Math is used every day, from balancing a bank account to estimating how much that next tank of gas will cost. Now thanks to mathematicians and researchers at the University of Utah and Baylor College of Medicine, determining whether a liver transplant is needed after an acetaminophen overdose can be added to the list.

A new set of calculus equations have been developed to make it easier for doctors to save acetaminophen overdose patients by quickly estimating how much painkiller they took, when they consumed it and whether they will require a liver transplant to survive. Acetaminophen is a pain and fever medication sold as Tylenol and found in other prescription drugs.

The findings appear in a recent edition of Hepatology. “Speed is essential in listing acute liver failure patients as candidates for transplant,” says study co-author Norman Sussman, associate professor of surgery in BCM’s Liver Kidney and Pancreas Center. Sussman was formerly with the University of Utah University Hospital, where the study took place.

Fred Adler, a professor of mathematics and biology at the University of Utah and coauthor of the study, along with math doctoral student Chris Remien and their colleagues, analyzed the records of 53 acetaminophen overdose patients treated at the University of Utah’s University Hospital to test the equations and show that they quickly and accurately predicted, in retrospect, which patients survived and which died.

They used four common medical lab tests (known as AST, ALT, INR and creatinine) to check the equations.

Those patients that were reviewed varied in how they were exposed to acetaminophen, whether it was a suicide attempt, an accidental single overdose or a chronic, multiple-day overdose, and also in other health issues that could affect the outcome of a transplant. Despite these variations, the method accurately predicted which patients survived and which did not.

“If you’re going to get someone a transplant, you have to do it fast or you miss the boat. The patient may pass the window when transplants can be done. They become too sick and can’t tolerate the transplant,” said Sussman. “If a doctor is uncertain and starts to treat an acetaminophen-poisoning patient with the antidote to combat liver failure—even though the patient may not survive with such medicine—their odds for getting a new liver are reduced.”

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Biography
Charles G. Phan, MD

Charles Phan Gia Quang, MD practices Gastroenterology and Hepatology in Sugar Land, Texas. One of his professional aspirations is to abbreviate the gap of healthcare disparities in the Vietnamese community.

Dr. Phan received his doctorate degree in medicine from the Medical College of Wisconsin in 1992. After his residency in internal medicine, he also completed a gastroenterology fellowship at the University of California–Irvine Medical Center in 1998.

He is board certified in internal medicine and gastroenterology by the American Board of Internal Medicine. Dr. Phan joined the division in January this year. Presently he serves as the Director of the Asian Center, Division of Abdominal Transplantation in the Michael E. DeBakey Department of Surgery at Baylor College of Medicine.

BCM Approved for Transplant Fellowships

**RENAL TRANSPLANT FELLOWSHIP**

The Baylor College of Medicine Renal Transplant Fellowship Program is a 2-year non-ACGME accredited program, which is approved by the Texas Medical Board and the American Society of Transplant Surgeons (ASTS). Our program provides experience primarily at St. Luke’s Cooley Transplant Center. There is extensive hands-on experience in all aspects of the management of end-stage renal disease (ESRD) surgical patients. Operative experience will be gained in transplant surgery, open nephrectomy as well as laparoscopic nephrectomy for living donors. The active team performed 106 adult renal transplants in 2011.

**LIVER TRANSPLANT FELLOWSHIP**

The Baylor College of Medicine Liver Transplant Fellowship Program is a 1-year non-ACGME accredited program, which is approved by the Texas Medical Board and the American Society of Transplant Surgeons (ASTS). Our program provides experience primarily at Texas Children’s Hospital, St. Luke’s Episcopal Hospital, and Michael E. DeBakey VA Medical Center. There is extensive hands-on experience in all aspects of the management of end-stage liver disease (ESLD) surgical patients. Operative experience will be gained in hepatobiliary surgery, liver resection and orthotopic liver transplantation. Dr. Goss and his team performed 110 liver transplants in 2011, making it one of the largest adult and pediatric programs in the country.
St. Luke’s The Woodlands Offering Outreach Clinic for Advanced Cirrhosis Evaluation and Treatment

St. Luke’s The Woodlands Hospital is now providing an outreach clinic for advanced cirrhosis therapies and pre-screening for potential liver transplant with Texas Medical Center physicians. The clinic is staffed by the liver transplant physicians from St. Luke’s Episcopal Hospital Cooley Transplant Center, in affiliation with Baylor College of Medicine. The new outreach clinic is offering services at St. Luke’s The Woodlands Hospital each Thursday afternoon by appointment only. It serves patients with end-stage liver disease, complications of cirrhosis, and benign hepatobiliary disorders.

St. Luke’s The Woodlands Hospital is located at 17200 St. Luke’s Way in The Woodlands, at the southwest corner of SH 242 and I-45. For more information, please call 936.266.2000 or visit www.stlukeswoodlands.com. Appointments are scheduled through our medical center office. 713.798.6243 or Toll free at 1.877.645.4832 or 1.877.64.LIVER.

Clinics and Centers

**ST. LUKE’S COOLEY TRANSPLANT CENTER**
6720 Bertner Avenue
Houston, TX 77030
Toll-Free: 877.685.0361
International Patients: 832.355.3350

**ST. LUKE’S CENTER FOR LIVER DISEASE**
6620 Main, Suite 1475
Houston, Texas 77030
Tel: 713.798-8355
Appointments: 713.798.6243

**TEXAS CHILDREN’S TRANSPLANT SERVICES**
11th floor, Clinical Care Center
6621 Fannin Street
Houston, Texas 77030
Tel: 866.683.8032
For referral or other information: 832-822-1551

**MICHAEL E. DEBAKEY VA MEDICAL CENTER**
2002 Holcombe Boulevard
Houston, Texas 77030
Tel: 713.794.8985
Toll-Free: 800.639.5137, Option 1

Lifesaving Equation Continued from page 1

The new method will let doctors rapidly determine if a patient can survive with antidote treatment or will die unless they get a transplant.

More analysis is needed to further verify the accuracy of this test before a tool can be created and made available for clinicians.

Others who contributed to the study include University of Utah hepatologist Terry Box and Lindsey Waddoups, clinical research coordinator for the University of Utah’s gastroenterology division.

The research was funded by a National Science Foundation grant to the University of Utah’s program in mathematical biology.
Presentations

JOHN M. VIERLING, MD, FACP
Immunosuppressive Drugs: Mechanisms and Uses, Hepatology/Liver Transplantation Seminar, Baylor College of Medicine, Houston, TX, February 13, 2012.


JACQUELINE A. LAPPIN, MD, FRCSI, FACS
The Role of Solid Organ Pancreas Transplant in Diabetes Mellitus, Endocrinology Grand Rounds, Division of Diabetes, Endocrinology and Metabolism, Baylor College of Medicine, Houston, TX, February 9, 2012.

BHAMIDIPATI V.R. MURTHY, MD and JACQUELINE A. LAPPIN, MD, FRCSI, FACS

NORMAN SUSSMAN, MD
Hepatitis B: Diagnosis and Treatment, Hispanic American Medical Association of Houston, Houston, Texas, January 19, 2012.

Liver Physiology, parts 1 & 2, Hepatology/Liver Transplantation Conference, Baylor College of Medicine, Houston, TX, February 6, 2012.

Treating Hepatitis C in 2012, Baylor College of Medicine GI and Liver Course 2012, The University of Texas MD Anderson Cancer Center Basic Science Research Building, Houston, TX, March 3-4, 2012.

Dietary Considerations in NAFLD, Baylor College of Medicine GI and Liver Course 2012, The University of Texas MD Anderson Cancer Center Basic Science Research Building, Houston, TX, March 3-4, 2012.

F. BLAINE HOLLINGER, MD
Hepatitis B Vaccination in Special Circumstances, Research Institute for Health Sciences (RIHES), Chiang Mai University, Chiang Mai, Thailand, January 31, 2012.


Treating Hepatitis C in 2012, Baylor College of Medicine GI and Liver Course 2012, The University of Texas MD Anderson Cancer Center Basic Science Research Building, Houston, TX, March 3-4, 2012.

KHOZEMA HUSSAIN, MD
Hepatic Encephalopathy: What is New in Diagnosis and Treatment, Baylor College of Medicine GI and Liver Course 2012, The University of Texas MD Anderson Cancer Center Basic Science Research Building, Houston, TX, March 3-4, 2012.

PRASUN JALAL, MD
Mini-Symposium on Fatty Liver Disease, Baylor College of Medicine GI and Liver Course 2012, The University of Texas MD Anderson Cancer Center Basic Science Research Building, Houston, TX, March 3-4, 2012.

GAGAN SOOD, MD
Genetic Factors in NAFLD, Baylor College of Medicine GI and Liver Course 2012, The University of Texas MD Anderson Cancer Center Basic Science Research Building, Houston, TX, March 3-4, 2012.

THERESA HARRING, MD


THAO NGUYEN, MD

Publications


Honors and Awards

JOHN M. VIERLING, MD, FACP, was listed in Best Doctors in America, 2012 (his 11th consecutive year).

JOHN M. VIERLING, MD, FACP, was named Secretary-Treasurer of Digestive Diseases Week®.

JOHN M. VIERLING, MD, FACP, was appointed as a Member of the Committee on Appointments and Promotions in the Michael E. DeBakey Department of Surgery at Baylor College of Medicine.

BAYLOR COLLEGE OF MEDICINE has joined the Texas Transplant Society (TTS) as an Institutional Member. TTS was founded in 1987 to facilitate transplantation within the state of Texas. Membership is comprised of transplant institutions, clinicians, nurses, coordinators, laboratory professionals and others who wish to help educate individuals about the critical shortage of organ donors.
Contracts and Grants

JOHN M. VIERLING, MD, FACP, (Co-PI) was awarded several grants from Bristol-Myers Squib entitled, “A Phase 3 Evaluation of BMS-790052 (Daclatasvir) Compared With Telaprevir in Combination With Peg-Interferon Alfa-2a And Ribavirin in Treatment-Naive Patients With Chronic Hepatitis C,” “A Long-Term Follow-Up Study of Subjects Who Participated in a Clinical Trial in Which BMS-650032 and/or BMS-790052 Was Administered for the Treatment of Chronic Hepatitis C,” “A Phase 3, Open Label Study of Safety and Efficacy With BMS-790052 Plus Peg-Interferon Alfa 2a and Ribavirin in Previously Untreated HCV Patients Co-infected With Human Immunodeficiency Virus (HIV) and Hepatitis C Virus (HCV),” “An Open-Label Re-Treatment Study With Peg-Interferon Alfa-2a, Ribavirin and BMS-790052 With or Without BMS-650032 for Subjects With Chronic Hepatitis C,” 2012.

JOHN M. VIERLING, MD, FACP, (Co-PI) was awarded a grant from Intercept Pharmaceuticals entitled, “A Phase 3, Double-Blind, Placebo-Controlled Trial and Long-Term Safety Extension of Obeticholic Acid in Patients With Primary Biliary Cirrhosis,” January, 2012.

JOHN M. VIERLING, MD, FACP, (Co-PI) was awarded two grants from Vertex Pharmaceuticals entitled, “An Open-Label, Phase 4 Study of Telaprevir, Peginterferon Alfa-2a (PEGASYS®), and Ribavirin (COPEGUS®) in Treatment-Experienced Black/African American and Non-Black/African American Subjects With Genotype 1 Chronic Hepatitis C Who Have Not Achieved a Sustained Viral Response With a Prior Course of Interferon-Based Therapy,” and “A Phase 3b Study of 2 Treatment Durations of Telaprevir, Peg-IFN (PEGASYS®), and Ribavirin (COPEGUS®) in Treatment-Naive and Prior Relapser Subjects With Genotype 1 Chronic Hepatitis C and IL28b CC Genotype,” February 2012.

Abdominal Transplant Lecture Series

Lectures will be held on Monday, the second week of each month from 7:00 to 8:00 am. Speakers will present in the BCM – Immune Evaluation Laboratory conference room located in the Neurosensory building, Suite NA425. The lectures, headed by Dr. Ronald Kerman, are geared towards hepatology, liver and renal fellows, and is open to all BCM Students, Faculty and Staff. For more information, contact Sara Tristan at 713-798-3065 email: escamill@bcm.edu.

Tentative Schedule

- **MAY 14, 2012** “Pre-Transplant Evaluation or Antibody Mediated Rejection,” W. Pete Etheridge, MD, St. Luke’s Episcopal Hospital.
- **JUNE 11, 2012** “Hepatology: Aspects Leading Up to Liver Disease,” Risë Stribling, MD, Associate Professor of Surgery, Baylor College of Medicine.
- **JULY 9, 2012** “Surgical Considerations and Complications in Renal Transplantation,” Charles T. Van Buren, MD, Professor of Surgery, Baylor College of Medicine.
- **AUGUST 13, 2012** “Pediatric End-Stage Renal Disease,” Michael C. Braun, MD, Professor of Pediatrics, Baylor College of Medicine, Chief of Renal Services, Texas Children’s Hospital.

New Hires

**HOA QUACH, BS**
Sr. Database Administrator

**DIVYA BHARAT MEHTA**
Medical Assistant II
DONATE LIFE TEXAS, a nonprofit corporation, has been created with the support of the state’s three organ procurement organizations (OPOs). Donate Life Texas is now responsible for managing the state’s organ, tissue, and eye donor registry—the Glenda Dawson Donate Life - Texas Registry—in an effort to increase the number of Texans who commit to donation. State Representative Glenda Dawson, a kidney transplant recipient herself, led the effort to create the registry before her passing in 2006. Individuals who wish to be an organ/tissue donor no longer need to fill out a donor card or have a sticker affixed to their license; they can simply register online at www.donatelifetexas.org.