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Survey of Tumors Reveals Second Gene "Signature"

New research suggests that a recently discovered class of genes called microRNAs could potentially be used broadly to diagnose and classify tumors, including those of unknown origin.

During the last 5 years, researchers have found more than 200 microRNAs in humans. These small molecules—about 25 units of genetic code in length—are thought to regulate the activity of genes during development and may do the same for some genes involved in cancer.

To determine whether profiling microRNA gene activity would yield useful information, researchers in Boston surveyed the activity of 217 microRNA genes in a diverse collection of human tumors. The microRNA genes were "surprisingly informative," and the researchers found signature patterns of activity associated with different tumors, they report in the June 8 *Nature*.

"In terms of classifying cancers, these microRNA genes appear to pack a lot of punch," says Dr. Todd Golub of the Dana-Farber Cancer Institute and the Broad Institute of Massachusetts Institute of Technology and Harvard University.

The microRNA genes were particularly useful in diagnosing tumors that no longer resembled the tissues that originally gave rise to them. In fact, just 200

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Director's Update

Prostate Cancer Research: A Model for Success

Men's Health Week, June 13–19, is a good time to celebrate the tremendous progress we've made against prostate cancer—the second leading cause of cancer death among men after lung cancer. Remarkably, more than 85 percent of all prostate cancer diagnoses now occur before the disease has spread. As a result, the relative 5- and 10-year survival rates for men diagnosed at this stage are 98 and 86 percent, respectively.

But a prostate cancer diagnosis offers a vexing choice for many men, because only 1 in 10 prostate cancers poses a mortal threat. In the absence of symptoms, prostate-specific antigen (PSA) levels and biopsy results yield limited information about how aggressive the

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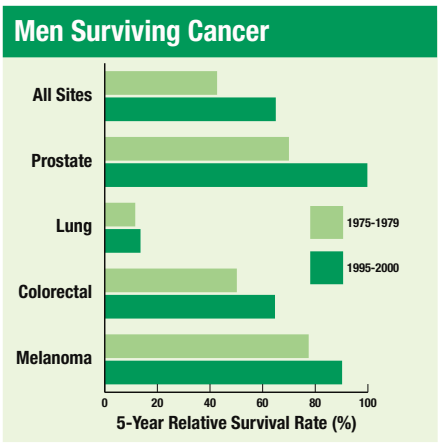


(Survey of Tumors continued from page 1)
microRNA genes were more informative than 16,000 conventional genes that were profiled for comparison. If a proposed Human Cancer Genome Project goes forward, Dr. Golub notes, it would make sense to include information about microRNA genes "because the profiling can be done at low cost and may be informative."

Some researchers are already using microRNA gene signatures experimentally to distinguish between patients who have very different forms of the same cancer. "We have a microRNA gene signature for chronic lymphocytic leukemia that tells us whether a patient will likely need aggressive treatment or not," says Dr. Carlo Croce of the Ohio State University Comprehensive Cancer Center, who is preparing a paper on the subject.

Dr. Croce and his colleagues reported last year that 50 percent of the known microRNA genes reside in chromosomal regions that are either unstable or associated with cancer. The challenge now is to identify the genes that are regulated by microRNAs—and to figure out how microRNA genes themselves are regulated.

Two other studies in the same issue of *Nature* explore these questions with regard to the gene *Myc*, which is implicated in many cancers and activates a cluster of microRNA genes on chromosome 13.

In one study, led by Dr. Gregory Hannon of Cold Spring Harbor Laboratory, this cluster of microRNAs accelerated the growth of tumors when transplanted into mice with overactive *Myc* genes. In the other study, two microRNAs from the same cluster were shown to alter levels of a protein called E2F1 that interacts with *Myc*. "We have just begun to scratch the surface," says Dr. Joshua Mendell of Johns Hopkins University School of Medicine, who led the E2F1 research. "Hundreds of genes are probably regulated by this cluster of microRNAs, and we need to characterize those relationships."

One such relationship involves the cancer-promoting gene *RAS* and a microRNA called *let-7* that was recently found to regulate *RAS*. As it turns out, some lung tumors are missing *let-7* and this loss may allow *RAS* to be overactive, researchers from Yale University reported in March. "We believe *let-7* is a tumor suppressor gene in lung cancer, and that the loss of *let-7* in some people contributes to the cancer," says Dr. Frank Slack, who led the study.

Dr. Slack predicts that more than 1,000 human microRNAs will eventually be found. "This is turning out to be a large class of molecules, and people are starting to appreciate them for the important regulators that they are," he says. ◆

(Director's Update continued from page 1)
disease is. As a result, for many men, whether to undergo treatments such as surgical removal of the entire prostate, radiation, or engage in watchful waiting, is disturbingly ambiguous.

As a prostate cancer survivor and urologic oncologist, I have been greatly encouraged by the research being done to help patients and clinicians make more informed decisions. In most cancers, we are endeavoring to identify biomarkers that will signal the early presence of the disease, but prostate cancer presents the challenge of developing markers that will define the virulence of the disease.

In a study of 400 men with prostate cancer published this month in *Cancer Epidemiology, Biomarkers, and Prevention*, researchers from the NCI Specialized Program of Research Excellence (SPORE) at Dana-Farber Cancer Institute in Boston showed that low levels of a specific protein, AMACR, may be a powerful biomarker for aggressive disease and may yield some specific data. A 1,300-patient confirmatory study conducted in conjunction with Swedish researchers is already underway.

For those with cancer, numerous treatment advances have been made. Prostate cancer surgery can now be performed less invasively with laparoscopic techniques, and a number of facilities now offer robotic laparoscopic surgery, which may provide additional safety advantages. Radiation therapy also has improved, with new technologies allowing for more precisely targeted radiation, resulting in lower radiation doses.

And potentially new treatments may come in the form of vaccine therapy. Encouraging results have been reported in early clinical trials with a recombinant viral vector-based vaccine containing the genes for PSA and three immunostimulatory molecules developed by NCI. A cooperative group phase III trial is in the late planning stages that would test the vaccine in asymptomatic patients who have been treated with hormone therapy and whose only evidence of prostate cancer is a rising PSA. The trial may be launched later this year.

Prostate cancer research offers a model of how we're attacking cancer in the 21st century: conducting well-designed clinical trials and combining our expanded understanding of this disease's molecular underpinnings with the advantages offered by advanced technologies to improve our diagnostic, prognostic, and treatment armamentarium. We've made tremendous inroads against prostate cancer, and I have high expectations of many more to come. ◆

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

Spotlight

Testicular Cancer Update: Building on Success

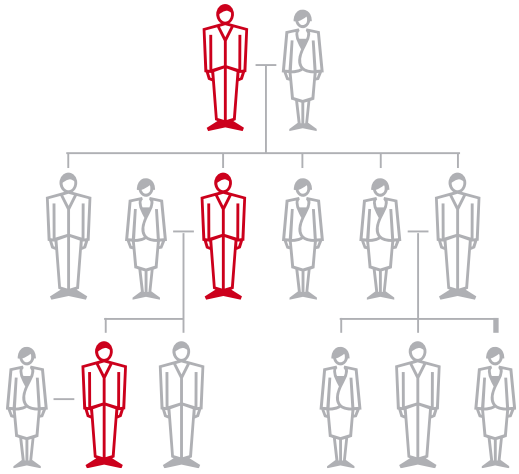
It's hard to find a more potent symbol of victory over cancer than world champion cyclist Lance Armstrong as he gears up for his final Tour de France race next month. Through his recovery from testicular cancer in 1996—and his incredible athletic achievement on the Tour—Armstrong has given hope and determination to countless cancer patients, clinicians, and researchers.

Equally incredible are the tremendous strides in treatment of testicular cancer, the most common cancer to strike young men between 15 and 35 years of age, which was uniformly fatal. In recent years the rate of cure for early-stage disease approaches 95 percent. Key to that dramatic turnaround was the introduction during the 1970s of cisplatin (Platinol) into standard treatment regimens, through the pioneering work of Dr. Lawrence Einhorn and his colleagues at the Indiana University Cancer Center. Armstrong received his successful cancer treatment from Dr. Einhorn.

"The chemotherapy treatment for this disease is so successful, it's almost a miracle," notes Dr. Marston Linehan, chief of NCI's Urologic Oncology Branch.

Dr. Einhorn and others have also developed and refined highly effective surgical techniques, which, in many cases, are able to cure the disease without chemo or radiation. These include orchiectomy (surgery to remove one or both testicles) and removal of lymph nodes in the abdomen, called retroperitoneal lymph node dissection or RPLND. (The lymph nodes act as the primary route for metastases in testicular cancer.)

Despite these huge successes, researchers and clinicians are seeking further improvements in treating testicular cancer, including finding ways to minimize long-term side effects of the treatments themselves.



NCI researchers are studying the hereditary forms of testicular cancer.

At last year's annual meeting of the American Society of Clinical Oncology, Dr. Timothy Oliver of St. Bartholomew's Hospital in London presented findings from 1,400 patients showing that after 4 years of follow-up, one course of carboplatin medication appeared as effective as radiation therapy in treating early seminoma—a common form of testicular cancer. Most important, the drug also appeared to reduce the risk of second cancers, compared with radiation.

"There are also some interesting questions being developed about the potential role of minimally invasive surgical approaches to treatment of testicular cancer," Dr. Linehan says.

For example, attention is being focused on whether laparoscopic surgery for RPLND is as effective as the current "open" surgery approach. Dr. Joel Sheinfeld, vice chairman of Urology at Memorial Sloan-Kettering Cancer Center, observes that this new approach remains subject to debate: "It's unclear what is the therapeutic efficacy of laparoscopic surgery as compared with open RPLND, where the therapeutic efficacy is well established," he says.

Memorial Sloan-Kettering plans to initiate a study of the less invasive RPLND technique, Dr. Sheinfeld continues. "We're going to do a study of the laparoscopic operation so that it exactly mimics the open operation. This will be for patients with low-stage, seminoma stem cell tumors. Patients with low-volume disease will not get chemotherapy."

Dr. Sheinfeld and colleagues also recently published a study in the *Journal of Clinical Oncology* assessing the impact of Memorial Sloan-Kettering's stringent selection guidelines for RPLND candidates. "We've learned over the years to exclude from surgery certain patients with elevated markers after orchiectomy because the likelihood of failure is so high." Since 1999, the institution has limited the procedure to only patients with low-volume disease in the retroperitoneum who are less likely to relapse. "If you look at the old data, the relapse rates were 20 to 30 percent; now it's fewer than 10 percent," Dr. Sheinfeld adds.

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Cancer Research Highlights

Prostate Surgery Outcomes Found To Be Better Than Watchful Waiting

Overall, long-term survival rates for men who underwent radical prostatectomy for prostate cancer were superior to survival rates among prostate cancer patients who engaged in "watchful waiting," according to a study published in the May 12 *New England Journal of Medicine*.

After a median of 8.2 years follow-up of 695 men, 10-year estimates show the surgery to be superior in all endpoints investigated, according to researchers led by Dr. Anna Bill-Axelson of Sweden's Uppsala University Hospital. Within the two study arms, the difference in overall survival was significant: 106 of the 348 men in the watchful waiting arm died of all causes, compared with 83 of the 347 men in the surgery arm, the researchers report.

In addition, among the surgery group, death due to prostate cancer was reduced by 44 percent compared with the watchful waiting group. Similarly, in the surgery group, the risk of distant metastasis decreased by 40 percent and the risk of local progression decreased by 67 percent. Preliminary data reported in 2002 indicated advantages for the surgical group. The authors predict "that the benefits of this surgery will increase during longer periods of follow-up."

The men in the study were newly diagnosed with prostate cancer between 1989 and 1999. Their tumors were generally more advanced than would be found in men newly diagnosed in the United States, where watchful waiting is more often recommended.

Bone Pain and Radiation: 1 Dose Equals 10

A single dose of radiation alleviates bone pain as well as 10 multiple doses over 2 weeks, with fewer adverse effects, concludes a study in the June 1 *Journal of the National Cancer Institute*.

Many patients with breast, prostate, lung, and other solid tumors develop metastases in the bones of the pelvis, spine, or extremities, which can cause excruciating pain. For decades, many of these patients have received a standard radiation regimen: a 3-gray dose of radiation is delivered to the painful bones in 10 treatment sessions over 2 weeks. Some 50 to 80 percent of patients report significant pain reduction with this regimen.

To help resolve a long-running debate over the time- and cost-effectiveness of this regimen, Dr. William Hartsell and colleagues at the Lutheran General Cancer Care Center in Park Ridge, Ill., recruited 900 patients with breast or prostate cancer and 1 to 3 sites of painful bone metastases. Half received the standard 10-day regimen while the other half received a single 8-gray dose.

Three months after treatment, two-thirds of patients in each group reported significant pain relief, including 15 percent in the single-dose group and 18 percent in the 10-dose group that reported complete pain relief. A third of the patients in each group no longer required narcotics. While the single-dose group returned for retreatment more often, they reported fewer adverse side effects such as nausea.

The work of Dr. Hartsell and colleagues parallels findings from two recent large trials, the Dutch Bone Metastasis Study and the Bone Pain Trial Working Party Study.

While the 10-session schedule is most common in the United States, radiologists in Great Britain are inclined to use the single 8-gray regimen, write Drs. Lisa Kachnic and Lawrence Berk in an accompanying editorial. They encouraged U.S. radiologists to adopt the single-session regimen.

Working Groups Discuss Graft-Versus-Host Disease

Researchers studying chronic graft-versus-host disease (GvHD) met on June 6 in Bethesda, Md., to share information and recommendations related to developing future clinical trials for the disease.

The meeting, co-chaired by Dr. Steven Pavletic of NCI's Center for Cancer Research and Dr. Georgia Vogelsang of the Johns Hopkins School of Medicine, marked the first anniversary of the NIH Consensus Development Project on Criteria for Clinical Trials in Chronic Graft-Versus-Host Disease. The project aims to develop definitions and tools for conducting clinical trials, outline standards of clinical care, and guide future research.

At the meeting, six working groups reported findings from investigations into the design of clinical trials,

diagnosis and staging, biomarkers, histopathology, response criteria, and ancillary therapy and supportive care. One of the main topics of discussion was the critical need to establish a common language for communicating about chronic GvHD and to develop standards for diagnosing and evaluating the disease in patients.

GvHD is a devastating disease that can occur following bone marrow transplantation if the donor's immune cells in the transplanted marrow mount an attack against the patient's tissues and vital organs. About 6,000 cancer patients in the United States are treated by allogeneic hematopoietic stem cells each year, and chronic GvHD is reported in about half of them.

The project is scheduled to publish the final findings and recommendation of the working groups starting in the fall. "In just 1 year we have laid the foundation for a new cycle of research in chronic GvHD," said Dr. Pavletic at the meeting.

Pooled Data Suggest that Alcohol Reduces Risk of non-Hodgkins Lymphoma

By pooling the original results of 9 studies involving more than 15,000 people, researchers found that participants who drank alcohol had a lower risk of developing non-Hodgkins lymphoma (NHL) compared with nondrinkers.

The overall reduction in risk was modest—about 25 percent—for current drinkers, and the source of the reduced risk is not yet clear, the researchers say. It might be due to drinking alcohol or it might be due to other lifestyle factors that distinguish drinkers from nondrinkers.

"We found a slight and consistent lower risk in current drinkers and in people who recently quit, regardless of the type of alcohol or the amount they consumed," says Dr. Lindsay Morton, a research follow in NCI's Division of Cancer Epidemiology and Genetics (DCEG) and first author of the paper.

For unknown reasons, the greatest reduction in risk was associated with Burkitt's lymphoma, one of the many NHL subtypes that involve lymph cells.

The study, published online in the June 7 *Lancet Oncology*, is the second in a planned series by the International Lymphoma Epidemiology Consortium (InterLymph), which includes researchers in the United States, Europe, Canada, Australia, and Asia. Future studies will follow drinkers and nondrinkers prospectively to determine whether the result is actually a biological effect of consuming ethanol. They may also focus on genetic variants associated with the metabolism of alcohol.

"We would have an important clue about the biology of the disease if we can show that drinking alcohol is found to lower the risk of NHL," says Dr. Patricia Hartge of DCEG, the study's senior author. "The current results have no implications for people's drinking habits."

eHealth Conference Discusses Research and Evaluation Issues

At last week's "Critical Issues in eHealth Research" conference in Bethesda, Md., more than 400 participants discussed the latest behavioral research concerning the use and impact of the Internet and other new communication technologies. The 2-day conference convened government scientists, academic researchers from a variety of disciplines, survey research scientists and practitioners from the private and public sectors, and students to discuss the state of the science of eHealth research theory, design, methodology, ethics, and evaluation.

Organizers of the meeting hope to jump-start a move toward scientific coherence, said Dr. Robert Croyle, director of NCI's Division of Cancer Control and Population Sciences. "Research on the basic methods and processes that underlie communication and information processing—cognition, decision making, how to utilize the technology—is scattered across 400-odd different journals, fields, and departments, where excellent science has been done. But we think it's time to assemble the theory and methodology underlying the field." Looking for efficiencies and synergy, the National Institutes of Health (NIH) wants to help organize the field to "build on the strength of the foundational, empirical research on strategies and methodology to inform our applications and interventions," Dr. Croyle said.

The conference was sponsored by NCI, the National Institute of Mental Health, the National Institute on Drug Abuse, the National Library of Medicine, the Office of Behavioral and Social Sciences Research of the Department of Health and Human Services, the Office of Disease Prevention of NIH, and the Health e-Technologies Initiative of the Robert Wood Johnson Foundation. ◆

(Spotlight continued from page 3)

NCI scientists are also studying hereditary forms of testicular cancer. This is a follow-up to the discovery of a familial testicular cancer susceptibility gene on the X-chromosome (the chromosome that men inherit from their mothers), named the Testicular Germ Cell Tumor-1 (TGCT1) gene.

Dr. Mark H. Greene, chief of the Clinical Genetics Branch, is leading the Institute's Familial Testicular Cancer study, which seeks to "find the gene or genes that cause this type of cancer to occur in families." The study seeks to enroll 750 individuals from families with a history of testicular cancer. Some of the participants will be invited to the NIH Clinical Center for more detailed clinical/genetic/laboratory studies designed to identify other factors that may contribute to the development of familial testicular cancer.

NCI is also conducting a case-control study of testicular cancer among members of the U.S. Armed Forces. Dr. Katherine McGlynn, principal investigator in the Hormonal and Reproductive Epidemiology Branch of DCEG, is investigating environmental and genetic determinants of risk among approximately 800 testicular cancer cases and 800 controls, along with information from approximately 1,000 mothers of study participants.

"It is hoped that by increasing knowledge about the causes of testicular cancer, prevention and surveillance strategies will be developed which will be beneficial to future families with an increased risk of developing this cancer," Dr. Greene comments. For more information on NCI's clinical genetics testicular cancer study, go to http://familial-testicular-cancer.cancer.gov/index.html. ◆

Featured Clinical Trial

Targeting Progressive Chronic Lymphocytic Leukemia

Name of the Trial

Phase II Study of LMB-2 Immunotoxin in Patients with CD25-Positive Chronic Lymphocytic Leukemia (NCI-04-C-0121). See the protocol summary at http://cancer.gov/clinicaltrials/NCI-04-C-0121.

Principal Investigator

Dr. Robert J. Kreitman, NCI Center for Cancer Research

Dr. Robert J. Kreitman
Principal Investigator

Why Is This Trial Important?

Chronic lymphocytic leukemia (CLL) is the most common form of leukemia occurring in individuals aged 50 and over in the United States. Usually a slowly progressive or indolent form of cancer, CLL is characterized by the uncontrolled proliferation of lymphocytes. Most patients with indolent CLL do not require treatment until the disease causes symptoms, at which time they receive standard chemotherapy. Patients with indolent CLL generally survive 5 to 10 years after diagnosis.

Some patients with CLL, however, develop a more rapidly progressive form of the disease that often proves resistant to standard treatment. The average survival of these individuals is less than 24 months following diagnosis.

In this study, researchers are testing the effectiveness of an immunotoxin called LMB-2 in selectively killing CLL cells. LMB-2 is a laboratory-created monoclonal antibody fragment attached to a bacterial toxin. LMB-2 binds to a protein called CD25, which is found on the surface of many human lymphocytes. CD25 is more abundant on CLL cells than on normal lymphocytes, thereby allowing malignant cells to be targeted with great specificity. Once LMB-2 binds to CD25 on the cell surface, the toxin is taken up by the lymphocytes, causing them to die.

Patients enrolled in the study will receive up to 6 courses of LMB-2 over approximately 6 months, providing their disease does not worsen. If and when patients respond completely to LMB-2 (CLL is undetected), they will be given 2 additional courses of treatment.

Who Can Join This Trial?

Researchers plan to enroll 16 to 27 patients aged 18 and older who have been diagnosed with CD25-positive CLL. See the complete list of eligibility criteria at http://cancer.gov/clinicaltrials/NCI-04-C-0121.

Where Is This Trial Taking Place?

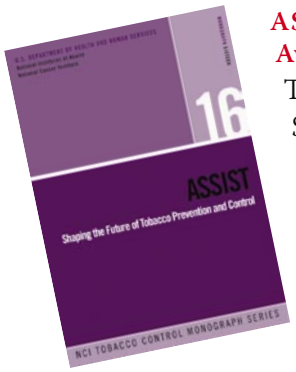
The trial is taking place at the NIH Clinical Center in Bethesda, Md.

Contact Information

For more information, contact the NCI Clinical Studies Support Center at 1-888-NCI-1937. The toll-free call is confidential. ◆

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

Notes



ASSIST Monograph Available

The American Stop Smoking Intervention Study for Cancer Prevention (ASSIST) was an 8-year non-randomized demonstration project for tobacco control, conducted from 1991–1999 by NCI, the American Cancer Society, and 17 state health departments. The monograph, *ASSIST: Shaping the Future of Tobacco Control*, documents models and lessons learned, describes case studies on ASSIST interventions, and provides concrete examples for building long-term capacity and positive behavioral health changes by applying these policy and media approaches. It is intended for program planners, public health practitioners, researchers, advocates, and state and local health department staffs to promote positive behavioral change.

ASSIST: Shaping the Future of Tobacco Control can be ordered at www.cancer.gov/publications or by calling 1-800-4-CANCER. It is available online at http://dccps.cancer.gov/tcrb/monographs/16/index.html.

NCI Fellow Selected for Tour of Hope

Dr. Keith Bellizzi, a DCP Cancer Prevention Fellow working in NCI's Office of Cancer Survivorship, has been accepted as 1 of 20 cyclists selected to participate in this year's Bristol-Myers Squibb Tour of Hope™, sponsored in part by the Lance Armstrong Foundation. Dr. Bellizzi is a 10-year, two-time cancer survivor and a cancer researcher focusing on survivorship and aging, coping, and health behaviors.

The Tour of Hope team comprises cancer researchers, nurses, physicians, caregivers, and cancer survivors. Almost 1,200 people applied for the 3,300-mile trip from San Diego to Washington, D.C., to inspire and inform the public about the importance of cancer research and clinical trials. The Tour begins on September 29th and ends on October 8, with team members relay-riding in 100-mile segments around the clock.

NCI Reaches Out to Minority Cancer Survivors

NCI officials discussed cancer survivorship in minority communities and a new $95 million NCI grant program to combat cancer disparities during several broadcast interviews for National Cancer Survivors Day, which was observed on June 5.

The interview reaching the widest audience took place on Monday, June 6, on the national Spanish-language morning talk show, *Despierta America* (Wake Up America!). The show is the Latino community's version of the *Today Show* and is broadcast every weekday morning on the Univision network. NCI's Dr. Jorge Gomez, head of the Organ Systems Branch and the Special Programs of Research Excellence (SPOREs) program, was interviewed during a live 4-minute segment. Dr. Gomez appeared on the show with Carolina Hinestrosa, a two-time breast cancer survivor who is also an advocate with the National Breast Cancer Coalition and an organization called Nueva Dia (New Day), for Latina cancer patients.

Also on June 6, Dr. Harold Freeman, head of the Center to Reduce Cancer Health Disparities, taped an interview on cancer survivorship as it relates to the African American community for the American Urban Radio Networks. That interview was broadcast throughout the day as part of the network's news package. American Urban serves 475 stations and about 25 million listeners across the U.S.

NCI's Dr. J. Fernando Arena, program director in the Epidemiology and Genetics Research Program in the Division of Cancer Control and Population Sciences, kicked off the Survivors Day interviews on Saturday, June 4, with a live 15-minute segment with Dr. Elmer Huerta on the *Prevenir es Salud* radio show, which is heard on 44 radio stations nationwide. ◆

CCR Grand Rounds

June 21: Dr. Michael Karin, Professor of Pharmacology, University of California, San Diego "The IKK Complex at the Crossroads of Inflammation and Cancer"

June 28: Dr. John D. Minna, Professor & Director, Hamon Center for Therapeutic Oncology Research, University of Texas Southwestern Medical Center "Molecular Pathogenesis of Lung Cancer With Translation to the Clinic"

CCR Grand Rounds are held 8:30 to 9:30 a.m. at the NIH campus in Bethesda, Md., in the Clinical Center's Lipsett Amphitheater. ◆

Community Update

Men's Group Supports Prostate Cancer Patients

At each weekly meeting of the prostate cancer patient support group in Greenbrae, Calif., group co-facilitator Stan Rosenfeld always looks for the newcomers.

Stan Rosenfeld

The new guys are easy to recognize, he says: "Most are men who are newly diagnosed. They've got the shock of having cancer in an area of their body that a lot of guys don't know much about, which is an additional puzzlement to them." Mr. Rosenfeld and other long-time members of the group remember what it was like for them years before—the confusion, the hunger for information, and the welcome empathy from other people who had gone through the same experience.

They start each meeting by "focusing on any newcomers," he notes. "They get special treatment, including a big packet of information. We can easily spend an hour talking with one new guy," answering his questions and reviewing his pathology report and other information to hone in on his diagnosis and treatment options. "They see all these guys at the meeting, most of whom have survived many years after diagnosis and treatment," Mr. Rosenfeld adds. "That can be very encouraging."

Stan Rosenfeld joined the group in 1998 shortly after his diagnosis with prostate cancer. It was one of the first men's support groups for prostate cancer and is affiliated with the University of California, San Francisco Comprehensive Cancer Center.

"When the group got started, doctors were reluctant to send patients to support groups for fear the patients would get some advice contrary to what the physicians were offering," Mr. Rosenfeld recalls. "That's all changed. Now when a patient asks 'What do I do? How can I get more information?' the first thing doctors and their nurses will tell them is to join a support group."

Rosenfeld credits this change to the quality and up-to-date information provided by group leaders and the careful training most of them receive from the American Cancer Society's Man to Man program (www.cancer.org) and the Us Too organization for prostate cancer (www.ustoo.org).

The group Mr. Rosenfeld helps lead draws between 20 and 25 people to each meeting. They include mostly men, but the group is also open to spouses, family members, and friends. "About half of the attendees are guys who are trying to make their treatment decisions," he adds. "Often a guy has many good treatment options to choose from, including surgery, radiation, and hormone therapy. That can be very confusing. We can tell him what all of these things are actually like and help him make the best choice."

Most men continue coming to the group's meetings until their treatment is completed. Some come back if their cancer recurs. Some come back because they're committed to helping other men.

Mr. Rosenfeld adds, "I'm always very happy and pleased when guys come back to a meeting after they've had their treatments and thank the group. I've seen a few guys in tears as they expressed their gratitude for the information and support they received from the group." ◆

Featured Meetings and Events

A comprehensive calendar of cancer-related scientific meetings and events sponsored by NCI and other scientific organizations is available at http://calendar.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.

NCI Cancer Bulletin staff can be reached at ncicancerbulletin@mail.nih.gov.