatologists and melanoma experts call dysplastic nevi. In the 1970s and early 1980s, Dr. Tucker, chief of the Genetic Epidemiology Branch in NCI's Division of Cancer Epidemiology and Genetics (DCEG), and colleagues discovered in studies of melanoma-prone families that this previously unrecognized class of pigmented lesions was strongly related to melanoma risk. Subsequently, Dr. Tucker and colleagues conducted a large-scale case-control study of melanoma risk in the general population. The result: Half of the people with melanoma had dysplastic nevi.

"What we found as a risk marker in families translated directly to the general population," Dr. Tucker says. The finding now has even more import: Annual melanoma incidence in the United States exceeds 50,000 cases, and has tripled in men and doubled in women over the last 30 years. "We still don't have a population estimate of the prevalence of dysplastic nevi," she adds, but the risk conferred by these misshapen moles "gives important information about potential screening for an epidemic cancer."

The discovery of dysplastic nevi is an excellent example of the enormous impact that high-risk families have had on cancer research. According to DCEG Director Dr. Joseph Fraumeni, Jr., a pioneer in family studies research and co-discoverer of Li-Fraumeni syndrome (LFS), the influence of family studies has been far-reaching, especially in the booming area of genomics. "There has been a sea change in the recognition of genetics' importance in cancer induction and progression," Dr. Fraumeni says. "And discovery of the genetic underpinnings of familial cancer syndromes has fueled that shift."

The clinical and epidemiologic patterns that distinguish the hereditary and nonhereditary forms of retinoblastoma (a rare eye cancer in children) provided the foundation for one of the bellwether moments in cancer genetics. In 1971, Dr. Alfred Knudson reported his "two-hit" mathematical model indicating that one genetic mutation is inherited and the second is acquired in the target tissue of hereditary tumors, whereas both mutations of the same gene are acquired in nonhereditary tumors.

Guided by this model, laboratory scientists in 1986 uncovered the first identified tumor-suppressor gene, RB1, in retinoblastoma. That was followed by family-based studies that made it possible, for example, to identify the p53 gene in LFS, the p16 gene in hereditary melanoma, the BRCA1 and 2 genes in hereditary breast/ovarian cancer, the APC gene in familial polyposis, and the mismatch repair genes in familial colon cancer. In line with Knudson's hypothesis, the genetic mutations inherited in familial cancer syndromes have proven to be mechanistically important in the nonhereditary cancers that are much more common in the population. "The observations made in high-risk families," says Dr. Mark H. Greene, chief of DCEG's Clinical Genetics Branch, "have given us a window into the molecular pathogenesis of many cancers."

A Team Effort

Family studies at NCI and other centers were forerunners to the recent wave of collaborative studies linking epidemiology with clinical and laboratory approaches to uncover the causes of cancer and the means of prevention. While this interdisciplinary strategy has provided insights into many hereditary syndromes, adds Dr. Greene, there are questions about some familial tumors that can't be answered by a single group of investigators. "It requires increasingly large numbers of patients," he says, "which means creating collaborations between research groups willing to pool information and resources."

That realization has led the NCI intramural program to participate in a number of coalitions of investigators involved, most recently, in family-based studies of testicular cancer and chronic lymphocytic leukemia.

In the end, Dr. Fraumeni says, "The application of genomic and other emerging technologies to clinical and epidemiologic studies of familial cancer has paid huge dividends in understanding the mechanistic pathways that inform preventive, diagnostic, and therapeutic approaches toward cancer in the general population. At the same time, the findings are providing new clinical options and realistic hope to those high-risk families that have been so devastated by cancer." ◆

Cancer Research Highlights

NCI Funds EDRN Labs to Sustain Biomarker Discovery

NCI has awarded $9.8 million in first-year funding for 17 Biomarkers Developmental Laboratories within the Early Detection Research Network (EDRN). Biomarkers are substances found in the blood, other body fluids, or tissues that alone or in combination may signal the presence of cancer or the risk for the disease. These laboratories are now charged with discovering new biomarkers relevant to major cancers and identifying what combinations of biomarkers may best detect cancer or predict cancer risk.

Other EDRN components are Biomarkers Validation Laboratories, which work to validate the biomarker tests; Clinical and Epidemiologic Centers, which conduct the early phases of clinical and epidemiological research on the application of biomarkers; and the Data Management and Coordinating Center, which provides logistical, informatics, and statistical development and support.

These new Biomarkers Developmental Laboratories have one of the biggest challenges in biomarker research: searching through hundreds of samples using a variety of technologies to identify candidate biomarkers. Investigators will examine the human genome (genetic material), proteome (proteins made by genes), epitome (immune response biomarkers via antibody-antigen patterns), and metabolome (metabolic pathways and regulation), looking for potential ways to identify cancer and cancer risk. In a quest to discover cancer at the earliest stage of progression, biomarkers are often used as mileposts of cancer progression; they mark the critical events along the progression pathway from normal, to precancerous, to malignant cell.

More information on EDRN scientific components and projects, including a listing of Biomarkers Validation Laboratories, can be found at http://www3.cancer.gov/prevention/cbrg/edrn/components.html.

BRCA1 Mutation Increases Sensitivity to Chemotherapy

When choosing between chemotherapy agents for patients with breast or ovarian cancer, until now, clinicians have not had available biomarkers to help guide their decisions. But a review published in the November 17 *Journal of the National Cancer Institute* reveals that BRCA1 gene mutations—biomarkers for breast and ovarian cancer—are associated with sensitivity to DNA-damaging chemotherapy and resistance to spindle poisons.

Researchers at Queen's University Belfast in Northern Ireland (supported by several groups, including the Research and Development Office of Northern Ireland, Breast Cancer Campaign UK, and Cancer Research UK) searched preclinical and clinical papers published between Jan. 1, 1994 and Aug. 31, 2004, finding that BRCA1 is a DNA-damage response gene as well as a regulator of mitosis, possibly through the microtubules that help cells divide. As a result of this dual role, tumors that lack functional BRCA1 may be more sensitive to DNA-damaging chemotherapy agents such as cisplatin, carboplatin, anthracycline, and cyclophosphamide, but may be more resistant to drugs that thwart microtubule assembly and function, such as paclitaxel, docetaxel, vincristine, and vinorelbine, which are known collectively as spindle poisons. Conversely, tumors that overexpress BRCA1, and are therefore resistant to DNA-damaging agents, may be vulnerable to spindle poisons.

Because of conflicting results between preclinical and clinical studies, however, the authors recommend that these associations be tested further, and that patients with BRCA1 mutations have this gene sequenced so that the specific type of mutation they have can be characterized with their response to DNA-damaging chemotherapy and/or spindle poisons. Ultimately, it is hoped that BRCA1 mutation analysis can be used as a predictive marker when choosing chemotherapy options for breast and ovarian cancer patients.

Inverse Association Found Between Selenium and Colorectal Cancer

A study in the November 17 *Journal of the National Cancer Institute* has found an inverse relationship between selenium blood levels and adenoma recurrence risk. Researchers from the Arizona Cancer Center, in collaboration with other cancer centers and government agencies such as NCI, CDC, and the U.S. Food and Drug Administration (FDA), as well as medical and public health schools across the country, found that higher blood selenium concentrations in study participants were associated with lower risk for devel-

oping recurrent adenomas. This study was funded by grants from the U.S. Public Health Service as well as NCI's Specialized Program of Research Excellence (SPORE) in gastrointestinal cancer.

Selenium received attention as a possible cancer preventive agent after initial findings of a trial that examined its effects on nonmelanoma skin cancer. Other epidemiological studies have had mixed results; some have shown selenium to have a protective effect against colorectal cancer, while others have found no association. However, most individual studies analyzed small sample sizes, resulting in greater variability of results. This study pooled data from three separate studies in order to increase the precision of risk estimates.

Selenium concentrations were measured and baseline characteristics were tabulated from a total of 1,763 blood specimens from trial participants. Adenoma recurrence was analyzed for each study, as well as for the pooled population. In the pooled analysis, a linear decrease in the odds of adenoma recurrence was reported with increasing blood selenium levels higher than 100 ng/ml, and a statistically significant inverse relationship was observed between blood selenium levels and adenoma recurrence. Researchers concluded that, based on study results, selenium has a role in reducing the risk of colorectal adenoma recurrence.

Immunosuppressant Drug May Increase Risk of Lymphoma

Methotrexate (MTX) may promote Epstein-Barr virus (EBV)-positive lymphomas in rheumatoid arthritis and polymyositis patients by reactivating latent EBV, according to a study published in the November 17 *Journal of the National Cancer Institute*. Supported by grants from NCI, U.S. Public Health Service, and National Institutes of Health (NIH), researchers from the University of North Carolina, Chapel Hill, NIH, and the German Research Cancer Centre, also found that withdrawal of MTX therapy can result in regression in some EBV-positive lymphomas in patients.

Patients receiving MTX for rheumatoid arthritis or for polymyositis are at increased risk of developing EBV-associated lymphoproliferative disorders compared with the general population. EBV infection is common, with more than 90 percent of the adult population having a lifelong persistent infection, but normally EBV does not cause B-cell lymphomas. However, in immunosuppressed patients undergoing MTX therapy, an increased level of infectious EBV might overwhelm the capacity of the host immune system to eliminate early EBV-positive tumor cells.

Results from the study indicated that MTX treatment was found to enhance expression of EBV genes in two cell types using the doses expected in the serum of rheumatoid arthritis patients. MXT was also found to induce the release of infectious EBV progeny from the host cells. The authors conclude that "future studies should explore whether MTX treatment of other patients, such as those with malignancies, may increase the risk of EBV reactivation and other EBV-associated tumors." ◆

Community Update

New NCI Booklet Explains Biological Therapy

The growing use of interleukin-2 for the treatment of melanoma, the approval of Gleevec (imatinib mesylate) for treating chronic myeloid leukemia, and the use of Herceptin (trastuzumab) for HER2+ breast cancer have one thing in common: They are all biological agents used as treatment options for cancer patients. Biological therapy uses the body's immune system, either directly or indirectly, to fight cancer or reduce the side effects of some cancer treatments.

Biological therapy is a relatively new addition to the cancer treatment arsenal of surgery, chemotherapy, and radiation therapy. However, biological agents are not only used for treatment, they also help manage side effects associated with chemotherapy. As new agents are discovered and approved, nearly every cancer patient in the country is likely to encounter a biological agent at some point during the course of treatment.

NCI has developed a new booklet, *Biological Therapy*, to provide patients with essential information as they prepare for biological treatment. The booklet also encourages patients to discuss any questions they have with their doctors or nurses, and can serve as a complement to this patient-caregiver dialogue.

To order the free booklet, call 1-800-4-CANCER, or visit www.cancer.gov/publications. The booklet can be viewed online at http://cancer.gov/cancerinfo/biologicaltherapy. To access promotional materials for the booklet, visit www.ncipoet.org. ◆

Funding Opportunities

Featured Clinical Trial

NCI Transition Career Development Award to Promote Diversity

PAR-05-011
Application Receipt Dates: Jan. 10, May 10, Sept. 10, 2005; Jan. 10, May 10, Sept. 10, 2006; Jan. 10, May 10, Sept. 10, 2007

The NCI Transition Career Development Award to Promote Diversity (K22) will provide "protected time" for recipients to develop and receive support for their initial cancer research program. This award will facilitate the transition of underrepresented postdoctoral research scientists from the mentored to the independent stages of their careers in cancer research. Past patterns of cancer incidence and mortality predict that a disproportionate share of the increase in U.S. cancer incidence and mortality will be borne by minorities. A major obstacle to developing a stronger national minority cancer research effort has been the lack of significant strategic training programs for minority students and scientists in cancer research. The K22 mechanism establishes a unique pathway for recruiting and retaining advanced postdoctoral students and new investigators from groups that are underrepresented in biomedical research into investigative fields that address problems pertinent to the biology, etiology, pathogenesis, prevention, diagnosis, control, and treatment of human cancer. This funding opportunity will use the Transition Career Development Award (K22) mechanism.

For more information see: http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=2420

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Vaccine Therapy for Advanced Prostate Cancer

Name of the Trial

Phase I/II Randomized Pilot Study of Sequential Vaccination with Vaccinia-PSA-TRICOM Vaccine and Fowlpox PSA TRICOM Vaccine with or without Sargramostim (GM-CSF), or Fowlpox-GM-CSF in Patients with Metastatic Prostate Cancer (NCI-03-C-0176). See the protocol summary at http://cancer.gov/clinicaltrials/NCI-03-C-0176.

Principal Investigator

Dr. Philip Arlen, NCI Center for Cancer Research

Dr. Philip Arlen
Principal Investigator

Why is This Trial Important?

Prostate cancer, the second leading cause of cancer death in American men, recurs in 30 to 40 percent of patients despite advances in early detection and treatment. Patients with advanced or recurrent prostate cancer often are treated with hormonal therapies, which are designed to slow tumor growth by reducing levels of male hormones in the body. Resistance to hormonal therapies eventually develops in almost all patients with prostate cancer that has recurred or spread (metastasized).

The lack of effective therapies for metastatic or recurrent prostate cancer has inspired researchers to begin exploring new approaches that precisely target prostate cancer cells. Vaccine-based immunotherapy, which stimulates the immune system to attack cancer cells, represents a particularly promising approach. The researchers conducting this trial have developed a comprehensive vaccine-based immunotherapy regimen that targets prostate-specific antigen (PSA), a protein made by both normal and cancerous epithelial cells of the prostate. Men with prostate cancer often have elevated PSA levels in their blood, and PSA levels are thought to indicate the amount of prostate cancer in the body.

"What is most exciting about this study is that we are looking at the safety and effectiveness of third-generation vaccines with dramatically increased potency," said Dr. Arlen. "If the results prove positive, we will undertake additional studies to assess their effectiveness when combined with other forms of treatment."

Who Can Join This Trial?

Accrual for phase I has been completed. For the phase II part of the trial, researchers seek to enroll 32 patients with confirmed metastatic prostate cancer that is unresponsive to hormone therapy. See the complete list of eligibility criteria at http://cancer.gov/clinicaltrials/NCI-03-C-0176.

Where Is This Trial Taking Place?

The study is taking place at the NIH Clinical Center in Bethesda, Maryland.

Contact Information

Contact the NCI Clinical Studies Support Center at 1-888-NCI-1937. The call is toll-free and confidential. ◆

An archive of "Featured Clinical Trial" columns is available at http://cancer.gov/clinicaltrials/ft-all-featured-trials.

Notes

Rowland to Appear on CBS's *Sunday Morning*

On Sunday, November 28, Dr. Julia Rowland, director of NCI's Office of Cancer Survivorship, is scheduled to appear on the CBS news program *Sunday Morning*. She was interviewed for a 10-minute segment on survivorship, reported by senior correspondent Martha Teichner. The segment will appear after 9:00 a.m. EST.

Rowland said of the experience, "It was an incredible opportunity to participate in the survivorship dialogue that's been in the press in recent months. Our office was established 8 years ago, yet most Americans don't know it exists. We want survivors and their families to know that we're making their issues a critical part of the national cancer program. Through research and application, we must ensure that all survivors are offered hope for a full and meaningful life after cancer."

In addition to Dr. Rowland, several cancer specialists and advocates are scheduled to appear on the program, including Lance Armstrong, six-time Tour de France winner and member of the Presidents' Cancer Panel, and Ellen Stovall, President and CEO of the National Coalition for Cancer Survivorship. *Sunday Morning* is seen by 5 million viewers.

Waldmann Lectures on Role of IL-2 and IL-15 in Immunotherapy

Abnormal cells overexpress receptors for IL-2 and IL-15 cytokines, creating an excellent opportunity for targeted treatment and prevention of cancer and other immunologic diseases, said Dr. Thomas Waldmann, chief of the Metabolism Branch at NCI's Center for Cancer Research, during his Grand Rounds lecture on November 9. The IL-2 receptor blocker daclizumab (Zenapax), is already being used in humans to prevent organ transplant rejection, and has shown promise in mice as a treatment for advanced T-cell lymphoma. The more recently discovered IL-15 and its receptor pose other opportunities for targeted therapy. IL-15 in vaccines may be superior to IL-2, Dr. Waldmann said, particularly for diseases such as cancer, HIV, tuberculosis, malaria, and anthrax, where long-term response is needed. He also noted that agents targeting the IL-2/IL-15 system hold great promise for people with leukemia, lymphoma, rheumatoid arthritis, psoriasis, and other autoimmune diseases.

ASCO Issues Clinical Recommendations on Aromatase Inhibitors

The American Society of Clinical Oncology (ASCO) has issued an updated technology assessment stating that aromatase inhibitors are appropriate to use as adjuvant therapy for postmenopausal women with hormone receptor-positive breast cancer to lower the risk of tumor recurrence. The assessment, which focused on anastrozole, letrozole, and exemestane, was published online at http://www.jco.org on Nov. 15, ahead of print in the *Journal of Clinical Oncology*.

This new technology assessment updates ASCO's previous recommendation on adjuvant hormonal therapy for this patient group. These new recommendations, based on results from multiple large randomized trials, indicate that aromatase inhibitors can be used either following initial adjuvant treatment with tamoxifen or as initial treatment. Options include treatment with tamoxifen for 2 to 5 years, followed by treatment with aromatase inhibitors, or treatment for 5 years with an aromatase inhibitor alone.

"Many practicing oncologists have incorporated aromatase inhibitors into their standard practice," explains Dr. Jo Anne Zujewski, senior investigator in NCI's Clinical Trials Evaluation Program. "This update signifies that there is agreement that aromatase inhibitors are now considered standard therapy for these patients."

A patient version of the clinical practice recommendations is available online at http://www.PLWC.org.

FDA Approves Tarceva for Non-Small-Cell Lung Cancer

After fast-track review, the FDA has approved Tarceva (erlotinib) for treatment of locally advanced or metastatic non-small-cell lung cancer. The drug, which targets the EGFR1 pathway, is recommended once a day for patients who have failed to improve after at least one prior chemotherapy regimen. The FDA based its approval on results from a randomized phase III trial in which patients receiving Tarceva had a median survival that was 42.5 percent higher than patients who received a placebo—the first time that an EGFR-targeted therapy has gone beyond shrinking tumors to show a survival effect. A year after treatment, 31.2 percent of patients receiving Tarceva were still alive, compared with 21.5 percent of patients who had received placebo. In addition, Tarceva has fewer side effects (the most common being rash and diarrhea) than most other chemotherapeutic agents. ◆

Featured Meetings

This is a list of selected scientific meetings sponsored by NCI and other organizations. For locations and times and a more complete list of scientific meetings, including NCI's weekly seminars and presentations open to the public, see the NCI Calendar of Scientific Meetings at http://calendar.cancer.gov.

NCI Advisory Committee Upcoming Meetings

Date	Advisory Committee
Nov. 30-Dec. 1	National Cancer Advisory Board
Dec. 14	NCI Director's Consumer Liaison Group

Selected Upcoming Meetings of Interest

Date	Meeting	Speakers
Jan. 6-11	Molecular Targets for Cancer Therapy	Dr. J. Carl Barrett, Director, Center for Cancer Research; Dr. Elise Kohn, Laboratory of Pathology, Center for Cancer Research
Jan. 16-21	New Frontiers in Cancer Detection & Diagnosis	Dr. J. Carl Barrett, Director, Center for Cancer Research; Dr. Richard Simon, Chief, Biometric Research Branch, Division of Cancer Treatment and Diagnosis; Dr. Sudhir Srivastava, Chief, Cancer Biomarkers Research Group, Division of Cancer Prevention
Jan. 20-22	6th Annual Meeting of the Society for Personality and Social Psychology	Dr. Robert Croyle, Director, Division of Cancer Control and Population Sciences

NCI Exhibits

NCI Exhibits are presented at various professional and society meetings. Further information about the NCI Exhibits program can be found at http://exhibits.cancer.gov.

The *NCI Cancer Bulletin* is produced by the National Cancer Institute (NCI). NCI, which was established in 1937, leads the national effort to eliminate the suffering and death due to cancer. Through basic, clinical, and population-based biomedical research and training, NCI conducts and supports research that will lead to a future in which we can identify the environmental and genetic causes of cancer, prevent cancer before it starts, identify cancers that do develop at the earliest stage, eliminate cancers through innovative treatment interventions, and biologically control those cancers that we cannot eliminate so they become manageable, chronic diseases.

For more information on cancer, call 1-800-4-CANCER or visit http://www.cancer.gov.

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