

Pathway

Physician-focused News and Resources from Nevada Cancer Institute

What you should know about Nevada Cancer Institute

Nevada Cancer Institute is a team of dedicated oncologists, scientists and researchers committed to providing world-class, research-linked cancer care to Nevadans and people throughout the Southwest. Since opening our doors in 2005, we have served more than 10,000 patients and collaborated with more than 1,100 area physicians. As a nonprofit research center, an essential part of our mission is to ensure cancer patients have access to the latest in cancer prevention, education and treatment options. The faculty and staff of Nevada Cancer Institute are here to serve our regional medical community. As your partner, we can offer your patients access to therapy options unavailable anywhere else in Nevada.

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Nevada Cancer
INSTITUTE

Research • Treatment • Education



John C. Ruckdeschel, M.D., is Nevada Cancer Institute director and chief executive officer. A globally recognized lung cancer physician and researcher, Dr. Ruckdeschel's clinical and research interests focus on lung cancer and behavioral oncology with a focus on patient-physician communication.



Oscar B. Goodman, M.D., Ph.D.

Blood Test Helps Guide Cancer Therapy

A group of Nevada Cancer Institute (NVC I) physicians and scientists have demonstrated in a recently published study that among 11 blood tests, the CellSearch Circulating Tumor Cell (CTC) assay and the LDH test provide the most prognostic information for prostate cancer patients starting a new line of therapy, particularly as it relates to survival.

The study, titled “Circulating Tumor Cells in Patients with Castration-Resistant Prostate Cancer Baseline Values and Correlation with Prognostic Factors,” was published in the June 2009 issue of *Cancer Epidemiology, Biomarkers and Prevention*, a journal that focuses on cutting-edge biomarkers with the high likelihood of shaping future diagnosis, prognosis and therapeutic decision-making.

The paper details the use of the CellSearch CTC assay in 100 patients with prostate cancer who are no longer responsive to hormonal therapy. It represented one of the

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largest single institution experiences with this test.

“This simple blood test helps guide therapeutic decision making, helping us to identify patients at higher risk from prostate cancer death,” said Dr. Oscar B. Goodman, assistant member, Department of Clinical Oncology. “It also predicts which patients are at risk of having cancer that has spread and can be picked up by scans.”

The physicians and scientists performing this study included Oscar B. Goodman, Louis M. Fink, James T. Symanowski, Beth Grobaski, David Pomerantz, Yupu Ma, and David C. Ward.

In early 2008 CTC counting was approved by the FDA for monitoring patients with prostate cancer that has spread outside the prostate gland and no longer responds to initial

hormonal manipulation that depletes androgens (male sex hormones, widely held to initially promote the growth of cancer cells). Much like leukemia, cancer cells circulate in the bloodstream in the majority of these patients and can therefore be detected by a simple blood test.

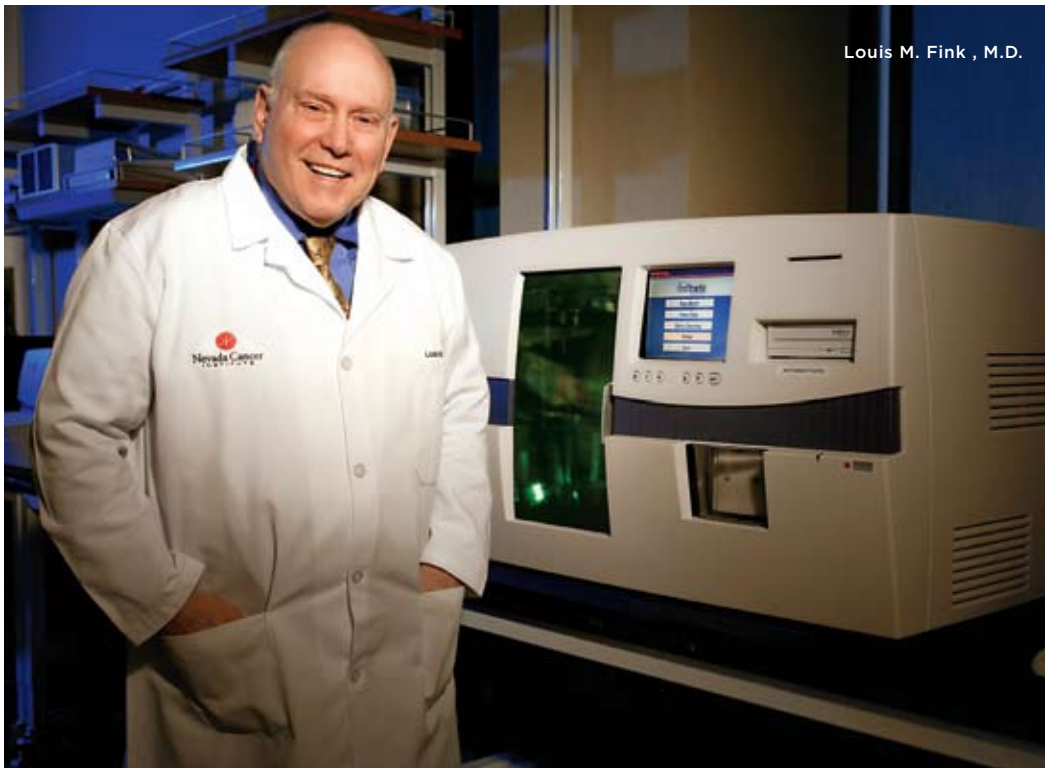
After obtaining CTC counts together with 11 other blood tests and an in-depth clinical history, these 100 patients began a new line of therapy that was monitored for up to 26 months with regard to survival. This study answered a number of questions regarding this test, including its proper usage and how it compared to other conventional blood tests such as the standard PSA with respect to its ability to predict who is at risk of succumbing to prostate cancer.

In the study, survival for

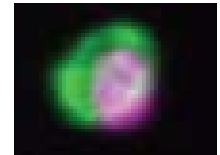
patients with favorable CTC counts (low levels of CTC, less than 4 cells) could not be estimated due to the low number of deaths, while patients with unfavorable counts (high levels of CTC, 4 or more cells) survived a median period (50% percentile) of a little over 8 months.

“The results of this study will have far-reaching effects on how we test for prostate cancer and which patients we treat aggressively,” said Dr. Goodman.

From the blood tests performed, only CTC and LDH had independent value at prognosticating outcomes (PSA, the most commonly used biomarker, did not). Also, in patients without detectable spread of disease on CAT or bone scans, CTC counts were always low, raising the possibility that in select patients this test may be used in lieu of scans.



Louis M. Fink , M.D.



Circulating tumor cells provide a window into a patient's cancer. By examining these cells, physicians have the ability to create a therapy tailored specifically for that individual. The circulating tumor cell above shows the nucleus of the cell in purple while the green represents cytoke-
ratin. The nucleus encapsulated by cytoke-
ratin is a positive CTC identifier.



Wolfram Samlowski, M.D.

First-in-human Trial Opens at NVCI

Nevada Cancer Institute (NVCI) recently enrolled a subject in a first-in-human clinical trial of a novel investigational drug that causes accumulation of defective proteins to kill cancer cells.

Sponsored by Salt Lake City-based Myriad Pharmaceuticals Inc., the treatment, referred to as MPC-3100, is an investigational oral drug currently being studied in qualifying patients with untreatable or relapsed cancer. Wolfram Samlowski, M.D., NVCI head of the Section

of Melanoma, Renal Cancer and Immunotherapy, is the principal investigator for the trial conducted at the Institute.

In order for cells to function, proteins must essentially be “folded” into the correct configurations. If certain proteins are prevented from folding correctly, these defective proteins build up and actually work to inhibit growth and kill existing cancer cells.

This understanding of cellular biochemistry has led to the development of a new class of

investigational drugs called heat shock protein 90 (Hsp90) inhibitors. Initial Hsp90 inhibitors, all natural product derivatives, have shown some activity in successfully treating cancers but have resulted in liver toxicity.

MPC-3100 is a novel, fully synthetic, investigational Hsp90 inhibitor designed not only to be effective but hopefully to have fewer side effects than the natural product predecessors. Preliminary studies by Myriad Pharmaceuticals demonstrated that MPC-3100 significantly and dose-dependently reduced tumor growth in a variety of human cancer cell lines implanted in mice, including colon, prostate, myeloid leukemia, small cell lung, gastric, breast and ovarian cancers. Preliminary non-clinical studies showed minimal toxicity.

The clinical trial is just the latest example of how NVCI continues to advance the boundaries of medicine in Nevada through its research-based clinical care. In less than three years, NVCI has opened more than 100 clinical trials, Phase I, I/II and III, of which 13 have been first-in-human.

“This is another example of access to novel therapies that we can offer to patients in Nevada that are not yet widely available,” Dr. Samlowski said. “It is important to have promising new drugs available to patients as early as we can.”

An 84-year-old Las Vegas resident was the first person dosed at NVCI with MPC-3100. This World War II veteran, who wears his Purple Heart and Bronze Stars around his neck, sees his ongoing battle with prostate cancer as just another fight that must be fought and won. He has had numerous standard-line therapies that have not been successful in treating his cancer.

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Survivorship Clinic Serves Patient Needs

Major advances in cancer prevention, early detection and treatment have resulted in longer survival rates after a cancer-free diagnosis. However, surviving cancer can leave a host of problems in its wake.

Survivorship issues are a growing concern and area of interest in the medical community. The National Institutes of Health and the Centers for Disease Control have both identified cancer survivorship as an area for clinical need and research. There are an estimated 60,000 cancer survivors in Nevada and more than 11 million cancer survivors in the United States.

Approximately 65 percent of people diagnosed with cancer are expected to live at least five years after diagnosis, the CDC reports. Cancer survivors are at greater risk for recurrence and for developing second cancers due to the effects of treatment, unhealthy lifestyle behaviors, underlying genetics, or risk factors that contributed to the first cancer. Learning to live an active and healthy lifestyle, along with coordinated ongoing care that takes into account a patient's cancer history, can help maintain health and improve survival and quality of life after a cancer diagnosis.

"There is a large and growing need for this type of service and support for today's cancer survivors," said Karen Milligan, M.D., Nevada Cancer Institute medical oncologist. "As the number of survivors continues to grow, survivorship clinics will become part of standard treatment."

Cancer survivors may face physical, emotional, social, spiritual and financial challenges as a result of their cancer diagnosis and treatment. The



Karen Milligan, M.D.

NVCI Survivorship Clinic focuses on survivorship and quality of life issues such as the coordination of care, patient-provider communication, palliative care, pain management, and healthy and active lifestyles.

At NVCI, care and treatment does not end after a "cancer-free" diagnosis. The Survivorship Clinic is now open to breast cancer survivors for both NVCI patients and non-NVCI patients. The clinic is for breast cancer patients who are no longer receiving chemotherapy or radiation. The Institute's goal is to eventually expand the Survivorship Clinic to include all tumor types.

NVCI's Survivorship Clinic is believed to be the first of its kind in Nevada; it was created to meet a need in the community. The clinic is partly supported by grants through the Lance Armstrong Foundation.

The Survivorship Clinic allows for a patient to interact with multiple specialties. Patients who take part in the Survivorship Clinic meet with Melissa

Morrison, advanced nurse practitioner, for a full comprehensive evaluation and to plan out an after-cancer treatment care plan for the next five, 10 and even 15 years. Rebecca Garrett, M.D., who is board certified in rehabilitation, also meets with patients to assess pain management concerns and rehabilitation after treatment. Patients additionally meet with practitioners from wellness, physical therapy, nutrition services and social services all in one setting. Patients and caregivers focus on the full continuum of care long after cancer treatment has ended.

"There are a lot of Nevadans living with their disease: living with ongoing treatment, side effects of therapy and the long-term consequences of their diagnosis," Dr. Milligan, said.

Karen Milligan, M.D., an oncologist at Nevada Cancer Institute, is focused on breast cancer and gynecological cancers. Dr. Milligan heads NVCI's Survivorship Clinic.

Reducing Toxicity in Cancer Therapy

New options for treating chronic lymphocytic leukemia

Nevada Cancer Institute researcher and oncologist Kenneth A. Foon, M.D., had a paper published in a recent issue of the *Journal of Clinical Oncology* regarding a new, highly effective novel therapy for chronic lymphocytic leukemia.

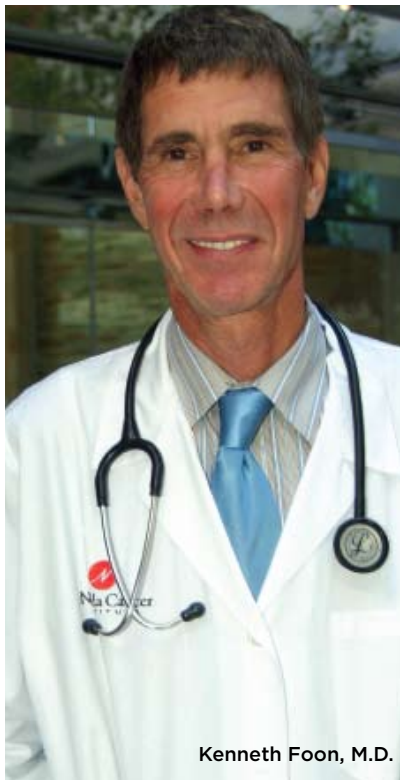
Dr. Foon, chief of Hematological Malignancies and acting director of the Phase I Clinical Trial Program, brings the latest therapies from the lab to the patient.

This paper, titled “Chemoimmunotherapy With Low-Dose Fludarabine and Cyclophosphamide and High Dose Rituximab in Previously Untreated Patients With Chronic Lymphocytic Leukemia,” was published recently in the periodical, *Journal of Clinical Oncology*, (Vol 27, No 4 February 1, 2009) and was also published in the online version of the journal.

The paper reports on a trial designed by Dr. Foon whose purpose was to maintain the high responses but reduce the toxicity of the popular treatment FCR (a combination of two toxic chemotherapy agents, fludarabine and cyclophosphamide, with the less toxic monoclonal antibody rituximab), by decreasing the fludarabine and cyclophosphamide, which Dr. Foon dubbed “FCR-Lite.”

“The study was designed to develop a low toxicity highly effective therapy for this very common disease of an elderly population,” Dr. Foon said.

The article reports that major toxicity to the bone marrow that was seen in 51 percent of cycles of FCR was reduced to only 13 percent of



Kenneth Foon, M.D.

cycles with FCR-Lite, and there was no long-term damage to the bone marrow with FCR-Lite.

The article also reports that 77 percent of patients treated on this trial had complete disappearance of their leukemia. While Dr. Foon does not believe that the patients are cured, not a single patient had any evidence of reoccurrence of their disease, with a follow-up range of one to six years.

Chronic lymphocytic leukemia accounts for about one third of all leukemias and is the most common leukemia in adults. The American

Cancer Society estimates that 15,110 new cases of chronic lymphocytic leukemia were diagnosed in the United States during 2008. About 4,390 people in the United States died of chronic lymphocytic leukemia during 2008.

The trial concluded that FCR-Lite is highly effective in untreated chronic lymphocytic leukemia patients that have not yet been treated with another therapy regimen.

Dr. Foon said many patients with chronic lymphocytic leukemia have been treated with FCR, but it is extremely toxic to the bone marrow. FCR-Lite was specifically designed to maximize the combination of the same two chemotherapy drugs used in FCR, but in decreased doses and to maximize the dose of the less toxic monoclonal antibody rituximab.

“We showed that with FCR-Lite, we not only were able to achieve excellent responses in this patient population, possibly even improving responses over FCR, but we also saw a major reduction in the bone marrow toxicity as compared to FCR,” Dr. Foon said.

The *Journal of Clinical Oncology*, one of the most respected journals in the oncology field, selected Dr. Foon’s paper for an editorial. The journal’s publishers choose only three to four articles among 30 to 40 articles published per issue for editorial comment.

An abstract of the article can be found at: <http://www.jco.ascopubs.org/cgi/content/abstract/27/4/498>

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CME Lectures

In the spirit of discovery and collaboration, Nevada Cancer Institute is dedicated to the advancement of knowledge and education. Our multidisciplinary approach to medicine is an important part of our patient care philosophy. Nevada Cancer Institute generally hosts two CME activities each month. Among our continuing education programs are Tumor Board Presentations and our Grand Rounds Lecture series.

The Tumor Board Presentations and Grand Rounds Lectures that address the current state of care for a particular cancer. These discussions include a presentation of interesting and/or difficult case studies. Nevada Cancer Institute and community physicians have the opportunity to discuss various aspects of these cases including diagnosis with pathology and radiology presentations as well as treatment plans and can also discuss other recommendations for treatment. Nevada Cancer Institute tumor boards also provide valuable medical education for all medical disciplines with the fundamental learning objective of understanding diagnosis, treatment, clinical trial options and outcomes for the specific malignancy discussed.

Scheduled Tumor Board and Grand Round Lectures*

September 18, 2009

Grand Rounds Howard Sandler, M.D., chair of Radiation Oncology, Cedars-Sinai Medical Center, will address issues related to postoperative radiotherapy for prostate cancer.

October 9, 2009

Grand Rounds Leigh Zavel, Ph.D., group leader, Novartis Institute for Biomedical Research and Oncology, Cambridge, Mass. will address issues related to "Development of IAP Antagonists."

October 15, 2009

Rebecca Garrett, M.D., cancer rehabilitation, pain management and palliative care, Nevada Cancer Institute, will address issues related to pain management.

November 19, 2009

Karen Milligan, M.D., medical oncologist, Clinical Oncology and Hematology Services, Nevada Cancer Institute, will address issues related to breast cancer.

December 4, 2009

Grand Rounds Robert Kurman, M.D., professor of Oncology, The Johns Hopkins University School of Medicine, Boston, MA, will discuss "A New Model of Ovarian Carcinogenesis. Lessons from Morphology and Molecular Biology."

December 11, 2009

Grand Rounds Shirish M. Gadgeel, M.D., associate professor, Division of Hematology and Oncology, Karmanos Cancer Center/Wayne State University, will address issues related to lung cancer.

December 17, 2009

Anita Pomerantz, M.D., director of Radiation Oncology Clinical Research, Nevada Cancer Institute, will address issues related to central nervous system tumors.

Nevada Cancer Institute is accredited by the Nevada State Medical Association to provide continuing medical education to physicians. Nevada Cancer Institute designates educational activities for a

maximum of 1.0 AMA PRA Category 1 Credit(s)[™]. Physicians should only claim credit commensurate with the extent of their participation in the activity. The Nevada State Board of Nursing allows licensed nurses to apply CME Category 1 credit toward the renewal of their nursing license.

For exact lecture times or additional information about Nevada Cancer Institute lectures, contact Diane Terrano, CPCS, manager, Continuing Education Program, (702) 822-5163.

* Lectures and topics subject to change without notice.

JOURNAL CLUB

The Nevada Cancer Institute Journal Club meets the second Tuesday of every month, from 6 to 9 pm, usually in the Sunflower Café at the Nevada Cancer Institute. A dinner buffet is provided.

Remaining 2009 Genitourinary Cancer Journal Club's programs will be held in September and November.

Remaining 2009 Breast Cancer Journal Club's programs will be held in October and December.

Journal Club programs are for physicians only.

To learn more about the Journal Club or attend one of these meetings, contact Diane Terrano, CPCS, (702) 822-5163 or email dterrano@nvcancer.org

Nevada Cancer Institute

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