

Emory's Liver & Pancreas Team

Emory's Liver & Pancreas Program brings together world-renowned hepatologists, surgeons, gastroenterologists, radiologists, medical oncologists and pathologists to provide comprehensive, compassionate, individualized care for people suffering from the entire spectrum of liver and pancreas diseases.

Our surgical team alone is comprised of highly skilled surgical oncologists, transplant surgeons and general surgeons, all of whom specialize in the treatment of diseases and conditions of the liver and pancreas. In addition to offering the latest and most effective treatments, the surgical team is also dedicated to improving surgical procedures and developing new procedures, approaches and techniques that ultimately improve the lives of patients.



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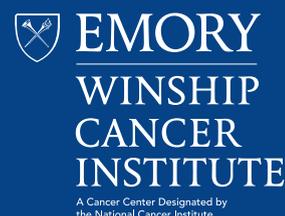


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Winship Cancer Institute of Emory University

As a National Cancer Institute (NCI)-designated cancer center, the Winship Cancer Institute of Emory University is part of a select group of 67 centers nationwide that are on the forefront of the battle against cancer. Our participation in national, international and institutional clinical trials ensures that our patients have access to the latest advances in cancer medicine.



For more information or to refer a patient, please call the Emory Physician Consult Line at **404-778-5050**, or visit emoryhealthcare.org/liver-pancreas.

Emory Rounds
Innovations at Emory Healthcare
Summer 2014

EMORY
HEALTHCARE

Personalizing Treatment for Hepatobiliary and Pancreatic Cancer: The Next Frontier

With the growing use of molecular agents that target specific hepatobiliary and pancreatic tumor pathways, oncologists have been slowly but steadily moving toward the personalization of medical therapy to treat these diseases. In the effort to better understand and characterize the molecular basis of the tumors, the role of biomarkers has become increasingly important.

The ability to predict response to a certain medical therapy is the hallmark of a clinically useful biomarker in advanced-stage disease, which unfortunately accounts for the vast majority of hepatobiliary and pancreatic cancers. Since medical therapy is the primary treatment utilized for these patients, the bulk of research to date around personalization of therapy has focused on identifying predictive biomarkers for therapeutic agents in the advanced-stage setting. However, patients with early-stage resectable disease should also derive benefit from a personalized approach. In the adjuvant setting, biomarkers that have prognostic value for survival and other outcomes are equally important because they may help to guide further treatment. In addition, identification of prognostic biomarkers may assist in the development of prospective trials aimed at the selection of patients for individualized treatment regimens. Unfortunately, there are insufficient data in this arena.

continued inside



Personalizing Treatment continued

This is where Emory's hepatobiliary and pancreatic disease management team comes in. Over the past few years, they have been working toward the goal of discovering clinically relevant biomarkers that correlate with survival outcomes in resectable disease. In this effort, they have formed close-knit working relationships with a number of other Emory departments, including Pathology, Hematology & Medical Oncology, and Radiation Oncology, as well as the Pathology Core Laboratory and Biostatistics and Bioinformatics Shared Resource teams at the Winship Cancer Institute of Emory University.

The first step was to examine the literature and select the most relevant biomarkers for study. Initially, the team focused on a handful of proteins that contribute to the efficacy or are involved in the resistance pathways of the chemotherapeutic and systemic agents currently used to treat the respective tumors. Using existing data, the team created retrospective protocols to correlate the expression of the selected biomarkers in surgical patients with outcomes and survival. In addition, the protocols were designed to determine if the prognostic value of the biomarkers is inferior or superior to the typical pathologic factors currently used to predict the outcome of patients, such as tumor size, vascular invasion and lymph node involvement. To date, the team has published four such retrospective studies demonstrating useful prognostic biomarkers in specific cancers of the liver, pancreas and biliary tract, all of which have been presented at national meetings.¹⁻⁴

The next step is to design a prospective trial based on the data from these studies that will control for treatment algorithms in order to determine if expression of the identified biomarkers is prognostic in terms of response, outcomes and survival following personalized adjuvant therapy. Due to the challenges of accruing patients for early-stage trials, a single site

would likely be insufficient. To this end, the Emory team has established relationships with a number of institutional academic research programs that can help enroll patients at multiple sites.

While patients with resectable disease generally have a significantly better prognosis, survival following surgery for most cancers of the liver, bile duct and pancreas remains low. There is clearly room for improvement in determining the need and selecting the regimen for adjuvant therapy following resection. Though the task is more challenging, these patients deserve to benefit from the same research efforts being used to improve medical therapy regimens for advanced-stage disease. Emory's hepatobiliary and pancreatic disease management team is dedicated to making this a reality and has already made considerable progress toward this goal.

References:

1. Fisher SB, Patel SH, Bagci P, Kooby DA, El-Rayes BF, Staley CA 3rd, Adsay NV, Maithel SK. An analysis of human equilibrative nucleoside transporter-1, ribonucleoside reductase subunit M1, ribonucleoside reductase subunit M2, and excision repair cross-complementing gene-1 expression in patients with resected pancreas adenocarcinoma: implications for adjuvant treatment. *Cancer*. 2013;119(2):445-453.
2. Fisher SB, Fisher KE, Patel SH, Lim MG, Kooby DA, El-Rayes BF, Staley CA 3rd, Adsay NV, Farris AB 3rd, Maithel SK. Excision repair cross-complementing gene-1, ribonucleotide reductase subunit M1, ribonucleotide reductase subunit M2, and human equilibrative nucleoside transporter-1 expression and prognostic value in biliary tract malignancy. *Cancer*. 2013;119(2):454-462.
3. Maithel SK, Coban I, Kneuert PJ, Kooby DA, El-Rayes BF, Kauh JS, Sarmiento J, Staley CA 3rd, Volkan Adsay N. Differential expression of ERCC1 in pancreas adenocarcinoma: high tumor expression is associated with earlier recurrence and shortened survival after resection. *Ann Surg Oncol*. 2011;18(9):2699-2705.
4. Patel SH, Kneuert PJ, Delgado M, Kooby DA, Staley CA 3rd, El-Rayes BF, Kauh JS, Sarmiento JM, Hanish S, Cohen C, Farris AB 3rd, Maithel SK. Clinically relevant biomarkers to select patients for targeted inhibitor therapy after resection of hepatocellular carcinoma. *Ann Surg Oncol*. 2011;18(12):3384-3390.

Research Team Spotlight



Shishir K. Maithel, MD, FACS

Assistant Professor of Surgery

Division of Surgical Oncology

Winship Cancer Institute of Emory University

Dr. Maithel has a variety of research interests. He has worked with clinical investigation and outcomes analysis of patients treated for tumors of the liver, biliary tract and pancreas. His current research focus is the correlation between molecular biomarkers and outcomes and chemotherapeutic response for tumors of the liver, biliary tract and pancreas (including colorectal liver metastases and pancreas cancer).

Dr. Maithel is the principal investigator on a novel protocol testing the benefit of administering two chemotherapy drugs instead of one following complete resection of pancreatic cancer. He is also a member of two multi-institutional research consortiums that study tumors of the liver, biliary tract and pancreas and was recently chosen to lead the research committee of the Americas Hepato-Pancreato-Biliary Association (AHPBA).

The Emory Liver & Pancreas Program provides a full range of services at three locations:

Emory University Hospital 1365 Clifton Road, NE Atlanta, GA 30322	Emory University Hospital Midtown 550 Peachtree St, NE Atlanta, GA 30308	Emory Saint Joseph's Hospital 5665 Peachtree Dunwoody Road, NE Atlanta, GA 30342
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