

THE CLINICAL CANCER LETTER

Cancer research news for clinicians

Prostate Cancer

Committee Unblinds Phase III Zytiga Study

An independent data monitoring committee unanimously recommended the unblinding of a phase III study of Zytiga (abiraterone acetate) for the treatment of asymptomatic or mildly symptomatic patients with metastatic castration-resistant prostate cancer who have not received chemotherapy.

The recommendation comes after a planned interim analysis. The study's primary endpoints were radiographic progression-free survival and overall survival. The international, double-blind study, COU-AA-302, enrolled 1,088 patients who were randomized to receive Zytiga plus prednisone, or placebo plus prednisone.

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Cancer Screening

USPSTF and ACS Recommend Less Frequent Cervical Cancer Screenings and Pap Smears

Acting together, the U.S. Preventive Services Task Force and medical specialty groups, including the American Cancer Society, updated their screening guidelines for cervical cancer.

Both sets of guidelines recommend a reduction in the number of screening tests a woman receives. The documents also suggest using the Pap test and human papillomavirus test jointly for women ages 30 to 65.

The USPSTF guidelines are posted at: <http://www.uspreventiveservicestaskforce.org/uspstf/uspsscerv.htm>.

The joint guidelines from ACS, the American Society for Colposcopy and Cervical Pathology, and the American Society for Clinical Pathology are posted at: <http://onlinelibrary.wiley.com/doi/10.3322/caac.21139/pdf>.

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Lung Cancer

Tobacco Control and Prevention Saved 795,000 Lives Between 1975-2000, Study Shows

Tobacco control programs and policies have prevented more than 795,000 deaths from lung cancer in the U.S., from 1975 through 2000, according to an analysis by NCI.

Researchers with the Cancer Intervention and Surveillance Modeling Network used a comparative modeling approach, constructing detailed cigarette smoking histories for individuals born from 1890 to 1970, and then related the histories to lung cancer mortality in mathematical models.

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Independent Data Committee Unblinds Phase III Zytiga Study

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The analysis showed differences in radiographic progression-free survival and overall survival, and secondary endpoints were observed that constitute evidence of clinical benefit. Based on these results, the committee also recommended that patients in the placebo arm be offered treatment with Zytiga.

There was continued evidence of favorable safety in patients receiving abiraterone acetate plus prednisone as compared to those receiving placebo plus prednisone. Zytiga has not been approved for use in men with metastatic CRPC who have not yet received chemotherapy. The company plans to submit for regulatory approval in the U.S. in the second half of this year.

FDA approved Zytiga in combination with prednisone in April 2011 for the treatment of men with metastatic castration-resistant prostate cancer who have received prior chemotherapy containing docetaxel. Zytiga was developed by the Janssen Pharmaceutical Companies of Johnson & Johnson.

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Leukemia

Five-year Childhood ALL Survival Increased To 90.4 Percent by 2005

A study by the Children's Oncology Group reported that five-year survival for acute lymphoblastic leukemia among children treated through COG clinical trials has increased, from 83.7 percent between 1990-1994, to 90.4 percent between 2000-2005.

The improvements in survival were observed among all children over age 1 regardless of age, sex, ethnicity or ALL subtype. The findings showed similar gains in 10-year survival. The study was published in the *Journal of Clinical Oncology*.

Researchers analyzed long-term survival among 21,626 individuals who were treated for ALL between infancy and age 22 in COG clinical trials between 1990 and 2005.

They divided this time period into three eras—1990-1994, 1995-1999, and 2000-2005—that included similar-sized patient groups to examine changes in five- and 10-year survival over time. The study population represents nearly 56 percent of ALL cases estimated to have occurred among individuals in the United States younger than age 20 between 1990 and 2005.

Additionally, researchers found that 10-year survival increased from 80.1 percent between 1990-1994, to 83.9 percent between 1995-1999.

Survival improved significantly in all of the following subgroups: children ages 1-9 years; 10 years and older; 15 years and older; males and females; whites, blacks, and other races; Hispanics, non-Hispanics, and persons of unknown ethnicity; those with B-precursor ALL and T-cell ALL; and those with standard-risk or high-risk disease.

However, five-year survival changed little among infants: with 52.1 percent between 1990-1994 and 50.3 percent between 2000-2005, while the causes of death changed considerably. Death rates from ALL relapse or progression decreased from 43 percent in 1990-1994 to 27.2 percent in 2000-2005, while the incidence of treatment-related deaths increased from 3.9 percent to 13.9 percent during this period.

The development of new drugs for ALL—including methotrexate, cytarabine and 6-mercaptopurine—raised the five-year survival rate from less than 10 percent in the 1960s to approximately 77 percent between 1985 and 1994, said the study.

Individuals treated since then have not necessarily received different drugs, but rather improved combinations and dosing schedules honed over the

years through rigorous clinical trials.

According to the study, advances in supportive care, which can minimize side effects and help treat and/or prevent potentially fatal infections, have also played a vital role in enabling patients to complete their ALL treatments in the optimal time period, leading to better outcomes.

Cancer Screening

USPSTF and ACS Recommend Less Frequent Cervical Screenings

(Continued from page 1)

The groups were working separately, and the simultaneous release of the two screening guidelines was not coordinated far in advance.

The highlights of the USPSTF guidelines follow:

- Screening for cervical cancer should be done in women age 21 to 65 with cytology (Pap smear) every three years or, for women age 30 to 65 who want to lengthen the screening interval, screening with a combination of cytology and HPV testing every five years. This received an “A” recommendation from the USPSTF, which means that there is high certainty that the net benefit is substantial.

- Screening shouldn’t be done in women younger than 21. This received a “D,” which means that there is at least fair evidence that the service is ineffective or that harms outweigh benefits.

- Screening for cervical cancer in women older than 65 who have had adequate prior screening and are not otherwise at high risk for cervical cancer should be avoided. This received a “D” recommendation.

- Similarly, there should be no screening in women who have had a hysterectomy with removal of the cervix and who do not have a history of a high-grade precancerous lesion (cervical intraepithelial neoplasia [CIN] grade 2 or 3) or cervical cancer. (This received a “D.”)

- Screening for cervical cancer with HPV testing, alone or in combination with cytology, in women younger than age 30 should be avoided (This also received a “D”).

The highlights of the ACS, ASCCP and ASCP guidelines follows:

- Women should not be screened before age 21.
- Women 21 to 29 should be screened with the Pap test alone (conventional or liquid-based) every three years. HPV testing should NOT be used for screening in this age group.
- For women 30 and over, the preferred approach

is the Pap test plus HPV testing (“co-testing”) every five years. Continued screening with the Pap test alone (without HPV testing) every three years is an acceptable alternative. While screening with HPV testing alone is promising, at this time it is not recommended for most clinical settings.

- Screening is not recommended for women over age 65 that have had at least three consecutive negative Pap tests or at least two negative HPV tests the last 10 years, with the most recent test in the last five years. Women in this age group who have a history of pre-cancer (CIN2 or a more severe diagnosis) should continue routine screening for at least 20 years.

- Women who have undergone a hysterectomy (with removal of the cervix) for reasons not related to cervical cancer or pre-cancer should not be screened.

- Women who have been vaccinated against HPV should follow the age-specific recommendations in these guidelines (for unvaccinated women).

“Pap tests have been done yearly in the past, but we now know that annual screening is not needed, and in fact can lead to harm from treatment of cell changes that would never go on to cause cancer,” said Debbie Saslow, director of breast and gynecologic cancer at ACS.

“Since 1980, organizations including the ACS have recommended less frequent screening. With the addition of the HPV test, we can test even less frequently, as the risk of pre-cancer and cancer when both tests are negative is so low. With these recommendations, our groups are helping to make sure women get the full lifesaving benefits of screening while minimizing its known harms.”

The USPSTF recommendation updates the 2003 document.

The new guideline differs from the previous recommendation in that it recommends cytology screening every three years among women age 21 to 65 years.

The new recommendation includes more guidance on the appropriate age ranges and frequency of screening, including a new recommendation that women younger than age 21 years not be screened because the evidence shows no net benefit.

The 2003 recommendation suggested that most of the benefit of screening could be obtained by beginning screening within three years of onset of sexual activity or age 21 years (whichever comes first) and screening at least every three years.

The current recommendation includes new evidence on the comparative test performance of liquid-based versus conventional cytology that indicates no

substantial difference in test performance (that is, relative detection or absolute sensitivity or specificity) for detection of CIN2+/CIN3+.

It also includes more guidance on the appropriate use of HPV testing in cervical cancer screening, including a new recommendation that women younger than age 30 years not be screened with HPV testing.

The USPSTF found new evidence that addressed the gaps identified in the previous recommendation and allowed the USPSTF to recommend HPV testing combined with cytology as an acceptable screening strategy for women age 30 to 65 years who prefer to lengthen their screening interval beyond three years.

The ACS guidelines on cervical cancer screening were last updated in 2002. The updated guidelines were first released in draft form in late 2011.

The working groups that created the draft guidelines then met with delegates from 25 organizations to further discuss and finalize the recommendations, which were then adapted into this final guideline.

“Our process resulted in guidelines that are focused on collectively presenting the best patient-centered cervical cancer screening strategies,” said Mark Stoler, past-president of the American Society for Clinical Pathology. “These final recommendations are based on a broad and emerging body of literature, and meld the very latest knowledge on the interplay between new molecular tests and traditional cytology.”

“While these new guidelines reflect relatively small changes over previous screening recommendations, they are important,” said Alan Waxman, incoming president of the American Society for Colposcopy and Cervical Pathology. “The addition of HPV testing to the Pap test in women 30 and over has been shown in recent studies to provide better protection for longer intervals from cancer and pre-cancerous changes than the use of the Pap test alone.”

The process used to develop the ACS recommendations represents a transitional stage in guidelines development, the paper stated.

Earlier guidelines used a consensus process involving experts in the field and key stakeholders, not using a formalized process for evaluating evidence. The group that developed these guidelines also consisted of experts and stakeholders; the key difference was in the use of the principles of the Grading Recommendations Assessment, Development, and Evaluation guideline development process.

Starting this year, ACS will use a new guidelines process, which utilizes a standing group of non-specialists and a formal, pre-specified review process.

Breast Cancer

Study: CYP2D6 Genotypes Are Unreliable Predictors of Benefit

Two studies found that CYP2D6 genotypes were not reliable predictors of clinical responsiveness to adjuvant tamoxifen therapy in postmenopausal women with early-stage breast cancer.

One study also found that CYP2D6 genotypes of reduced enzyme activity were not linked with fewer tamoxifen-induced hot flashes in patients. The studies were published in JNCI.

Pharmacogenetic testing of CYP2D6 polymorphisms to identify patients with reduced tamoxifen metabolism phenotypes has been recommended, as testing may predict a poorer response to tamoxifen therapy, to help with treatment decision-making.

Studies have proposed that metabolic conversion of tamoxifen to endoxifen by CYP2D6 is essential for a patient to benefit from tamoxifen therapy, leading to a trend of CYP2D6 genotyping among patients.

In one study, researchers obtained tumor tissues from postmenopausal breast cancer patients who participated in the Breast International Group 1-98 trial between March 1998 and May 2003 and received adjuvant tamoxifen and/or letrozole. They isolated DNA from these tissues, performed CYP2D6 genotyping, and based on the genotype combinations, categorized the CYP2D6 metabolism phenotypes as poor, immediate, and extensive metabolizers.

They found that CYP2D6 phenotypes of reduced enzyme activity were not associated with worse disease control, but were associated with increased tamoxifen-induced hot flashes, contrary to the prevalent hypothesis.

Hot flashes are a commonly-reported side effect from tamoxifen, and it has been suggested that women who do not experience hot flashes may not be getting the full benefit of the drug because their body does not metabolize it adequately.

In the second study, researchers examined postmenopausal, hormone receptor-positive early-stage breast cancer patients from the UK population of the “Arimidex Tamoxifen, Alone or in Combination” clinical trial, who received tamoxifen or anastrozole and were genotyped for CYP2D6 variants.

UGT2B7 was also genotyped due to its known gene product which inactivates endoxifen. Patients were assigned a CYP2D6 activity score based on the genotype, and classified as poor, intermediate, and

extensive metabolizer phenotypes.

The researchers found that the CYP2D6 genotype showed no association with disease recurrence rates, and phenotypes indicating reduced CYP2D6 enzyme activity were not found to be connected with worse disease outcomes.

The researchers also reference the results found in the BIG 1-98 trial, saying that, “Taken together, these represent a high level of evidence demonstrating that CYP2D6 genotyping should not be recommended for such patients and that there is no need to avoid CYP2D6 inhibitors in postmenopausal patients taking tamoxifen.”

In an accompanying editorial, the authors advocate “large confirmatory studies...for decisions regarding the use of therapeutic agents,” and “data from randomized clinical trials for clinical demonstration of associations between biomarkers and disease outcomes.”

Study: Freezing Secondary Tumors Helpful in Metastatic Breast Cancer

A study found that percutaneous cryoablation treatment for metastatic breast cancer could be used to halt individual spots of remaining metastatic disease by freezing and destroying tumors.

The study was presented at the annual scientific meeting of the Society of Interventional Radiology.

“If you envision cancer treatment as a three-legged stool, you have radiation therapy, surgery and chemotherapy,” said Peter Littrup, director of imaging core and radiology research at the Karmanos Cancer Institute. “When you get to the point of metastatic disease, you end up managing people whose treatments have failed. We are introducing the fourth leg on the stool of cancer care: tumor ablation.”

Cryoablation involves the use of probes inserted by catheter. The probes release pressurized argon gas to freeze the tumor, effectively killing the cancerous tissue. Helium gas is then pumped in to help release the needle.

This process is guided by CT or ultrasound, which capture the procedure by picking up the distinct densities between the normal tissues and frozen cancer tissue; the ice ball can be seen as a clearly defined darker mass, as it has a lower density than the surrounding tissue.

This treatment could provide a valuable alternative to other spot-therapies because there is minimal damage to surrounding healthy tissues and the side effects and recovery time are dramatically reduced when compared to those of other therapies, said Littrup.

For the study, eight people with nine tumors

received percutaneous cryoablation procedures guided with CT, ultrasound or a combination of both methods. Six of the eight subjects had formerly undergone at least a single mastectomy prior to treatment.

Secondary tumors were found in the liver, lungs and kidneys. There were no serious complications and all procedures were considered successful. All individual tumors remaining in the body were found and the local cancer did not recur.

The median overall survival for those in the study was 46 months, with 25 percent surviving five years past treatment.

“This therapy provides a minimal rate of cancer recurrence and no major complications, making these ice balls ideal for targeting metastatic tumors that are limited in number and location,” said Littrup.

“This is a preliminary study, and at this point we’re hoping that the evidence could be a stepping stone for a bigger study to look at more patients. If we can get more data that supports percutaneous cryoablation for metastatic breast cancer, it could be a huge finding.”

Women Who Received CMF Chemotherapy Score Lower On Cognitive Skill Exams

Women who underwent a chemotherapy regimen of cyclophosphamide, methotrexate and 5-fluorouracil between 1976 and 1995 were found to score slightly lower on cognitive tests that measure word learning, memory and information processing speed than women without a history of cancer, a study showed.

The CMF regimen is no longer the standard of care for breast cancer. The findings indicated that cognitive problems, known to occur shortly after treatment, may also be observed 20 years after treatment. The study was published in the *Journal of Clinical Oncology*.

Researchers compared the results of neuropsychological tests among 196 women with breast cancer who had received CMF chemotherapy in six cycles following surgery between 1976 and 1995 against those of women without cancer. Participants were assessed between November 2009 and June 2010.

In addition to the neuropsychological examination, participants were also assessed for depression and self-perceived memory problems. The control group included 1,509 women who were enrolled in the Rotterdam Study—which is exploring risk factors for disease in the elderly—and who underwent the same neuropsychological tests and assessments. All women

included in the current study were between the ages of 50 and 80 when they were first enrolled.

“To our knowledge, this is the first study to suggest that subtle cognitive deficits may be among the long-term effects of chemotherapy, especially of the earlier regimens,” said one senior author, Sanne Schagen, a group leader at the Department of Psychosocial Research and Epidemiology at the Netherlands Cancer Institute/Antoni van Leeuwenhoek Hospital in Amsterdam.

“Our findings do not suggest that breast cancer survivors treated with CMF chemotherapy need to be monitored more closely for cognitive difficulties. But if breast cancer patients experience cognitive problems, information about the possible long-term effects of their breast cancer treatment may help to guide referral to appropriate support services.”

Animal studies have demonstrated that 5-fluorouracil, methotrexate and cyclophosphamide are associated with impaired learning and memory and changes in brain structure. Cyclophosphamide and 5-fluorouracil are still commonly incorporated in modern chemotherapeutic regimens for breast cancer.

Three Studies Demonstrate Oncotype DX Test Effectiveness

Three Oncotype DX studies were presented at the European Breast Cancer Conference in Vienna, Austria, including data of the test’s cost-effectiveness in the German and Hungarian healthcare systems, and Israeli data showing the test’s impact on treatment decisions in early-stage invasive breast cancer patients with lymph-node positive status.

“As international use of the Oncotype DX breast cancer test increases, it’s important to not only have strong clinical data, but also to demonstrate that using the test is cost effective in different healthcare systems,” said Christer Svedman, director of medical affairs in Europe for Genomic Health Inc.

The results of the German prospective study involved 366 patients, and showed that use of the Oncotype DX changed initial recommendations in 33 percent of cases, and demonstrated that using the test would be associated with an increased survival and be cost effective in Germany.

A health economics analysis from Hungary finds that Oncotype DX compares favorably with other oncology-related health technologies being utilized in the country, and that using the Oncotype DX assay is likely to be cost effective in Hungary.

In an evaluation of the relationship between

Recurrence Score results and treatment decisions in patients with estrogen receptor-positive, node-positive, breast cancer in Israel, researchers found that patients who had the Oncotype DX test were less likely to be recommended chemotherapy compared to patients who did not have the test, even when adjusting for variables such as grade and nodal status ($p < 0.001$).

The study included 282 patients who received the Recurrence Score and 669 control patients who did not receive the test.

Multiple studies conducted in Germany, Spain, the United Kingdom, Israel, Japan, Australia, and the United States have shown the use of the test to change treatment decisions in approximately 30 percent of patients.

Lung Cancer

NCI Estimates 2.5 Million Lives Saved If All Smoking Ceased in 1964

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The researchers were able to estimate the impact of changes in smoking patterns resulting from tobacco control activities on lung cancer deaths.

Following the first Surgeon General’s report on smoking and health in 1964, U.S. tobacco control efforts have included limits on underage access to cigarettes, increases in cigarette excise taxes, restrictions on smoking in public places, and public awareness campaigns on the dangers of smoking.

NCI researchers estimate that if all cigarette smoking in the U.S. had ceased following the release of the 1964 report, a total of 2.5 million people would have been spared death due to lung cancer in the following 36 years. The researchers found that between 1975 and 2000, there were 2,067,775 lung cancer deaths among men and 1,051,978 lung cancer deaths among women. The study results were published in JNCI.

“These findings provide a compelling illustration of the devastating impact of tobacco use in our nation and the enormous benefits of reducing rates of smoking,” said Robert Croyle, director of the Division of Cancer Control and Population Sciences at NCI. “Although great strides have been made, we cannot relax our efforts. The prevention and cessation of tobacco use continue to be vital priorities for the medical, scientific, and public health communities.”

In the study, the researchers created three scenarios.

In the first, called actual tobacco control, they used data on actual smoking behaviors of men and women in the U.S. The second, called no tobacco control, predicted smoking behaviors that would have existed if no tobacco

control policies were put in place. In the third, called complete tobacco control, the researchers examined the possible outcome if all smoking in the United States had ceased as of 1965.

The difference between lung cancer deaths in the no tobacco control scenario and the numbers of actual lung cancer deaths provided an estimate of the numbers of lung cancer deaths averted as a result of tobacco control activities.

The researchers estimated that, without tobacco control programs and policies, an additional 552,000 men and 243,000 women would have died of lung cancer in the period from 1975 through 2000.

Similarly, if tobacco control efforts had been completely successful, an additional 1.7 million lung cancer deaths would have been averted from 1975 through 2000. In total, if all smoking had ceased completely in 1965, as many as 2.5 million fewer people would have died from lung cancer—1.6 million men and 883,000 women.

Smoking rates have continued to fall since 2000, dropping from 23.2 percent to 20.6 percent in 2008, and leveling off in recent years. Previous research indicated that much of this decrease can be attributed to tobacco control policies. Additionally, rates of other smoking-related cancers and diseases have declined, due to tobacco control.

The researchers noted the limitations of the study, namely that the numbers don't reflect the effects of non-cigarette forms of tobacco use. However, they said, "continued implementation of evidence-based tobacco control policies, programs, and services remains the most promising approach to reducing the burden of lung cancer."

Colorectal Cancer **ACG Highlights Link Between Obesity and Colorectal Cancer**

The American College of Gastroenterology is joining forces with the Campaign to End Obesity to highlight the link between higher body mass index and colorectal cancer. March is Colorectal Cancer Awareness Month.

Their goal is to educate the public about obesity as a major risk factor for the disease, and about the importance of colorectal cancer screening.

"Dietary and other modifiable risk factors may account for as many as 90 percent of colorectal cancers, and recent studies suggest that about one-quarter of colorectal cancer cases could be avoided by following

a healthy lifestyle," explained ACG President Lawrence Schiller.

"Screening is one of the most powerful weapons at-hand for preventing colorectal cancer and obesity," said Stephanie Silverman, co-founder of the Campaign to End Obesity.

The association between metabolic syndrome and colorectal cancer mortality, and type-2 diabetes mellitus and colorectal cancer risk, suggests that obesity-induced insulin resistance and hyperinsulinemia may have a role in the development of colorectal cancer.

The ACG recommends that men and women at average risk for colorectal cancer begin screening at age 50. African-Americans should begin colorectal cancer screening at 45. The college's 2009 colorectal cancer screening guidelines distinguish between cancer prevention tests and cancer detection tests, with prevention tests preferred over detection tests.

According to the college, colonoscopy every 10 years is the preferred colorectal cancer prevention test.

Ovarian Cancer **Olaparib Study Demonstrates No Changes In Overall Survival**

An interim analysis of a phase II study of maintenance treatment with olaparib in women with platinum-sensitive, relapsed, serous ovarian cancer showed no difference in overall survival, after previously displaying improvements in progression-free survival.

Olaparib is a PARP inhibitor, and was given at 400 mg twice daily. Patients had received more than two previous platinum regimens and had a complete response or maintained partial response after their last platinum-containing regimen.

The study was previously presented in June 2011 at the annual meeting of the American Society of Clinical Oncology. Compared to placebo, olaparib increased median PFS from 4.8 to 8.4 months (HR=0.35 [95% CI 0.25-0.49, $p < 0.00001$]).

The interim analysis was presented at the Society of Gynecologic Oncology's annual meeting March 27. The new data showed median overall survival in the olaparib group was 29.7 months compared to 29.9 months in the placebo group. Deaths had occurred in 38 percent of patients.

At the time of analysis, 21 percent of patients in the olaparib arm remained on study, compared to 3 percent of patients in the placebo arm.

Metastatic Melanoma **Zelboraf Increased Overall Survival To 15.9 Months in Phase II Study**

Results from a phase II study in patients with metastatic melanoma showed that Zelboraf (vemurafenib) increased median overall survival to 15.9 months, over the typical survival of six to 10 months.

A total of 132 patients with stage IV, BRAF-positive melanoma were enrolled in the trial, all of which received at least one form of systemic treatment before enrollment.

The results showed that 47 percent of patients had a partial response to the drug and 6 percent exhibited a complete response, for an overall response rate of 53 percent. In patients that responded, vemurafenib stopped cancer progression for a median 6.7 months. The study was published in the *New England Journal of Medicine*.

"This study confirms what we have discovered in our earlier trials. Many of our patients are exhibiting a strong, immediate response to this drug and some are living significantly longer, with manageable side effects," said co-principal investigator Jeffrey Sosman, professor of medicine at Vanderbilt University Medical Center. "It was interesting to note that a few of the patients were treated with the drug for up to six months before showing convincing evidence of response."

"This study shows that Zelboraf changes the natural history of the disease," said Atoni Ribas, co-principle investigator and professor of hematology/oncology at UCLA's Jonsson Comprehensive Cancer Center. "These results tell us that this drug is having a very big impact, and this changes the way we treat metastatic melanoma."

Vemurafenib is an FDA-approved oral drug which works as a kinase inhibitor of the BRAF V600 mutation. Approximately half of all patients with metastatic melanoma have a BRAF V600 mutation in their tumor.

While vemurafenib induced clinical responses in a significant number of BRAF-positive patients when it was approved last year, the initial clinical trials had not followed patients long enough to determine overall survival.

Twenty-six percent of patients developed cutaneous squamous-cell carcinomas, which were surgically removed. The most common side effects were joint pain, rash, sun sensitivity, fatigue and hair loss. Zelboraf was developed by Plexxikon and Hoffman-La Roche.

Trials Approved by NCI CTEP For the Month of March

The National Cancer Institute Cancer Therapy Evaluation Program approved the following clinical research studies last month. For further information, contact the principal investigator listed.

Phase I

9030: A Phase 1 Study of Reolysin Alone in Patients with Relapsed or Refractory Multiple Myeloma. Ohio State University Medical Center; Hofmeister, Craig. (614) 293-3507

9076: Pharmacokinetic-Driven Individualization of Pazopanib Therapy in Patients with Solid Tumors: a Phase I. Mayo Clinic; Bible, Keith Christopher. (507) 284-2511

9127: Phase I Trial of Oral 5-Fluoro-2'-Deoxycytidine with Oral Tetrahydrouridine in Patients with Advanced Solid Tumors. National Cancer Institute Developmental Therapeutics Clinic; Doroshow, James H. (301) 496-4291

ADVL1115: A Phase 1 Study of AMG 386 (IND# 114215), an Angiopoietin Neutralizing Peptibody, in Children with Relapsed or Refractory Solid Tumors, Including CNS Tumors. COG Phase 1 Consortium; Leary, Sarah E.S. (206) 987-2106

Phase II

8872: A Phase 2 Study of OSI-906 in Patients with Asymptomatic or Mildly Symptomatic (Non-Opioid Requiring) Metastatic Castrate Resistant Prostate Cancer (CRPC). Cleveland Clinic Foundation; Garcia, Jorge A. (216) 444-7774

8873: Randomized Phase II Study of Single Agent OSI-906, an Oral, Small Molecule, Tyrosine Kinase Inhibitor (TKI) of the Insulin Growth Factor-1 Receptor (IGF-1R) Versus Topotecan for the Treatment of Patients with Relapsed Small Cell Lung Cancer (SCLC). Moffitt Cancer Center and Research Institute; Chiappori, Alberto A. (813) 745-3050

ACOSOG-Z11102: Impact of Breast Conservation Surgery on Surgical Outcomes and Cosmesis in Patients with Multiple Ipsilateral Breast Cancers (MIBC). American College of Surgeons Oncology Trials Group; Boughhey, Judy C. Szemere. (507) 284-8392

ANUR1131: Music Video for AYA-Parent Communication and Resilience. Children's Oncology Group; Haase, Joan E. 317-278-7749

GOG-0280: A Phase II Evaluation of the Potent, Highly Selective Poly (ADP-Ribose) Polymerase (PARP)-1 and -2 Inhibitor Veliparib (ABT-888) (IND#77840) (NSC #737664) in the Treatment of Persistent or Recurrent Epithelial Ovarian, Fallopian Tube, or Primary Peritoneal Cancer Patients Who Carry a Germline BRCA1 or BRCA2 Mutation. Gynecologic Oncology Group; Coleman, Robert L. (713) 745-3357

Phase III

GOG-0275: A Phase III Randomized Trial of Pulse Actinomycin-D Versus Multi-Day Methotrexate for the Treatment of Low-Risk Gestational Trophoblastic Neoplasia. Gynecologic Oncology Group; Schink, Julian C. (312) 472-4684

GOG-0277: A Phase III Randomized Trial of Gemcitabine (NSC# 613327) Plus Docetaxel (NSC# 628503) Followed by Doxorubicin (NSC# 123127) v. Observation for Uterus-Limited, High Grade Uterine Leiomyosarcoma. Gynecologic Oncology Group; Hensley, Martee Leigh. (212)639-6902

NCCTG-N11C5: A Phase III, Randomized, Double-Blind Study of Lactobacillus brevis CD2 Lozenges versus Placebo in the Prevention of Acute Oral Mucositis (OM) in Patients with Head and Neck Cancer Receiving Concurrent Radiotherapy and Chemotherapy. North Central Cancer Treatment Group; Miller, Robert C. 507-284-4827

NSABP-B-49: A Phase III Clinical Trial Comparing the Combination of Docetaxel Plus Cyclophosphamide to Anthracycline-Based Chemotherapy Regimens for Women with Node-Positive or High-Risk Node-Negative, HER2-Negative Breast Cancer. National Surgical Adjuvant Breast and Bowel Project; Flynn, Patrick James. (612) 884-6300

RTOG-1115: Phase III Trial of Dose Escalated Radiation Therapy and Standard Androgen Deprivation Therapy (ADT) with a GNRH Agonist vs. Dose Escalated Radiation Therapy and Enhanced ADT with a GNRH Agonist and TAK-700 For Men with High Risk Prostate Cancer. Radiation Therapy Oncology Group; Michaelson, M. Dror. (617) 726-1594

S1200: Randomized Blinded Sham-And Waitlist-Controlled Trial of Acupuncture for Joint Symptoms Related to Aromatase Inhibitors in With Early Stage Breast Cancer. Southwest Oncology Group; Hershman, Dawn Lauryn. (212) 305-1945

Other Phases

AALL12B1: Next-Generation Sequencing of Immunoglobulin Heavy Chain Variable Region to Identify Previously Undetectable Minimal Residual Disease in Children with Acute Lymphoblastic Leukemia with Prognostic Significance. Children's Oncology Group; Lacayo, Norman James. (650) 723-5535

AALL12B3: Replication Profiling as a Diagnostic Tool in B-cell Acute Lymphoblastic Leukemia (ALL). Children's Oncology Group; Gilbert, David M. (850) 645-7583

ARAR12B1: Using New Approaches for Genomics Studies in Pediatric Adrenocortical Tumors: Whole Genome Sequencing; Deep Sequencing; miRNA; methDNA and SNP 6.0. Children's Oncology Group; Zambetti, Gerard. (901) 595-3429

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