



**Research**

**PANCREATIC CANCER ACTION NETWORK**

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## PANCREATIC CANCER: NEWS & UPDATES

February 2010

### **Predicting Prognosis and Treatment Response in Subset of Pancreatic Cancer Patients**

<http://www.cancer.ucla.edu/Index.aspx?page=644&recordid=322&returnURL=%2findex.aspx>

<http://www.acor.org/news/display.html?id=9276>

Dr. David Dawson, Assistant Professor in the Department of Pathology and Laboratory Medicine at UCLA, and recipient of a 2008 Pancreatic Cancer Action Network Career Development Grant, had a senior authorship paper released in the *Journal of Clinical Oncology*. Findings indicate that specific chemical modifications to proteins called histones, which are found in the nucleus of cells and act as spools around which DNA is wound, can be used to predict prognosis and response to treatment in subsets of patients with pancreatic cancer. High levels of two specific histone modifications found in tumor cells of patients who underwent surgical resection of their pancreatic cancer predicted those patients would be more likely to derive survival benefit from the commonly-used chemotherapy drug Fluorouracil.

### **Inflammation Marker Related to Obesity Is Elevated in Patients with Pancreatic Cancer**

<http://www.acor.org/news/display.html?id=9250>

<http://www.sciencedaily.com/releases/2010/02/100203121544.htm>

Research presented at the recent 5th Annual Academic Surgical Congress reports that levels of an inflammatory chemokine were significantly elevated in patients with pancreatic cancer who were extremely obese. Hwyda Arafat, MD, PhD, at Thomas Jefferson University, and colleagues sought to identify whether MCP-1 could serve as a marker for pancreatic cancer, and a differentiation marker between benign and malignant lesions. They analyzed the MCP-1 levels in serum samples obtained from patients with confirmed pancreatic adenocarcinoma or intraductal papillary mucinous neoplasms (IPMN). They found that the levels of MCP-1 were significantly elevated in extremely obese patients. In the less obese population, the MCP-1 levels were elevated only in patients with pancreatic adenocarcinoma. In IPMN patients, high levels of MCP-1 also correlated with older age. Researchers conclude that MCP-1 has potential as a biomarker for pancreatic cancer, but this needs to be confirmed in a larger sample size and different benign and unresectable malignant lesions.

### **Health Discovery Corporation Partners with Saint Vincent Catholic Medical Center to Develop a New Test for the Early Detection of Pancreatic Cancer**

[http://www.marketwatch.com/story/health-discovery-corporation-partners-with-major-new-york-city-pancreatic-cancer-center-to-develop-a-new-molecular-diagnostic-test-for-the-early-detection-of-pancreatic-cancer-2010-02-05?reflink=MW\\_news\\_stmp](http://www.marketwatch.com/story/health-discovery-corporation-partners-with-major-new-york-city-pancreatic-cancer-center-to-develop-a-new-molecular-diagnostic-test-for-the-early-detection-of-pancreatic-cancer-2010-02-05?reflink=MW_news_stmp)

Health Discovery Corporation has entered into an exclusive agreement with the Pancreas, Biliary and Liver Surgery Center of New York at Saint Vincent Catholic Medical Centers in New York City to develop new molecular diagnostic tests for the early detection of pancreatic cancer. Under the terms of the agreement, the Pancreas, Biliary and Liver Surgery Center will provide all specimens from their collected specimen banks, specimens on all new patients and all associated clinical and outcomes data. The specimens will include tissue, blood and urine. Health Discovery Corporation will use its patent protected SVM-based discovery technology and expert science team to develop these new molecular diagnostic tests for pancreatic cancer in a similar fashion to the urine-based prostate cancer test they developed..

### **40% of Cancers Could be Prevented**

<http://www.msnbc.msn.com/id/35199608/ns/health-cancer/>

A report by the Geneva-based International Union Against Cancer (UICC) stated that 40% of the 12 million people annually diagnosed with cancer worldwide could avert the killer disease by protecting themselves against infections and changing their lifestyles. This would require the deployment of full immunization and prevention measures, combined with simple lifestyle changes, like quitting smoking, eating healthy, limiting alcohol intake and reducing sun exposure.

### **44% Say 'Breakthrough' Cancer Pain Uncontrolled**

<http://www.webmd.com/cancer/news/20100204/44percent-say-breakthrough-cancer-pain-uncontrolled>

Nearly half of patients suffering breakthrough cancer pain -- intense bouts of crippling pain -- say treatment does not offer adequate relief. On average, patients rate the pain as 7.4 on a 10-point scale where 10 is the worst pain imaginable. Over half of patients rank the pain as 8, 9, or 10, according to a Harris survey commissioned by the American Pain Foundation. Patients need effective pain management, yet over half say their doctors tell them that breakthrough cancer pain is a normal part of cancer or its treatment.

### **Rice University Physicists Kill Cancer with 'Nanobubbles'**

<http://www.acor.org/news/display.html?id=9253>

Using lasers and nanoparticles, scientists at Rice University have discovered a new technique for singling out individual diseased cells and destroying them with tiny explosions. The scientists used lasers to make "nanobubbles" by zapping gold nanoparticles inside cells. In tests on cancer cells, they found they could tune the lasers to create either small, bright bubbles that were visible but harmless, or large bubbles that burst the cells.

### **Sugary Soda Linked to Pancreas Cancer**

[http://www.eurekalert.org/pub\\_releases/2010-02/aafc-sdc020310.php](http://www.eurekalert.org/pub_releases/2010-02/aafc-sdc020310.php)

<http://www.msnbc.msn.com/id/35294516/ns/health-cancer/>

<http://www.usnews.com/health/diet-fitness/diabetes/articles/2010/02/08/soft-drinks-could-boost-pancreatic-cancer-risk.html>

People who consume two or more soft drinks a week were 87% more likely to develop pancreatic cancer than non-soda drinkers, new research suggests. Noel Mueller, lead author of a study appearing in the February issue of *Cancer Epidemiology, Biomarkers and Prevention* stated, "We can't speculate too much on the mechanism because this is an observational study, but the increased risk may be working through effects of the hormone insulin." Previous research in US and European populations has suggested an association between sweetened sodas and juices and pancreatic cancer. This is the first study to examine the association in an Asian population, although the authors feel the findings can be extrapolated to Western nations.

### **Direct-Injection Vaccine Combo Tested for Pancreas Cancer**

<http://www.cinj.org/PressReleases/PANVAC.html>

<http://www.newswise.com/articles/view/561234?print-article>

Dr. Poplin of Cancer Institute New Jersey is the lead researcher on a NCI-sponsored trial that is studying an investigational vaccine known as PANVAC in locally advanced unresectable pancreatic cancer or in cases with minimal spread beyond the pancreas. Two types of PANVAC will be utilized in the two-year study, which will test approximately a dozen patients whose pancreatic cancer cannot be removed through surgery. PANVAC-V, which uses the same virus as the smallpox vaccine, is a live but weakened vaccinia vaccine that will be given in the arm. PANVAC-F (a live Fowlpox virus that cannot multiply) would be injected into the arm and into the tumor itself.

### **NewLink Genetics Receives Special Protocol Assessment Approval from FDA for Phase 3 Trial**

<http://www.prnewswire.com/news-releases/newlink-genetics-receives-special-protocol-assessment-approval-from-fda-for-pivotal-phase-3-trial-in-pancreatic-cancer-84137377.html>

NewLink Genetics Corporation has reached agreement with the US Food and Drug Administration under the Special Protocol Assessment process for a pivotal Phase 3 trial of its HyperAcute immunotherapy in pancreatic cancer. The Phase 3, multicenter, open label, controlled study will enroll up to 680 previously untreated patients with resected pancreatic cancer. The patients will be randomly assigned on a 1:1 basis to either the current standard of care, or the current standard of care plus the HyperAcute pancreatic cancer immunotherapy.

### **Drug Created to Keep Tumor Growth Switched Off**

<http://www.acor.org/news/display.html?id=9277>

<http://www.sciencedaily.com/releases/2010/02/100211175217.htm>

Researchers at the Moores Cancer Center at the University of California, San Diego, have found a drug that binds to a molecular "switch" found in cancer cells and cancer-associated blood vessels to keep it in the "off" position. This novel strategy has resulted in a new drug that stops kidney and pancreatic tumors

from growing in mice. The researchers report that they locked the kinase switch in the off position in cancer and in tumor-associated blood vessels which differs from the way current inhibitors attempt to block active kinases.

### **Advanced Pancreatic Carcinoma: Current Treatment and Future Challenges**

<http://cme.medscape.com/viewarticle/715454?src=cmemp&uac=61043SJ>

Drs. Stathis and Moore review the current standards of care for patients with locally advanced and metastatic pancreatic carcinoma and outline some future directions for the development of new treatment strategies.

### **Research Team Targets Self-Cannibalizing Cancer Cells**

<http://www.medicalnewstoday.com/articles/179044.php>

Cancer Institute of New Jersey has embarked on a major new project to unravel the secret lives of cancer cells that go dormant and self-cannibalize to survive periods of stress. Their work may help produce new cancer therapies to stem changes that render cancer cells dangerous and resistant to treatment.

### **Use of Systemic Therapy**

<http://www.wjnet.com/1007-9327/16/673.pdf>

This review focuses on the use of systemic therapy for advanced and metastatic pancreatic cancer, including a summary of the results of several recent clinical trials. The authors also discuss the studies implications for clinical practice and briefly address the second-line chemotherapy options for advanced pancreatic cancer.

### **ALDH Associated with Worse Overall Survival in Patients with Pancreatic Adenocarcinoma**

<http://www.acor.org/news/display.html?id=9291>

Expression of aldehyde dehydrogenase (ALDH) in pancreatic adenocarcinoma is associated with worse overall survival in patients who have undergone resection for early-stage disease (median survival for patients with ALDH-positive tumors was 14 months vs 18 months for patients with ALDH-negative tumors), according to a new study published online February 17 in the *Journal of the National Cancer Institute*. ALDH activity characterizes normal stem cells and cancer stem cells (CSCs) in several human malignancies, including pancreatic adenocarcinoma. Researchers report these results provide evidence for the clinical significance for cancer stem cells in pancreatic adenocarcinoma and may explain how the detection of these cells in primary tumors may result in shortened overall survival.

### **Scientists Spot Genetic 'Fingerprints' of Individual Cancers**

<http://www.msnbc.msn.com/id/35464942/ns/health-cancer/>

[http://www.nlm.nih.gov/medlineplus/news/fullstory\\_95448.html](http://www.nlm.nih.gov/medlineplus/news/fullstory_95448.html)

<http://www.webmd.com/cancer/news/20100218/new-test-tells-if-cancers-coming-back>

A personalized blood test can tell whether a patient's cancer has spread or come back, offering a better way to see if treatments are working, Johns Hopkins researchers report. The study looked at six sets of normal and cancerous tissue from four colorectal and two breast cancer patients and mapped out the genetic code in each. In the cancer samples, the team looked for areas in the genetic code where there were extra DNA copies, or where sections of chromosomes had fused together, and found about nine rearrangements in every sample that are not present in normal tissue. Once they identified a genetic signature of the tumor, they looked in patients' blood to see if they could find remnants of DNA that had been shed from the tumor. The researchers think the blood tests could be used in cancer patients to detect tumors before they grow big enough to be spotted on imaging machines and could be available to a broad number of patients within two years.

### **Sorting the Drivers from the Passengers in the Cancer Genome**

<http://www.acor.org/news/display.html?id=9289>

A new study of mutations in cancer genomes shows how researchers can begin to distinguish the 'driver' mutations that push cells towards cancer from the 'passenger' mutations that are a by-product of cancer cell development. The study also shows that at least one in nine genes can be removed without killing human cells. Many cancer genomes are riddled with mutations. The vast majority of these are likely to be passengers – mutations that don't contribute to the development of cancer but have occurred during the growth of the cancer – while a small minority are the critical drivers. The challenge of efficiently picking out the guilty drivers in the huge identification parade presented by the set of abnormalities found in a cancer genome is yet to be fully answered.

## **Chemical Tags Likely to Affect Metabolism, Cancer Development**

<http://www.acor.org/news/display.html?id=9295>

Differences in metabolic rates are known to exist between normal cells and tumor cells, though the mechanism behind it is unclear. New research from the University of North Carolina at Chapel Hill suggests that the addition or removal of a certain type of chemical tag, called an acetyl group, onto metabolic enzymes plays a key role in how cellular metabolism is regulated. The finding, gives researchers vital clues to understand how normal cells respond to nutrient changes and the process by which normal cells turn cancerous, and could one day lead to new drugs that starve cancer cells into submission. If they can identify which enzyme(s) are responsible for the difference in metabolism between normal and tumor cells, then they could have new targets for treating cancer patients.

## **FDA Cancer Drug Approval Rate Highlighted In JNCI**

<http://www.medicalnewstoday.com/articles/179668.php>

The US Food and Drug Administration's Office of Oncology Drug Products approved more than 50 new indications for the use of oncology and hematology drugs and biologics between July 2005 (when the office began reviewing marketing applications) and the end of 2007, according to a new agency study.

### ***Notable Abstracts:***

#### **Allergies, Obesity, Other Risk Factors and Survival from Pancreatic Cancer**

Risk factors for pancreatic cancer include smoking, high body mass index, family history of pancreatic cancer, and long-standing diabetes. In contrast, allergies are associated with reduced risk; little is known about the association between these factors and survival. Researchers analyzed overall survival in relation to risk factors for 475 incident cases who took part in a hospital based case-control study. Patients who did (160) and did not (315) undergo tumor resection were studied. In patients without resection, those with self-reported allergies survived significantly longer than those without allergies. Obesity was nonsignificantly associated with poorer survival, particularly in the resected group. The mechanisms underlying the association between history of allergies and improved survival are unknown and need to be confirmed in other studies

#### **Progress for Resectable Cancer?**

Adherence to guideline-directed care is improving in the US. However, the pace is slow, and overall survival has yet to be impacted significantly. Both increased use of adjuvant therapy and the development of more promising systemic treatments are necessary to improve survival for patients with resectable pancreatic cancer.

#### **Irinotecan Plus Bolus/Infusional 5-Fluorouracil and Leucovorin**

This study demonstrated that the second-line FOLFIRI regimen was able to induce an objective response in a relatively small fraction of patients with gemcitabine-refractory adenocarcinoma of the pancreas. The use of second-line chemotherapy should be carefully proposed to patients with good performance status or those who had a good response to first-line therapy.

#### **Cigarette Smoking as a Cause of Cancers Other Than Lung Cancer**

Cigarette smoking is causally related to several cancers, in particular lung cancer, yet for some cancers there are inconsistent associations. This study investigates the association of smoking with other cancers by correlating them with the regional incidence rates for lung cancer, which was used as a proxy for cigarette smoking. Cancers that have shown a strong correlation with cigarette smoking also demonstrate a strong correlation with lung cancer. These cancers included urinary bladder, laryngeal, esophageal, colorectal, and kidney cancer. A number of cancers showed a weak association with cigarette smoking, such as pancreatic and liver cancer.

#### **Second-Look Operation in Pancreatic Carcinoma Previously Assessed as Unresectable**

Researchers report on 17 patients who were judged during exploratory laparotomy to have unresectable pancreatic cancer at another institution but upon review by the study authors the patients underwent a second-look operation after referral to their hospital. During the second-look operation, 13 patients (76.5%) underwent tumor resection. Mean survival in patients after tumor resection was increased, reaching 17.6 months compared to 6.5 months in patients with unresectable pancreatic cancer. The researchers suggest that the prediction of resectability depends highly on the experience of the surgical team, as the majority of patients considered unresectable during prior laparotomy at another institution (76.5%) were found in fact to suffer from a resectable tumor disease. Moreover, most of them (69%)

underwent complete (R0) -tumor removal. Thus, complex visceral operations like pancreatic carcinoma resection should preferably be performed in high-volume centers exclusively.

### **Racial and Ethnic Differences in the use of High-Volume Hospitals and Surgeons**

This study examined racial/ethnic differences in the use of high-volume hospitals and surgeons for ten surgical procedures (including pancreatic resection), and documented associations between volume and mortality. New York City area hospital discharge data for the time period 2001-2004 were studied. Adults were examined from four racial/ethnic categories (white, black, Asian, and Hispanic) who underwent surgery for cancer (breast, colorectal, gastric, lung, or pancreatic resection), cardiovascular disease (coronary artery bypass graft, coronary angioplasty, abdominal aortic aneurysm repair, carotid endarterectomy), or orthopedic conditions (total hip replacement). Minority patients in New York City are doubly disadvantaged in their surgical care; they are substantially less likely to use both high-volume hospitals and surgeons for procedures with an established volume-mortality association. Better information is needed about which providers minority patients have access to and how they select them.

### **Pancreatic Cancer-Related Depression and its Relationship with the Quality of Life of Patients**

Compared with other cancers of the digestive system, depressive symptoms are common psychological disturbances in pancreatic cancer patients. Moreover, depression significantly lowers quality of life in pancreatic cancer patients.

#### **Editorial: Depression in Pancreatic Cancer -- Sense of Impending Doom**

Pancreatic cancer is associated with a high prevalence of depression yet the relationship is still poorly understood. Is depression a feature of pancreatic cancer per se or is it rather a response to the experience of gradual loss of strength and body weight in patients with a life-threatening diagnosis?

### **Serum CA19-9 Alterations During Preoperative Gemcitabine-Based Chemoradiation Therapy**

CA19-9 alteration status is useful in identifying those who will benefit from the preoperative gemcitabine-based chemoradiation therapy (CRT) and subsequent resection, and those who will not. CA19-9 changes were a significant predictor for patient prognosis in the setting of the preoperative CRT strategy for resectable pancreatic cancer.

### **Gemcitabine-Based Cytotoxic Doublets Chemotherapy for Advanced Pancreatic Cancer**

The meta-analysis indicated a significant survival benefit when gemcitabine was either combined with capecitabine or oxaliplatin. On the basis of a preliminary subgroup analysis, pancreatic cancer patients with a poor PS appeared to have a worse survival benefit from gemcitabine-based cytotoxic doublets.

### **Psychological Distress in Patients with Pancreatic Cancer**

A diagnosis of pancreatic cancer may be associated with increased psychological distress, yet little is known about the degree of psychological distress experienced by these patients at diagnosis and treatment. Over 300 pancreatic cancer patients and 7000 patients with other cancer diagnoses completed psychological self-report symptom scales during outpatient registration. A higher percentage of pancreatic cancer patients reported elevated distress when compared with those diagnosed with other cancer diagnoses. The most notable difference was on the depression subscale, with 28.8% of pancreatic patients reporting elevated depression compared with 18.5% of other cancer diagnoses. Pancreatic cancer patients demonstrate elevated levels of psychological distress, which suggest an early distress management intervention should be used.

### **Phase II Study of Bevacizumab+Erlotinib for Gemcitabine-Refractory Metastatic Pancreatic Cancer**

No standard of care exists for patients with metastatic pancreatic cancer following progression on first-line chemotherapy. Based on potential for additive or synergistic activity by concurrent inhibition of VEGF and EGFR, a phase II study evaluated the combination of bevacizumab plus erlotinib in patients who had been on at least one gemcitabine-based treatment regimen. The combination of bevacizumab and erlotinib was found to be safe but relatively ineffective in patients with gemcitabine-refractory metastatic pancreatic cancer.

### **Phase I Study of Daily Irinotecan as Radiation Sensitizer for Locally Advanced Pancreatic Cancer**

Irinotecan was given with concomitant radiotherapy in patients with locally advanced adenocarcinoma of the pancreas. Dose-limiting toxicities were mainly gastrointestinal. Even though efficacy was not the aim of this study, the results were promising, with a median survival time of 12.6 months.