PANCREATIC CANCER NEWS & UPDATES – JANUARY 2011

BIOLOGY OF CANCER

DAXX/ATRX, MEN1, and mTor pathway genes are altered in pancreatic neuroendocrine tumors
http://www.ncbi.nlm.nih.gov/pubmed/21252315
Johns Hopkins press release:
http://www.hopkinsmedicine.org/news/media/releases/genetic_code_deciphered_for_form_of_pancreatic_cancer
This *Science* paper out of Johns Hopkins received some national media attention this month. Contributors to this paper include Anirban Maitra, PhD, recipient of a 2004 Pancreatic Cancer Action Network – AACR Career Development Award, and Ralph Hruban, MD, Pancreatic Cancer Action Network Scientific Advisory Board member. This work focuses on identifying key genetic changes in pancreatic neuroendocrine (also known as islet cell) cancer. Genetic analyses of 68 pancreatic neuroendocrine tumors revealed that mutations in three genes were significant to patient survival: patients with mutations in MEN-1, DAXX, and ATRX lived approximately ten years after diagnosis. By contrast, about 60 percent of patients without those mutations passed away within five years of diagnosis. In addition, 14% of neuroendocrine patients showed mutations in mTor, suggesting the potential feasibility of mTor inhibitors in this population.

RNA interference in the clinic: Challenges and future directions
http://www.ncbi.nlm.nih.gov/pubmed/21160526
This review article, co-authored by George Calin, MD, PhD (2009 Seena Magowitz – Pancreatic Cancer Action Network – AACR Pilot Grant), discusses RNA interference (RNAi) as a potential means to therapeutically inhibit gene expression in cancer. Obstacles include delivery, biological barriers, side effects, and achieving sustained and controlled release of synthetic RNAi-based therapies.

Massive genomic rearrangement acquired in a single catastrophic event during cancer development
http://www.ncbi.nlm.nih.gov/pubmed/21215367
Other press: http://www.the-scientist.com/news/display/57907/
English and American researchers, including Christine Iacobuzio-Donahue, MD, PhD (2007 Pancreatic Cancer Action Network Pilot Grant), collaborated on this *Cell* publication. Dogma suggests that cancer tends to develop over many years, but these findings describe a scenario that the authors termed chromothripsis, whereby tens to hundreds of genomic rearrangements occur during a single cellular catastrophe. Evidence of chromotripsis occurs in two to three percent of all cancers studied, with disproportionate frequency in bone cancers.

Down-regulation of Bax-interacting factor 1 in human pancreatic ductal adenocarcinoma
http://www.ncbi.nlm.nih.gov/pubmed/21283040
A collaborative team of researchers, including Dr. Mokenge Malafa (Medical Advisory Board), studied Bax-interacting factor 1 (Bif-1) levels in pancreatic cancer. Bif-1 is known to be involved in apoptosis, mitochondrial morphogenesis, and autophagy, and its loss has previously been associated with tumorigenesis. The expression of Bif-1 was twice as likely to be low in pancreatic ductal adenocarcinoma samples as in nonmalignant pancreatic specimens. There was no association observed between Bif-1 levels and patient survival, perhaps due to disease heterogeneity.

MiR-301a as an NF-kB activator in pancreatic cancer cells
http://www.ncbi.nlm.nih.gov/pubmed/21113131
Reviewed in Nature Reviews Cancer: http://www.ncbi.nlm.nih.gov/pubmed/21213954
Researchers at University of Louisville explore the relationship between transcription factor NF-kB, NF-kB-repressing factor (Nkrf), and microRNA miR301a, in pancreatic cancer. Their data suggest that miR301a down-regulates Nkrf expression, thereby leading to sustained activation of NF-kB. NF-kB promotes the transcription of miR-301a, suggesting a positive feedback loop in which miR-301a represses Nkrf to elevate NF-kB activity, which in turn promotes miR-301a transcription.

Oncogenic Ras/Src cooperativity in pancreatic neoplasia
http://www.ncbi.nlm.nih.gov/pubmed/21242978
Published in *Oncogene*, this study uses transgenic mouse models to understand the cooperativity between Kras and Src in pancreatic cancer development. In the presence of oncogenic Kras, Src activation leads to the development of invasive pancreatic ductal adenocarcinoma in 5-8 weeks. Activation of Src alone does not lead to pancreatic tumors; activation of Kras alone may lead to invasive pancreatic tumors after approximately 12 months. These findings demonstrate that oncogenic Ras/Src cooperate to accelerate pancreatic ductal adenocarcinoma onset and support further studies of Src-directed therapies in pancreatic cancer.

Novel interaction of MUC4 and galectin: Potential pathobiological implications for metastasis
http://www.ncbi.nlm.nih.gov/pubmed/21059814
The level of galectin-3, a member of the b-galactoside-binding family of lectins, was found to be elevated in the sera of pancreatic cancer patients with metastases, as compared to pancreatic cancer patients without metastases and normal controls. Galactin-3 was found to interact with mucin MUC4 on the surface of circulating pancreatic cancer cells, resulting in clustering of MUC4 and a stronger docking to endothelial cells.

KLF4 is a novel candidate tumor suppressor gene in pancreatic ductal carcinoma
http://www.ncbi.nlm.nih.gov/pubmed/21224073
Allelic losses of the long arm of chromosome 9 are detected in many human cancers, but had not yet been studied in pancreatic cancer. In this paper, data suggest that loss of heterozygosity of at least one locus on chromosome 9 was detectable in 27/40 pancreatic ductal carcinoma samples, and 6/6 panINs. Absence of mRNA of a candidate tumor suppressor within that region, KLF4, was observed in 25/35 ductal carcinomas examined. Moreover, forced re-expression of KLF4 into a pancreatic cancer cell line showed a significant decrease in proliferation.

Ras effector switching promotes divergent cell fates in C. elegans vulval patterning
http://www.ncbi.nlm.nih.gov/pubmed/21238927
This *Developmental Cell* paper out of Channing Der's lab analyzes the Ras pathway in C. elegans worms. A better understanding of the factors that influence whether Ras acts via the Ras-Raf or Ras-RalGEF-Ral pathway could provide information on Ras signaling in pancreatic and other cancer types.

Modulating endogenous NQO1 levels identifies key regulatory mechanisms of beta-lapachone
http://www.ncbi.nlm.nih.gov/pubmed/21224367
NAD(P)H:quinone oxidoreductase-1 (NQO1) expression is necessary, at at least 90 enzymatic units, for b-lapachone to exert its anti-tumor effects in pancreatic cancer cell lines. NQO1 is activated and over-expressed in approximately 70 percent of pancreatic cancer cases, suggesting that b-lapachone may be an effective treatment option for this disease.

The ZEB1/miR-200 feedback loop controls Notch signaling in cancer cells
http://www.ncbi.nlm.nih.gov/pubmed/21224848
ZEB1 activates epithelial-to-mesenchymal transition and plays a role in metastasis. Here, a group of German researchers demonstrate that ZEB1 negatively regulates the expression of miRNA miR-200, and miR-200 negatively regulates the expression of ZEB1. Members of miR-200 target Notch family members Jagged1 and Maml2 and Maml3, suggesting that by inhibiting miR-200, ZEB1 promotes activation of the Notch pathway in pancreatic adenocarcinoma.

Pancreatic neuroendocrine tumors
http://www.ncbi.nlm.nih.gov/pubmed/21226566
This review discusses the clinical presentation and diagnostic and follow-up testing for patients with pancreatic neuroendocrine tumors.

Cells of origin in cancer
http://www.ncbi.nlm.nih.gov/pubmed/21248838
Written by Australian researchers, this *Nature* review article describes how identification of cancer cells of origin may contribute to earlier detection, better predictions of tumor behavior, and ultimately may lead to preventive therapies.

Khalifa Foundation grants MD Anderson $150 million for cancer research
http://mdanderson.bm23.com/public/?q=preview_message&fn=Link&t=1&ssid=6781&id=ixzohbksawdw50ukc3zd4mphuyqvy&id2=5iym1nl5s4hbqviexr3qnq013wp3p&subscriber_id=afhopbiydnopexrxurhbqpbbpbbubbg&messageversion_id=bhxlxspnghwfszvjhnmuvvswruqrbjm&delivery_id=awocbopiabqnpffecufkkoxfozyybal&tid=3.Gn0.A_bftw.CYK0.ev7N..3HIn.b..l._no.n.TTdnCA.TTdnCA.YqxZwQ
The Khalifa bin Zayed Al Nahyan Charity Foundation is granting $150 million to The University of Texas MD Anderson Cancer Center to support genetic-analysis based research, diagnosis, and treatment of cancer. This will establish the Zayed bin Sultan al Nahyan Building for Personalized Cancer Care at MD Anderson, housing the Khalifa bin Zayed Al Nahyan Institute for Personalized Cancer Therapy and the Ahmed bin Zayed Al Nahyan Center for Pancreatic Cancer Research.

ETIOLOGY

Cigar and pipe smoking, smokeless tobacco use and pancreatic cancer

http://www.ncbi.nlm.nih.gov/pubmed/21245160

The International Pancreatic Cancer Case-Control Consortium (PanC4), including Dr. Gloria Petersen (Scientific Advisory Board), analyzed the association between non-cigarette tobacco products and smokeless tobacco, and pancreatic cancer risk. This collaborative analysis provided evidence that cigar smoking is associated with an excess risk of pancreatic cancer, while no significant association emerged for pipe smoking and smokeless tobacco use.

PREVENTION

Therapeutic applications of NSAIDS in cancer: Special emphasis on tolfenamic acid

http://www.ncbi.nlm.nih.gov/pubmed/21196413

Non-steroidal anti-inflammatory drugs (NSAIDs) have shown promise as preventive for several cancer types. This review article focuses particularly on tolfenamic acid, an NSAID that has potential applications in prevention of pancreatic, esophageal, and lung cancers.

EARLY DETECTION, DIAGNOSIS, AND PROGNOSIS

Early Detection, Diagnosis:

New test under development could find single cancer cell in blood

CNN article, with video: http://www.cnn.com/2011/HEALTH/01/03/cancer.test/

MassGen press release: http://www.mgh.harvard.edu/about/pressrelease.aspx?id=1327

Researchers at Massachusetts General Hospital are joining with Johnson & Johnson to develop a device to detect circulating tumor cells (CTCs) in patient blood samples. David Ting, MD (2009 Pancreatic Cancer Action Network – AACR Fellowship grant recipient) is part of the research team at Massachusetts General, and can be seen sitting behind Dr. Mehmet Toner in the CNN video! It will be several years before this device is publicly available, but the goal is to catch CTCs that have migrated away from the primary tumor, before distant metastases are developed. The CTC chip can detect as few as one or two tumor cells among five to ten billion blood cells.

Aberrant overexpression of satellite repeats in pancreatic and other epithelial cancers

http://www.ncbi.nlm.nih.gov/pubmed/21233348

Dr. David Ting was also co-first author of an exciting publication in *Science Express* that was came out in January. Next generation digital gene expression methods revealed that satellite repeats, repetitive DNA sequences that are transcribed to RNAs that do not code for proteins, were aberrantly present in a mouse model of pancreatic cancer. The RNA satellite repeats in the pancreatic adenocarcinoma cells were present at more than 100-times the level in normal pancreas tissue. Moreover, human pancreatic ductal adenocarcinoma primary samples showed satellite non-coding RNAs expressed at a median of 21-fold higher level than normal pancreas. Overall, these data suggest that satellite repeats merit further study as potential biomarkers of pancreatic cancer.

Plectin-1 as a novel biomarker for pancreatic cancer

http://www.ncbi.nlm.nih.gov/pubmed/21098698

The senior author on this exciting *Clinical Cancer Research* paper is Kimberly Kelly, PhD (2007 Laurie and Paul MacCaskill – Pancreatic Cancer Action Network – AACR Career Development Award). This work

builds upon her previous findings suggesting that Plectin-1 levels are elevated in pancreatic cancer cells, as opposed to normal or pancreatitis tissue. Here, Dr. Kelly and colleagues strive to validate Plectin-1 as an imaging target by using Plectin-1-targeting peptides as a contrast agent for single photon CT scans in a mouse orthotopic pancreatic cancer and liver metastasis model. Plectin-1 expression was found to be positive in all pancreatic ductal adenocarcinoma, negative in benign tissue, and increase along the progression of pancreatic cancer. Metastatic deposits in the lymph nodes, liver, and peritoneum were all highlighted as Plectin-1 positive. Plectin-1 is the first biomarker to identify primary and metastatic pancreatic adenocarcinoma by imaging.

Blinded by the light: Molecular imaging in pancreatic adenocarcinoma
http://www.ncbi.nlm.nih.gov/pubmed/21106729
Co-written by Dr. Margaret Tempero (Scientific Advisory Board), this article provides commentary on Dr. Kelly and colleagues' work described above, concluding that the authors "provide a template for further molecular-based imaging in this disease".

Mutant proteins as cancer-specific biomarkers
http://www.ncbi.nlm.nih.gov/pubmed/21248225
An all-star lineup of Johns Hopkins researchers, including Drs. Anirban Maitra (2004 Pancreatic Cancer Action Network – AACR Career Development Award) and Ralph Hruban (Scientific Advisory Board) contributed to this *PNAS* paper exploring mutant proteins as cancer-specific biomarkers. They cite the example of analyzing the ratio of normal Ras to mutant Ras levels in tumor samples, specifically colorectal or pancreatic. In addition to answering basic questions about the relative levels of genetically abnormal proteins in tumors, this approach could prove useful for diagnostic applications.

Feasibility of identifying pancreatic cancer based on serum metabolomics
http://www.ncbi.nlm.nih.gov/pubmed/21098649
Published in *Cancer Epidemiology, Biomarkers & Prevention*, this article evaluates the abundance of certain metabolites in the blood of pancreatic cancer patients. The authors compared serum from 56 pancreatic cancer patients to 43 patients with benign hepatobiliary disease. After controlling for jaundice and diabetes, the serum metabolic profile may be useful in distinguishing benign from malignant lesions.

A migration signature and plasma biomarker panel for pancreatic adenocarcinoma
http://www.ncbi.nlm.nih.gov/pubmed/21071578
In search of biomarkers for pancreatic adenocarcinoma, these researchers focused on chromosome 3p12, which is proximal to the most common fragile site in the human genome. Chromosome 3p12 frequently undergoes breakage, loss of heterozygosity, and homozygous deletion in human epithelial cancers, especially in association with cigarette smoke. A seven-gene panel was identified that is differentially expressed between pancreatic cancer and normal samples. These genes were found to be involved in cellular movement, morphology, and development.

Selective use of staging laparoscopy based on carbohydrate antigen 19-9 level and tumor size
http://www.ncbi.nlm.nih.gov/pubmed/21206325
This study aimed to determine whether the selective use of staging laparoscopy can prevent unnecessary laparotomy, and to find a surrogate marker for surgical unresectability in patients with potentially or borderline resectable pancreatic cancer. The presence of high-risk markers (defined as CA19-9 levels of 150 U/mL of higher) was associated with surgical unresectability, and selective use of staging laparoscopy decreased the frequency of unnecessary laparotomy due by detecting microscopic metastatic disease.

Clinical value of serum neopterin in diagnosis between pancreatic cancer and chronic pancreatitis
http://www.ncbi.nlm.nih.gov/pubmed/21242708
Data in this paper suggest that neopterin might be clinically useful in differential diagnosis between pancreatic cancer and chronic pancreatitis. Assessment of tissue polypeptide-specific antigen did not seem to add any significant information to that obtained from measuring neopterin and CA19-9.

Pancreatic neuroendocrine tumor rate not up, discovery is
http://www.medpagetoday.com/MeetingCoverage/ASCOGI/24516?utm_content=GroupCL&utm_medium=email&impressionId=1296023208133&utm_campaign=DailyHeadlines&utm_source=mSpoke&userid=71759
GI ASCO abstract:
http://www.asco.org/ASCOv2/Meetings/Abstracts?&vmview=abst_detail_view&confID=103&abstractID=70826
To see more results from the 2011 Gastrointestinal Cancers Symposium, see GI ASCO – TREATMENT section below. As reported in this study, a high rate of incidentally discovered pancreatic neuroendocrine tumors might explain what appears to be an increasing incidence and improved survival in the disease.

Pancreatic cancer: Henry Ford Hospital launches study to develop screening test
http://www.prnewswire.com/news-releases/pancreatic-cancer-henry-ford-hospital-launches-study-to-develop-screening-test-113454554.html
Researchers at Henry Ford Health Systems and Karmanos Cancer Institute in Detroit have launched a study to identify novel serum biomarkers for the early detection of pancreatic cancer. They are recruiting 300 patients who are either at risk for pancreatic cancer or have been diagnosed with pancreatic cancer themselves.

Prognosis:
Circulating tumor cells and EpCAM expression in neuroendocrine tumors
http://www.ncbi.nlm.nih.gov/pubmed/21224371
This *Clinical Cancer Research* paper explores whether neuroendocrine tumors (NET) express epithelial cell adhesion molecular (EpCAM), and thus, whether NET circulating tumor cells (CTCs) are detectable. Strong homogeneous, membranous EpCAM expression was observed in all ileal (n = 26) and pancreatic NETs (n = 16), whereas variable EpCAM expression was observed in bronchopulmonary NETs (n = 13). CTCs seem to be associated with progressive disease and may provide useful prognostic information given the variable survival rates in these tumors.

DNA mismatch repair gene polymorphisms affect survival in pancreatic cancer
http://www.ncbi.nlm.nih.gov/pubmed/21212431
MD Anderson researchers aimed to demonstrate whether DNA mismatch repair (MMR) genetic variants affect overall survival in pancreatic cancer. In all, 16 haplotypes of ten MMR genes were significantly correlated with overall survival.

High EGFR mRNA expression is a prognostic factor for reduced survival in pancreatic cancer
http://www.ncbi.nlm.nih.gov/pubmed/21243324
As reported in this *International Journal of Oncology* article, researchers at Kyushu University in Japan aimed to investigate EGFR mRNA levels in resected pancreatic ductal adenocarcinoma tissue, and determine its correlation to patient prognosis. They found that high EGFR mRNA levels were an independent poor prognostic factor in patients receiving gemcitabine-based adjuvant chemotherapy.

Reduced plasma level of CXC chemokine ligand 7 in patients with pancreatic cancer
http://www.ncbi.nlm.nih.gov/pubmed/21148121
Scientists at the National Cancer Center Research Institute in Tokyo examined the plasma proteome of 24 pancreatic cancer patients and 21 healthy controls. They found that CXC chemokine ligand 7 (CXCL7) protein level was significantly reduced in pancreatic cancer patients. Further, analyzing CXCL7 levels in combination with CA19-9 improved the discriminatory power of CA19-9 for pancreatic cancer.

Role of serum CA19-9 and CEA in distinguishing between benign and invasive IPMNs
http://www.ncbi.nlm.nih.gov/pubmed/20949535
Previously, serum levels of carbohydrate antigen 19-9 (CA19-9) and carcinoembryonic antigen had been shown to be elevated in pancreatic ductal adenocarcinoma, but little had been reported on their significance in intraductal papillary mucinous neoplasms (IPMNs). Serum CA19-9 and/or CEA levels were elevated in 80 percent of invasive IPMN cases, and only 18 percent of samples with benign IPMN. Measurement of these serum levels could serve as complementary tools to help distinguish between invasive and benign IPMNs.

IPMNs of the pancreas: Differentiation of malignant and benign tumors
http://www.ncbi.nlm.nih.gov/pubmed/21239981
This study aimed to identify predictors of malignancy of intraductal papillary mucinous neoplasms (IPMNs) using contrast-enhanced endoscopic ultrasonography (CE-EUS) findings of mural nodules. The authors conclude that these new morphological criteria were useful in distinguishing malignant from benign IPMNs.

TREATMENT – GI ASCO

Reported at the 2011 Gastrointestinal Cancers Symposium, January 20-22, San Francisco:

FibroGen reports interim results of trial of FG-3019 in locally advanced or metastatic pancreatic cancer

http://www.businesswire.com/portal/site/biospace/index.jsp?ndmViewId=news_view&newsId=20110121005303&newsLang=en

Abstract:

http://www.asco.org/ASCOv2/Meetings/Abstracts?&vmview=abst_detail_view&confID=103&abstractID=71472

FibroGen, Inc. announced interim results of a phase 1 / 2 trial of FG-3019, a therapeutic antibody against connective tissue growth factor (CTGF), in combination with gemcitabine and erlotinib in individuals with unresectable pancreatic cancer. FG-3019 has been well-tolerated, no dose-limiting toxicities have been observed, and dose escalation continues.

Threshold Pharmaceuticals' TH-302 continues to demonstrate promising activity in pancreatic cancer

http://investor.thresholdpharm.com/releasedetail.cfm?ReleaseID=545135

Abstract:

http://www.asco.org/ASCOv2/Meetings/Abstracts?&vmview=abst_detail_view&confID=103&abstractID=71497

Threshold Pharmaceuticals, Inc. announced updated Phase 1/2 clinical trial results related to the company's clinical stage hypoxia-activated prodrug, TH-302. Additionally, the company announced that an ongoing Phase 2, controlled, clinical trial in patients with pancreatic cancer has reached the mid-way point in overall enrollment into the trial. The progression-free survival, overall survival, CA19-9 and response data suggest that TH-302 is contributing to the combination treatment with gemcitabine.

Immunomedics reports targeted therapy for advanced pancreatic cancer improves survival

http://www.globenewswire.com/newsroom/news.html?d=211521

Abstract:

http://www.asco.org/ASCOv2/Meetings/Abstracts?&vmview=abst_detail_view&confID=103&abstractID=71351

Immunomedics, Inc. announced that repeated therapy cycles of its proprietary anti-mucin humanized monoclonal antibody, clivatuzumab tetraxetan (hPam4), labeled with yttrium-90 (Y-90), plus low-dose gemcitabine extended median overall survival of advanced pancreatic cancer patients.

CureFAKtor pharmaceuticals demonstrates that novel FAK inhibitors inhibit pancreatic cancer cells

http://www.prnewswire.com/news-releases/curefaktor-pharmaceuticals-demonstrates-that-novel-focal-adhesion-kinase-fak-inhibitors-targeted-to-protein-protein-binding-sites-inhibit-pancreatic-cancer-cells-growth-114354634.html

Abstract:

http://www.asco.org/ASCOv2/Meetings/Abstracts?&vmview=abst_detail_view&confID=103&abstractID=70766

CureFAKtor Pharmaceuticals presented research results demonstrating that novel FAK inhibitors (CFAK-C4) targeting the binding site of vascular endothelial growth factor receptor 3 (VEGFR-3) reduced the growth of pancreatic cancer cells *in vitro* and *in vivo*. *Please also see CureFAKtor announcement below, re: orphan drug status for their lead compound, CFAK-C4.*

Liposomal CPT-11 shows promise in pancreatic cancer
http://www.medpagetoday.com/MeetingCoverage/ASCOGI/24546?utm_content=GroupCL&utm_medium=email&impressionId=1296109860099&utm_campaign=DailyHeadlines&utm_source=mSpoke&userid=71759
Abstract:
http://www.asco.org/ASCOv2/Meetings/Abstracts?&vmview=abst_detail_view&confID=103&abstractID=70718
A liposomal formulation of irinotecan (CPT-11), called PEP02, passed an early clinical test in metastatic pancreatic cancer, meeting survival and safety endpoints for continued evaluation.

Intensity-modulated radiation therapy boosts resectability in pancreatic cancer
http://www.medpagetoday.com/MeetingCoverage/ASCOGI/24547?utm_content=GroupCL&utm_medium=email&impressionId=1296109860099&utm_campaign=DailyHeadlines&utm_source=mSpoke&userid=71759
Abstract:
http://www.asco.org/ASCOv2/Meetings/Abstracts?&vmview=abst_detail_view&confID=103&abstractID=70736
Resectability increased almost fourfold in patients with pancreatic cancer after neoadjuvant therapy that included intensity-modulated radiation therapy (IMRT), results of three small trials showed. Data were reported from a retrospective analysis of three small trials of neoadjuvant IMRT paired with a cytotoxic radiosensitizer to improve resectability of pancreatic adenocarcinoma.

Inhibitor of mTor slows advanced pNET
http://www.medpagetoday.com/MeetingCoverage/ASCOGI/24542?utm_content=GroupCL&utm_medium=email&impressionId=1296109860099&utm_campaign=DailyHeadlines&utm_source=mSpoke&userid=71759
Abstract:
http://www.asco.org/ASCOv2/Meetings/Abstracts?&vmview=abst_detail_view&confID=103&abstractID=71089
Updated results from a phase III trial found that patients with advanced pancreatic neuroendocrine tumors (pNET) had more than a twofold increase in progression-free survival when treated with a mammalian target of rapamycin (mTOR) inhibitor, everolimus.

TREATMENT

A lethally irradiated allogeneic GM-CSF-secreting tumor vaccine for pancreatic adenocarcinoma
http://www.ncbi.nlm.nih.gov/pubmed/21217520
Authors of this large, collaborative study include Joe Herman, MD (2008 Blum-Kovler – Pancreatic Cancer Action Network – AACR Career Development Award) and Drs. Liz Jaffee and Ralph Hruban (Scientific Advisory Board). In order to test the safety and efficacy of granulocyte-macrophage colony-stimulating factor, a single institution phase II trial of 60 patients with resected pancreatic adenocarcinoma was performed. Results suggested that an immunotherapy approach integrated with chemoradiation is safe and demonstrates an overall survival that compares favorably with published data for resected pancreas cancer, providing rationale for conducting a multicenter phase II study.

Pancreatic cancer treatment and research: An international expert panel discussion
http://www.ncbi.nlm.nih.gov/pubmed/21199884
A pancreatic cancer research conference took place among experts from five European countries and the United States. US representatives included Drs. Margaret Tempero and Jordan Berlin of the Pancreatic Cancer Action Network Scientific and Medical Advisory Boards, respectively. Current treatment strategies, recommended designs for future phase II and III clinical trials, the need for biorepositories, drug development, and other important topics were discussed, and are summarized in this *Annals of Oncology* report.

The complexity of pancreatic ductal cancers and multidimensional strategies for therapeutic targeting
http://www.ncbi.nlm.nih.gov/pubmed/21125682
This invited review published in *The Journal of Pathology* is coauthored by Dr. Ralph Hruban (Scientific Advisory Board). Drs. Kern, Shi, and Hruban of Johns Hopkins focus on implications for the future goal of individualized, targeted therapy in pancreatic cancer.

Pancreatic cancer: Understanding and overcoming chemoresistance
http://www.ncbi.nlm.nih.gov/pubmed/21102532
In this review article published in *Nature Reviews: Gastroenterology & Hepatology*, Karmanos Cancer Institute researchers discuss the chemoresistant properties of pancreatic cancer cells that have undergone epithelial-to-mesenchymal transition (EMT), and cancer stem cells. They hypothesize that cells with an EMT or cancer stem cell phenotype could be specifically targeted by regulating the expression of microRNAs.

The promise of a personalized genomic approach and why targeted therapies have missed the mark
http://www.ncbi.nlm.nih.gov/pubmed/21222122
Dr. William Fisher at Baylor College of Medicine wrote this review article discussing previous failed attempts at targeted therapies for pancreatic cancer, and challenges and potential hope for the future in utilizing targeted therapies to treat this most lethal disease.

Future directions in the treatment of neuroendocrine tumors
http://www.ncbi.nlm.nih.gov/pubmed/21263089
This consensus report of the National Cancer Institute Neuroendocrine Tumor Clinical Trials Planning Meeting is published in the *Journal of Clinical Oncology*. The recent completion of several phase III studies has demonstrated that rigorous evaluation of novel agents in neuroendocrine tumors (NET) is both feasible and can lead to practice-changing outcomes. Recommendations from the meeting include better design and outcomes for clinical trials, evaluating pancreatic NETs separately from NETs at other sites, and excluding patients based on differentiation of histologies.

Anti-epidermal growth factor receptor treatment strategies in pancreatic cancer: success or failure?
Letter to the Editor: http://www.ncbi.nlm.nih.gov/pubmed/21149660
Authors' response: http://jco.ascopubs.org/content/29/3/e72
This letter and response refer to Philip, *et al*'s article describing a Phase III study comparing gemcitabine plus cetuximab to gemcitabine alone in patients with advanced pancreatic adenocarcinoma. Specifically, the association between skin rash and response to anti-EGFR treatments is discussed.

Peregrine initiates randomized Phase II trial of bavituximab in pancreatic cancer
http://ir.peregrineinc.com/releasedetail.cfm?ReleaseID=541722
Peregrine Pharmaceuticals, Inc announced a randomized phase II clinical trial in patients with previously untreated stage IV pancreatic cancer. The trial will evaluate Peregrine's bavituximab, a phosphatidylserine (PS)–targeting monoclonal antibody, in combination with the chemotherapeutic agent gemcitabine, compared to gemcitabine monotherapy.

Oncolytics Biotech announces 2-arm, randomized Phase II pancreatic cancer study
http://www.prnewswire.com/news-releases/oncolytics-biotech-inc-announces-2-arm-randomized-phase-ii-pancreatic-cancer-study-114104664.html
Oncolytics Biotech Inc. announced that the Cancer Therapy Evaluation Program, Division of Cancer Treatment and Diagnosis, NCI, has agreed to sponsor a 2-arm randomized Phase II study of carboplatin, paclitaxel, plus REOLYSIN® versus carboplatin and paclitaxel alone in the first line treatment of patients with recurrent or metastatic pancreatic cancer. Reolysin, Oncolytic's proprietary formulation of human reovirus, has been shown to replicate specifically in tumor cells bearing an activated Ras pathway.

CureFAKtor Pharmaceuticals receives orphan drug designation for its lead compound CFAK-C4
http://www.prnewswire.com/news-releases/curefaktor-pharmaceuticals-receives-orphan-drug-designation-for-its-lead-compound-cfak-c4-for-the-treatment-of-pancreatic-cancer-114108649.html
CureFAKtor Pharmaceuticals, LLC, a privately-held biopharmaceutical company focused on the research and development of Focal Adhesion Kinase (FAK) inhibitors for cancer, announced that its lead compound, CFAK-C4, which is in development for the treatment of pancreatic cancer, has been granted Orphan Drug Designation by the U.S. Food and Drug Administration (FDA). CureFAKtor Pharmaceuticals is planning a Phase I clinical study of CFAK-C4 in combination with gemcitabine in 2012. *Please also see CureFAKtor results reported at the GI ASCO meeting, described above.*

Preoperative capecitabine and concurrent radiation for borderline resectable pancreatic cancer
http://www.ncbi.nlm.nih.gov/pubmed/21213060
Researchers at the University of Virginia Health System identified 170 pancreatic ductal adenocarcinoma patients, 40 of whom were classified with borderline resectable disease. Thirty-four of the borderline resectable patients underwent preoperative capecitabine-based chemoradiation, and 16 became eligible for surgery, suggesting the benefit of this neoadjuvant regimen.

Pancreatic resection in the octogenarian: A safe option for pancreatic malignancy
http://www.ncbi.nlm.nih.gov/pubmed/21227721
Pancreatectomy was deemed a safe and effective procedure for pancreatic cancer patients, regardless of whether they are older or younger than age 80, and yielded similar survival rates.

When are "positive" clinical trials in oncology truly positive?
http://www.ncbi.nlm.nih.gov/pubmed/21131576
This article in *JNCI* describes the current trend of designing large trials that may detect statistically significant, but often trivial, differences in survival endpoints. The authors suggest that trials should not be declared positive based only on a statistically significant P-value, but should also require detection of a difference in survival outcome that equals or exceeds a clinically important value that is specified in the protocol.

SURVIVORSHIP

Robotic palliation for unresectable pancreatic cancer and distal cholangiocarcinoma
http://www.ncbi.nlm.nih.gov/pubmed/21191914
A team at the University of Illinois, Chicago investigated the potential of robotic surgery for palliation in pancreatic cancer and cholangiocarcinoma patients who are not eligible for curative surgery. The authors conclude that the use of robotics in palliative surgery offers low morbidity, short hospital stay, and minimal readmissions.

Analgesic effect of high intensity focused ultrasound therapy for unresectable pancreatic cancer
http://www.ncbi.nlm.nih.gov/pubmed/21219135
Preliminary results from this Chinese study demonstrate the safety of clinical application of high intensity focused ultrasound therapy for pancreatic cancer and reveal it to be a promising mode of treatment for palliation of pain associated with pancreatic cancers.

ASCO statement: Toward individualized care for patients with advanced cancer
http://www.ncbi.nlm.nih.gov/pubmed/21263086
The American Society of Clinical Oncology (ASCO) published this new policy statement in the *Journal of Clinical Oncology* to improve communication with, and decision making for, patients with advanced cancer. Realistic conversations about a patient's prognosis, potential benefits and risks of anti-cancer therapies, and palliative care options are too frequently discussed very late in the course of a patient's illness, if at all. ASCO's statement advocates for an individualized approach to discussing and providing disease-directed and supportive care options for advanced cancer patients throughout the continuum of their care.

Associations between pain and current smoking status among cancer patients
http://www.ncbi.nlm.nih.gov/pubmed/21168758
Researchers in the Department of Psychology at Texas A&M evaluated 224 cancer patients who were about to begin chemotherapy. Self-reported pain levels and demographics questionnaires revealed that current-smokers experienced more pain during chemotherapy, compared to never-smokers or former-smokers. Former-smokers' pain threshold was inversely proportional to the number of years since they had quit smoking. Future research is warranted to evaluate the directionality of this correlation.

Projections of the cost of cancer care in the United States: 2010-2020

http://www.ncbi.nlm.nih.gov/pubmed/21228314

Conducted by researchers at the NCI and published in *Journal of the National Cancer Institute*, these analyses predicted that the cost of cancer care in the US would increase to at least $158 billion (in 2010 dollars) by the year 2020, representing a 27 percent increase from 2010. The projections were based on the most recent data available on cancer incidence, survival, and costs of care.

Supportive care: large studies ease yoga, exercise into mainstream oncology

http://www.ncbi.nlm.nih.gov/pubmed/21169537

This *JNCI* news article discusses large randomized trials of yoga for cancer patients that are concluded or underway, and how professional and patient advocacy groups are beginning to recommend yoga, exercise, meditation, or other "integrative" medicine tactics for symptom management. These large trials may provide data on the benefit of these more holistic approaches to maintain quality of life for cancer patients.