



AMERICAN SURGICAL ASSOCIATION

Program
of the
133rd Annual Meeting

**JW Marriott
Indianapolis, Indiana**

Thursday, April 4th Friday, April 5th
Saturday, April 6th
2013

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* These sections available on-site in Indianapolis, Indiana, to professional attendees, or by logging into the Members Only Area of the ASA Website at <http://www.americansurgical.info/membersOnly.cgi>.

THE AMERICAN SURGICAL ASSOCIATION**2012–2013****OFFICERS**

President

L.D. Britt

President-Elect

Layton F. Rikkers

Vice-President

Kenneth L. Mattox

Secretary

E. Christopher Ellison

Treasurer

Russell G. Postier

Recorder

Steven C. Stain**COUNCIL**

Donald D. Trunkey.....2010–2013

Kirby I. Bland.....2011–2014

Timothy J. Eberlein.....2012–2015

President, President-Elect, Vice President, Secretary,
Treasurer and Recorder

American Surgical Association

Administrative Offices

500 Cummings Center, Suite 4550

Beverly, MA 01915

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Email: admin@americansurgical.infoOr visit: www.americansurgical.info**ADVISORY MEMBERSHIP COMMITTEE**Robin S. McLeod, *Chair*.....2005–2016

Monica M. Bertagnolli.....2010–2015

Alfred E. Chang.....2009–2014

William C. Chapman.....2012–2017

Diana L. Farmer.....2012–2017

Julie Ann Freischlag.....2009–2014

Anthony A. Meyer.....2010–2015

Monica Morrow.....2008–2013

Sean J. Mulvihill.....2009–2014

Alec Patterson.....2011–2016

Raphael E. Pollock.....2008–2013

Grace S. Rozycki.....2009–2016

Michael G. Sarr.....2011–2016

Craig R. Smith.....2012–2017

Steven C. Stain.....2008–2013

R. James Valentine.....2008–2013

ARRANGEMENTS COMMITTEE**133rd Annual Meeting**Robert J. Havlik, *Chair***AUDIT COMMITTEE**Richard C. Karl, *Chair*.....2011–2013

Lynt Johnson.....2013–2015

Francis D. Moore, Jr.....2012–2014

HONORARY FELLOWSHIPS COMMITTEEJay L. Grosfeld, *Chair*.....2007–2013

Alexander W. Clowes.....2009–2015

John G. Hunter.....2007–2013

Courtney M. Townsend, Jr.....2011–2017

Donald D. Trunkey.....2011–2017

Michael J. Zinner.....2009–2015

FLANCE-KARL AWARD COMMITTEE

Stanley W. Ashley, <i>Chair</i>	2008–2013
Ronald P. DeMatteo	2010–2015
Richard A. Hodin	2009–2014
Thomas F. Tracy, Jr.	2011–2016
Ronald J. Weigel	2012–2017

NOMINATING COMMITTEE

Donald D. Trunkey, <i>Chair</i>	2010–2015
Kirby I. Bland	2011–2016
Timothy J. Eberlein.....	2012–2017
Courtney M. Townsend, Jr.	2008–2013
Anthony D. Whittemore.....	2009–2014

PROGRAM COMMITTEE

R. Daniel Beauchamp, <i>Chair</i>	2008–2013
Jeffrey A. Drebin.....	2012–2017
Theodore N. Pappas.....	2009–2014
Loring W. Rue, III.....	2011–2016
Valerie W. Rusch.....	2010–2015
President, President-Elect, Secretary, and Recorder, ex officio with vote	

**TRUSTEES OF THE
AMERICAN SURGICAL ASSOCIATION
FOUNDATION****Chair**

Jay L. Grosfeld

Vice Chair

Courtney M. Townsend, Jr.

Secretary

E. Christopher Ellison

Treasurer

Russell G. Postier

Trustees

Kirby I. Bland
Donald D. Trunkey
Anthony D. Whittemore

Ex-Officio

L.D. Britt

REPRESENTATIVES**AMERICAN BOARD OF SURGERY**

Karen J. Brasel.....	2012–2018
L.D. Britt.....	2007–2013
V. Suzanne Klimberg	2007–2013
Selwyn M. Vickers.....	2009–2015

AMERICAN BOARD OF THORACIC SURGERY

Robert S.D. Higgins.....	2011–2017
Richard J. Shemin.....	2005–2015

**AMERICAN COLLEGE OF SURGEONS,
BOARD OF GOVERNORS**

Ernest E. Moore, Jr.....	2010–2013
Susan L. Orloff.....	2008–2014

**AMERICAN COLLEGE OF SURGEONS,
ADVISORY COUNCIL FOR SURGERY**

W. Scott Melvin	2012–2015
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**AMERICAN COLLEGE OF SURGEONS,
SURGICAL RESEARCH COMMITTEE**

Thomas M. Krummel.....	2007–2013
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**ASSOCIATION OF AMERICAN MEDICAL COLLEGES,
COUNCIL OF ACADEMIC SOCIETIES**

William G. Cioffi	2010–2013
Linda G. Phillips	2010–2013

NATIONAL ASSOCIATION FOR BIOMEDICAL RESEARCH

Yuman Fong.....	2005–2013
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**FUTURE MEETINGS OF THE
AMERICAN SURGICAL ASSOCIATION**

April 10–12, 2014
Marriott Copley Place
Boston, Massachusetts

April 23–25, 2015
Marriott Marquis
San Diego, California

GENERAL INFORMATION

The JW Marriott in Indianapolis, Indiana is the headquarters of the American Surgical Association for the 133rd Annual Meeting, April 4–6, 2013.

REGISTRATION: The Registration Desk for the 133rd Annual Meeting is located in the outside of the White River Ballroom during the following hours:

Wednesday, April 3 rd	2:00 p.m.–6:00 p.m.
Thursday, April 4 th	7:00 a.m.–5:15 p.m.
Friday, April 5 th	7:30 a.m.–5:00 p.m.
Saturday, April 6 th	7:30 a.m.–11:00 a.m.

Fellows and invited guests who have pre-registered are required to sign the registration book only once and pick up registration materials at the ASA Registration Desk. Registration is also available on-site.

SPEAKERS AND DISCUSSANTS: All manuscripts presented at the Scientific Sessions of the Annual Meeting must be submitted electronically to *The Annals of Surgery* at <http://www.editorialmanager.com/annsurg> prior to the presentation of the paper. The time allowed for each presentation is ten minutes. Following the presentation, the Primary Discussant will be allotted three minutes for discussion. All additional discussants will be allotted two minutes. The total amount of time provided for discussion is fifteen minutes. Please note the use of slides will NOT be permitted for discussants.

SPEAKER READY ROOM: The Speaker Ready Room is located in Room 107. Authors are requested to submit their PowerPoint presentations on USB memory drive or CD-ROM the day *prior* to their session to the technician in the Speaker Ready Room. Speaker Ready Room hours are:

Wednesday, April 3 rd	2:00 p.m.–6:00 p.m.
Thursday, April 4 th	7:00 a.m.–5:15 p.m.
Friday, April 5 th	7:30 a.m.–5:00 p.m.
Saturday, April 6 th	7:30 a.m.–11:00 a.m.

BANQUET: The Annual Reception and Banquet is open to Fellows of the Association and their registered spouses, as well as Invited Guest Physicians and their registered spouses. The Reception and Banquet is scheduled for Friday, April 5th with the reception taking place in the Foyer of the White River Ballroom and dinner in the White River Ballroom Salon E-F (*black tie preferred, but dark suits are acceptable*).

SPECIAL EVENTS:

Address by the President	Thursday, April 4 th	10:50 a.m.
Forum Discussion	Friday, April 5 th	10:30 a.m.
“Healthcare Reform: The Impact on American Surgery”		
Executive Session (Fellows Only)	Friday, April 5 th	4:00 p.m.
Reception & Banquet	Friday, April 5 th	7:00 p.m.

SPOUSE/GUEST HOSPITALITY: The Spouse/Guest Hospitality Suite is located in Room 102 Thursday, April 4th through Saturday, April 6th. The Local Arrangements Committee will have information on activities of interest and maps available in the room.

REGISTRANT BADGES: Badges are required for admittance to the ASA Scientific Sessions. Badge colors represent the following designations:

Blue — Member/Fellow
 Cream — Honorary Fellow
 Green — Guest Physician
 White — Spouse/Guest

ACCREDITATION INFORMATION

CME MISSION/PURPOSE AND CONTENT

The Continuing Medical Education Mission of the American Surgical Association is to provide a national forum for presenting the developing state-of-the-art and science of general and sub-specialty surgery and the elevation of the standards of the medical/surgical profession. This mission is accomplished primarily by conducting an annual scientific meeting consisting of selected presentations containing the most current information available on clinical and research topics related to surgery or surgical specialties, including studies on outcomes, practice and science of surgery and ethical and other issues that affect its practice. In addition, the meeting features special invited speakers who address a variety of topics directly or indirectly related to the practice of surgery. The meeting is presented for the benefit of those physicians, surgeons and researchers involved in the study, treatment and cure of diseases associated with the entire spectrum of human disease. The meeting provides for a free exchange of information and serves the professional needs of the membership and invited guests. The Association's mission is augmented by the publication of the scientific papers presented at the annual meeting in the *Annals of Surgery*, a monthly scientific publication distributed to subscribers throughout the world and by the publication of the Proceedings of the Annual Meeting and the scientific papers in the *Transactions of the American Surgical Association*, an annual publication distributed to the membership.

LEARNING OBJECTIVES

The Annual Meeting of the American Surgical Association is designed to provide two and one half days of comprehensive educational experiences in the fields of clinical surgery, experimental surgery and related sciences, surgical education and the socioeconomic aspects of surgical care. It is the Association's intent to bring together at this meeting the leading surgeons and scientists from North America and other continents to freely and openly discuss their latest clinical and research findings.

LEARNING OUTCOMES

At the conclusion of the Annual Meeting, participants should have an enhanced understanding of the latest techniques and current research specifically related to the fields of clinical surgery, experimental surgery and related sciences, surgical education and the socioeconomic aspects of surgical care. Through the open discussion periods and the Forum Discussion, participants will have the opportunity to hear the pros and cons of each paper presented to gain an overall perspective of their current practices and to utilize results presented in order to select appropriate surgical procedures and interventions for their own patients and to integrate state-of-the-art knowledge into their current practice and/or research.

EDUCATIONAL METHODS

Authored papers supported by audio/visual presentations, panel discussion and open group discussion.

ACCREDITATION STATEMENT



This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the American College of Surgeons and the American Surgical Association. The American College of Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

AMA PRA CATEGORY 1 CREDITS™

The American College of Surgeons designates this live activity for a maximum of 16 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

New Honorary Fellows Introductions

Ian Civil



Ian Civil is a native of Rotorua, a small city 140 miles south of Auckland, New Zealand. He received his Doctoral Degree from the University of Auckland in 1976, and then returned to Rotorua for his “internship” in surgery. After a year he returned to Auckland as a surgical registrar, completing his chief registrar year in 1983. Dr. Civil came to the US for a vascular fellowship at the Cleveland Clinic, which he followed with a two-year fellowship in trauma at the RWJ Camden campus. He returned to Auckland in 1987 where he has been for the past 25 years. He

has served as the director of Trauma Services at Auckland Hospital for over two decades, as well as holding the title of Senior Lecturer in trauma and military surgery at the University of Auckland, School of Medicine. For the last four years he has also been the Director of Surgery for the Auckland Health Board. Ian served his country in the NZ Army Medical Corp and was stationed in Bahrain for the first Gulf War.

Dr. Civil’s footprint in international surgery is large. He has been President of the Royal Australasian College of Surgeons (RACS), the Australasian Trauma Society, the Association for the Advancement of Automotive Medicine, and the International Association for Trauma Surgery and Intensive Care (IATSIC). His service to RACS on its many committees and Boards has spanned 2 decades. He serves as the Editor of everything non orthopedic for the journal, Injury and is a senior editor of the ANZ Journal of Surgery, as well as serving on the Editorial Board of the World Journal of Surgery. He has delivered over 100 lectures, internationally, and has published over 100 peer reviewed articles and editorials on trauma care and trauma systems. His work has been recognized with awards from the Southeastern Surgical, The Royal Australasian College of Surgeons, the NZ Army Medical Corp, and the Order of St. John, a benevolent society providing charity care to the injured, from ambulances to first aid education. Dr. Civil has been married to a PhD architect, Denise Civil for over 37 years, and has two grown children, Nina and Timothy.

Bernard Ribeiro



Sir, (now Lord) Bernard Ribeiro, Kt, CBE, FACS (Hon), FRCS (Engl) was appointed to the United Kingdom’s House of Lords in 2010. This followed his recognition in 2004 as Commander of the Most Excellent Order of the British Empire (CBE), and in 2009 when he was appointed a Knight Bachelor in the New Years Honours List. When his elevation to the peerage was announced from 10 Downing Street in London in 2010, one of the attributes noted was his work with the American College of Surgeons Research Institute.

Truly an international surgeon, Bernie (as he is known), is of British/Ghanian nationality. He was educated at the Dean Close School in Cheltenham. Following appointment as consultant surgeon to the Basildon Hospital, he pioneered laparoscopic surgery in that institution and developed educational programs which resulted in it receiving University status.

His leadership contributions are extensive, and include Presidency of the Association of Surgeons of Great Britain and Ireland. In 2008, he was elected to a three year term as President of the Royal College of Surgeons of England. He presided over the expansion of Wolfson Surgical Skills Laboratory and a review of the Raven Department of Education. This presidency was noteworthy as it occurred when the National Service (NHS) radically changed the format of British education, in a plan entitled Modernizing Medical Careers. This caused insufficient training positions for trainees already in the pathway to completing surgical education. It also occurred when the European Working time Directive (EWTD) was mandating reduced hours for trainees. Bernie took a strong stand against these moves while President of the RCS. Bernie’s successor as President of the Royal College of Surgeons, Norman Williams, described Bernie’s marshaling of resources and support for the RCS position on surgical training as akin to the way Lord Nelson had marshaled the Navy against Napoleon at Trafalgar!

During the time when Bernie was President of the Royal College Surgeons, the Accreditation Council on Graduate Medical Education (ACGME) was applying the 80 hour workweek in the United States. Bernie joined leaders of the American College of Surgeons in testimony to the deleterious effect of work hour regulation before the Institute of Medicine Committee on this issue.

Bernie is a family man. He and wife Liz have one son and three daughters. He is also now a grandfather.

His home is on the River Itchen where he pursues his passion for fishing. He is also a hunter with his dog, Meg, that he claims is a good retriever.

Active in the Affairs of the House of Lords, Lord Ribeiro has hosted graduate students and fellow surgeons in the House of Lords.

Paul K.H. Tam



Professor Tam was born May 27, 1952. He is married, has two children, and his present positions are Pro Vice Chancellor of Research at The University of Hong Kong, Chair Professor of Pediatric Surgery at The University of Hong Kong, Professor of Biochemistry, Honorary, at The University of Hong Kong, Dean of The Graduate School at The University of Hong Kong, Director, Knowledge Exchange Office, The University of Hong Kong and is also Director of two institutes of research and innovation. His present position is Pro Vice Chancellor and Vice President, Chair of Pediatric Surgery at The University of Hong Kong. He is on ten

editorial boards including The Journal of Pediatric Surgery and The Scientific Advisory Counsel of the Sophia Foundation in The Netherlands.

Some of the recent awards and invited lectures include The 44th Annual Meeting of The Japanese Society of Pediatric Surgeons in 2007. He was the Lawrence G. Crowley Distinguished Lecturer in the Department of Surgery and Pediatrics at Stanford University in 2007, gave the 54th Annual International Congress of British Association of Pediatric Surgeons in 2007. In 2010, he gave the Suruga Lecture at the 22nd Congress of the Asian Association of Pediatric Surgeons; he was a Distinguished Lecturer on Surgery in the 21st Century at the Department of Surgery at the University of Hong Kong. He is listed as Top Scientist in Essential Science Indicators in 2009. He has been given the Lifetime Achievement Award at the 22nd Congress of the Asian Association of Pediatric Surgeons; he also was awarded the International Outstanding Leadership Award in Endoscopy. He currently holds a total of 94.3 million Hong Kong dollars in grants obtained, of which, 73.2 million were acquired in the past eight years. He is sought after for giving lectures in pediatric surgery.

He is a prodigious writer, which includes 30 chapters in international text books and 320 original articles in international journals. He is listed at a Top 1% Scientist by ISI, with total citations currently at 10,751. His research interest is in genetics and developmental biology of Hirschsprung's Disease and other birth defects. He is also involved in genomics of childhood tumors, immunology and inflammation.

In summary, Professor Tam is a gifted pediatric surgeon, educator and scientist. He is very worthy to be an honorary member of the American Surgical Association.

SCHEDULE-AT-A-GLANCE

THURSDAY, APRIL 4th

- | | | |
|------------|--|--------------------------|
| 8:15 a.m. | President's Opening Remarks | White River Ballroom E-F |
| | Secretary's Welcome and
Introduction of New Fellows
Elected in 2012 | |
| | President's Introduction of
Honorary Fellows | |
| | Report of the Committee on
Arrangements | |
| | Presentation of the Medallion for
Advancement of Surgical Care | |
| 9:10 a.m. | Scientific Session I | White River Ballroom E-F |
| | <i>Moderator: L.D. Britt, M.D., M.P.H.</i> | |
| 10:50 a.m. | Address by the President | White River Ballroom E-F |
| | <i>Introduction: Kenneth L. Mattox, M.D.</i>
<i>Address: L.D. Britt, M.D., M.P.H.</i> | |
| 1:30 p.m. | Scientific Session II | White River Ballroom E-F |
| | <i>Moderator: Layton F. Rikkers, M.D.</i> | |

FRIDAY, APRIL 5th

- 7:00 a.m. ASA Women in Surgery Breakfast White River Ballroom A
- 8:00 a.m. Scientific Session III White River Ballroom E-F
Moderator: L.D. Britt, M.D., M.P.H.
- 10:30 a.m. Forum Discussion: White River Ballroom E-F
“Healthcare Reform: The Impact on American Surgery”
Moderator: L.D. Britt, M.D., M.P.H.
- 1:30 p.m. Scientific Session IV White River Ballroom E-F
Moderator: Kenneth L. Mattox, M.D.
- 4:00 p.m. Executive Session White River Ballroom E-F
(Fellows Only)
Presentation of the
Flance-Karl Award
- 7:00 p.m. Annual Reception White River Ballroom
Prefunction
- 8:00 p.m. Annual Banquet White River Ballroom E-F
*(Black tie preferred, but
dark suits are acceptable.)*

SATURDAY, APRIL 6th

- 8:00 a.m. Scientific Session V White River Ballroom E-F
Moderator: New President- Elect
- 11:00 a.m. Adjourn

**AMERICAN SURGICAL ASSOCIATION
133rd ANNUAL MEETING
April 4–6, 2013
The JW Marriott
Indianapolis, Indiana**

PROGRAM OUTLINE**THURSDAY, APRIL 4, 2013**

**8:15 AM – 9:10 AM
OPENING SESSION**

President’s Opening Remarks

**Secretary’s Welcome & Introduction of New Fellows
Elected in 2012**

President’s Introduction of Honorary Fellows**Report of the Committee on Arrangements**

**Presentation of the Medallion for Advancement of
Surgical Care**

9:10 AM – 11:00 AM

SCIENTIFIC SESSION I

Moderator: L.D. Britt, M.D., M.P.H.

9:10 AM – 9:35 AM

1

**Acute Cholecystitis: Early Versus Delayed
Cholecystectomy—A Multicenter Randomized
Trial (ACDC Study, NCT00447304)**

Carsten N. Gutt*¹, Jens Encke*², Jörg Köninger*³,
Julian C. Harnoss*⁴, Karl Kipfmüller*⁵, Thorsten Götze*⁶,
Markus T. Golling*⁷, Ernst Klar*⁸, Katharina Feilhauer*³,
Wolfram G. Zoller*³, Karsten Ridwelski*⁹, Michael R.
Schön*¹⁰, Helmut K. Seitz*¹¹, Wolfgang Stremmel*⁴,

Markus W. Büchler⁴

¹Memmingen Hospital, Memmingen, Germany; ²Johanna-
Etienne-Hospital, Neuss, Germany; ³Katharinen Hospital,
Stuttgart, Germany; ⁴University Hospital, Heidelberg,
Germany; ⁵St. Marien Hospital, Muelheim, Germany; ⁶Ketteler
Hospital, Offenbach, Germany; ⁷Diakonie Hospital,
Schwaebisch Hall, Germany; ⁸University Hospital, Rostock,
Germany; ⁹Magdeburg Hospital, Magdeburg, Germany;
¹⁰Karlsruhe Hospital, Karlsruhe, Germany; ¹¹University
Hospital Heidelberg, Heidelberg, Germany

9:35 AM – 10:00 AM

2

**Outcomes for Abdominal Aortic Aneurysm (AAA)
Repair in Patients with Chronic Renal Insufficiency (CRI):
Comparison Between Endovascular (EVAR) and Open
(OPEN) Repair**

Bao-Ngoc H. Nguyen*, Richard Neville*, Rodeen Rahbar*,
Richard Amdur*, Anton Sidawy

George Washington University, Washington, DC

*By invitation

10:00 AM – 10:25 AM

3

**A Plasma MicroRNA Panel for Detection of Advanced
Colorectal Adenomas**

Susan Galandiuk*, Ziad Kanaan*, M. Robert Eichenberger*,
Henry Roberts*, Clayton Weller*, Jianmin Pan*, Shesh Rai*

University of Louisville, Louisville, KY

10:25 AM – 10:50 AM

4

**A Randomized Controlled Trial of Modified Whole Blood
Versus Component Therapy in Severely Injured Patients
Requiring Transfusions**

Bryan A. Cotton*, Jeannette Podbielski*, Elizabeth Camp*,
Timothy Welch*, Deb del Junco*, Rosemary A. Kozar,
Yu Bai*, Rhonda Hobbs*, Charles E. Wade*, Brijesh S. Gill*,
Michelle K. McNutt*, George H. Tyson*, Laura Moore*,
Rondel Albarado*, John B. Holcomb

University of Texas Health Science Center-Houston, Houston, TX

10:50 AM – 12:00 PM

PRESIDENTIAL ADDRESS

10:50 AM – 11:00 AM

Introduction of the President

Kenneth L. Mattox, M.D.

11:00 AM – 12:00 PM

Address by the President

L.D. Britt, M.D., M.P.H.

*By invitation

1:30 PM – 5:15 PM

SCIENTIFIC SESSION II

Moderator: Layton F. Rikkers, M.D.

1:30 PM – 1:55 PM

5

The Evolution of Liver Transplantation During Three Decades: Analysis of 5347 Consecutive Liver Transplants at a Single Center

Vatche G. Agopian*, Henrik Petrowsky*, Ali Zarrinpar*, Fady M. Kaldas*, Douglas G. Farmer, Johnny C. Hong*, Michael Harlander-Locke*, Curtis Holt*, Francisco Durazo*, Sammy Saab*, Steven Han*, Leonard I. Goldstein*, Hasan Yersiz*, Jonathan R. Hiatt, **Ronald W. Busuttil**
University of California, Los Angeles, Los Angeles, CA

1:55 PM – 2:20 PM

6

Long-Term Results of Adjuvant Imatinib Mesylate in Localized, High Risk, Primary Gastrointestinal Stromal Tumor (GIST): The American College of Surgeons Oncology Group (ACOSOG) Z9000 trial

Ronald P. DeMatteo¹, Karla Ballman*², Cristina Antonescu*¹, Christopher Corless*³, Violetta Kolesnikova*³, Margaret von Mehren*⁴, Martin McCarter*⁵, Jeffrey Norton⁶, Robert Maki*⁷, Peter W.T. Pisters⁸, George Demetri*⁹, Murray F. Brennan¹, Kouros Owzar*¹⁰

¹Memorial Sloan-Kettering Cancer Center, New York, NY; ²Mayo Clinic, Rochester, MN; ³Oregon Health Sciences University, Portland, OR; ⁴Fox Chase Cancer Center, Philadelphia, PA; ⁵University of Colorado Denver School of Medicine, Denver, CO; ⁶Stanford University School of Medicine, Stanford, CA; ⁷Mount Sinai School of Medicine, New York, NY; ⁸University of Texas MD Anderson Cancer Center, Houston, TX; ⁹Dana Farber Cancer Institute, Boston, MA; ¹⁰Duke University, Durham, NC

*By invitation

2:20 PM – 2:45 PM

7

Assessing Risk of Readmission After General, Vascular, and Thoracic Surgery Using ACS-NSQIP

Timothy M. Pawlik¹, Donald Lucas*², Omar Hyder*¹, Rebecca Dodson*¹, Nita Ahuja*¹, Christopher Wolfgang*¹, Eric Schneider*¹, Michael Choti¹

¹Johns Hopkins, Baltimore, MD; ²Walter Reed National Military Medical Center, Bethesda, MD

2:45 PM – 3:10 PM

8

General Surgery Residency Inadequately Prepares Trainees for Fellowship: Results of a North American Survey of Program Directors

Samer Mattar*¹, Rebecca M. Minter*², Adnan Alseidi*³, D. Rohan Jeyarajah*⁴, Lee L. Swanstrom⁵, Steven D. Wexner⁶, Ralph W. Aye*⁷, Jose Martinez*¹, Morris E. Franklin*⁸, Sharona B. Ross*⁹, Maurice E. Arregui*¹⁰, Dan B. Jones¹¹, Bruce D. Schirmer¹²

¹Indiana University, Indianapolis, IN; ²University of Michigan, Ann Arbor, MI; ³Virginia Mason Medical Center, Seattle, WA; ⁴Methodist Dallas Medical Center, Dallas, TX; ⁵Oregon Health and Science University, Portland, OR; ⁶Cleveland Clinic Florida, Westin, FL; ⁷University of Pittsburgh, Pittsburgh, PA; ⁸Texas Endosurgical Institute, San Antonio, TX; ⁹Florida Hospital, Tampa, FL; ¹⁰St. Vincent's Hospital, Indianapolis, IN; ¹¹Harvard University, Boston, MA; ¹²University of Virginia, Charlottesville, VA

3:10 PM – 3:35 PM

9

Evaluating Outcomes and Trends of Transthoracic and Transhiatal Esophagectomy: A Decade Analysis of High Volume Centers

Mehran D. Jafari*¹, Wissam J. Halabi*¹, Nguyen Q. Vinh*², Brian R. Smith*¹, Michael J. Stamos¹, Ninh T. Nguyen¹

¹University of California, Irvine, Orange, CA; ²University of California, Irvine, Irvine, CA

*By invitation

3:35 PM – 4:00 PM**10****Early Operation Is Associated with a Survival Benefit for Patients with Adhesive Bowel Obstruction****Pedro G. Teixeira***, Efstathios Karamanos*, Peep Talving*, Kenji Inaba*, Lydia Lam*, Demetrios Demetriades*University of Southern California, Los Angeles, CA***4:00 PM – 4:25 PM****11****Branch Duct Intraductal Papillary Mucinous Neoplasms: Does Cyst Size Change the Tip of the Scale? A Critical Analysis of the Revised International Consensus Guidelines in a Large Single-Institutional Series****Klaus Sahora***, Mari Mino-Kenudson*, Sarah Thayer*, Cristina Ferrone*, William Brugge*, Dushyant Sahani*, Martha Pitman*, Andrew Warshaw, Keith Lillemoe, Carlos Fernandez-Del Castillo*Massachusetts General Hospital, Boston, MA***4:25 PM – 4:50 PM****12****The Comparative Effectiveness of Vascular Surgeons Over Interventionalists in Endovascular Repair of Abdominal Aortic Aneurysms**Brandon A. McCutcheon*¹, David C. Chang*¹, John Rose*¹, Ralitza Parino*¹, Logan Marcus*¹, Denis F. Bandyk¹, Samuel E. Wilson², **Mark A. Talamini**¹*¹UC San Diego School of Medicine, San Diego, CA; ²UC Irvine School of Medicine, Irvine, CA*

*By invitation

4:50 PM – 5:15 PM**13****Defining “The Elderly”; Undergoing Major Gastrointestinal Resections: Receiver Operating Characteristic Analysis of a Large ACS-NSQIP Cohort****Ashwin A. Kurian***¹, Lian Wang*², Gary Grunkemeier*², Neil H. Bhayani*¹, Lee L. Swanstrom³*¹Providence Portland Cancer Center, Portland, OR; ²Medical Data Research Center, Providence Health & Services, Portland, OR; ³Oregon Clinic GMIS Division, Portland, OR*

*By invitation

FRIDAY, APRIL 5, 2013**7:00 AM – 8:00 AM****ASA WOMEN IN SURGERY BREAKFAST****8:00 AM – 10:30 AM****SCIENTIFIC SESSION III***Moderator: L.D. Britt, M.D., M.P.H.***8:00 AM – 8:25 AM****14****Improved Outcomes of Bile Duct Injuries in the 21st Century****Henry A. Pitt**, Stuart Sherman*, Matthew S. Johnson*, Andrew N. Hollenbeck*, Jonathan Lee*, Alex K. Malone*, Keith D. Lillemoe, Glen A. Lehman**Indiana University School of Medicine, Indianapolis, IN***8:25 AM – 8:50 AM****15****Long-Term Survival and Recurrence Rates Following Trimodality Therapy of Esophageal Adenocarcinoma—The Influence of Histologic Tumor Viability****Ashleigh M. Francis***, Boris Sepesi*, Arlene M. Correa*, Reza J. Mehran*, David C. Rice*, Jack A. Roth, Ara A. Vaporciyan, Garrett L. Walsh*, Stephen G. Swisher, Wayne L. Hofstetter**MD Anderson Cancer Center, Houston, TX***8:50 AM – 9:15 AM****16****Long-Term Results of a Non-Operative Strategy (Watchful Waiting) for Men with Minimally Symptomatic Inguinal Hernias****Robert J. Fitzgibbons, Jr.**, Bala Ramanan*, Shipra Arya*, Scott A. Turner*, Timothy J. Dickhudt*, Xue Li*, Domenic Reda*, James Gibbs**Creighton University, Omaha, NE*

By invitation*9:15 AM – 9:40 AM****17****A Risk Prediction Model for Determining Appropriateness of CEA in Patients with Asymptomatic Carotid Artery Stenosis****Mark F. Conrad***, Jean W. Kang*, Shankha Mukhopadhyay*, Virendra I. Patel*, Glenn M. LaMuraglia, Richard P. Cambria*Massachusetts General Hospital, Boston, MA***9:40 AM – 10:05 AM****18****The Cost of Obesity: National Cost Estimates of Obese Versus Non-Obese Patients for Non-Bariatric Inpatient Operative Procedures in the USA****Rodney J. Mason***¹, Jolene R. Moroney*², Thomas V. Berne¹¹*University of Southern California, Los Angeles, CA;*²*University of California, Los Angeles, Los Angeles, CA***10:05 AM – 10:30 AM****19****250 Robotic Assisted Major Pancreatic Resections****Herbert J. Zeh, III***¹, Brian A. Boone*¹, Arthur James Moser*², David L. Bartlett¹, Amer H. Zuriekat*¹¹*University of Pittsburgh, Pittsburgh, PA;* ²*BIDMC, Harvard, Boston, MA*

**By invitation*

10:30 AM – 12:00 PM**FORUM DISCUSSION****Healthcare Reform: The Impact on American Surgery***Moderator: L.D. Britt, M.D., M.P.H.***David B. Hoyt, M.D.***Executive Director
American College of Surgeons
Chicago, IL***R. Scott Jones, M.D.***Past President
American College of Surgeons
Chicago, IL***Jacob Drapkin***Vice President, Healthcare Economics
Ethicon, Inc.
Cincinnati, OH***1:30 PM – 4:00 PM****SCIENTIFIC SESSION IV***Moderator: Kenneth L. Mattox, M.D.***1:30 PM – 1:55 PM****20****Local Excision of Colon or Rectal Carcinoma Is Associated with Adverse Survival Compared with Radical Resection: A Surveillance, Epidemiology, and End Results (SEER) Population-Based Study***Aneel Bhangu*, Gina Brown*, John Nicholls*, John Wong, Ara Darzi*, Paris Tekkis***Royal Marsden Hospital, London, United Kingdom***1:55 PM – 2:20 PM****21****Minority Trauma Patients Tend to Cluster at Trauma Centers with Worse-than-Expected Mortality: Can This Phenomenon Help Explain Racial Disparities in Trauma Outcomes?***Adil H. Haider*¹, Zain G. Hashmi*¹, Syed Nabeel Zafar*², Xuan Hui*¹, Eric B. Schneider*¹, David T. Efron*¹, Elliott R. Haut*¹, Lisa A. Cooper*³, Ellen MacKenzie*³, Edward E. Cornwell, III²**¹Johns Hopkins School of Medicine, Baltimore, MD; ²Howard University College of Medicine, Washington, DC; ³Johns Hopkins Bloomberg School of Public Health, Baltimore, MD***2:20 PM – 2:45 PM****22****Slower Walking Speed Forecasts Increased Postoperative Morbidity and One-Year Mortality Across Surgical Specialties***Thomas N. Robinson*¹, Daniel S. Wu*¹, Angela Sauaia*¹, Christina L. Dunn*¹, Jennifer Stevens-Lapley*¹, Marc Moss*¹, Joseph C. Cleveland Jr.*¹, Greg V. Stieglmann¹, Sharon K. Inouye*²**¹University of Colorado, Aurora, CO; ²Harvard University, Boston, MA*

**By invitation*

2:45 PM – 3:10 PM**23****Elevated Levels of Plasma Mitochondrial DNA DAMPs Are Linked to Clinical Outcome in Severely Injured Human Subjects**Jon D. Simmons*, Y. Larry Lee*, Sujata Mulekar*, Jamie K. Hill*, Sidney B. Brevard*, Richard P. Gonzalez*, Mark N. Gillespie*, **William O. Richards***University of South Alabama, Mobile, AL***3:10 PM – 3:35 PM****24****Mortality and Management of Surgical Necrotizing Enterocolitis in the United States**Melissa Hull*, Jeremy Fisher*, Ivan Gutierrez*, Brian A. Jones*, Kuang Horng Kang*, Michael Kenny*, David Zurakowski*, Biren Modi*, Jeffrey Horbar*, **Tom Jaksic***Children's Hospital Boston, Boston, MA***3:35 PM – 4:00 PM****25****The Clinical Significance of an Elevated Postoperative Glucose Value in Non-Diabetic Patients After Colorectal Surgery: Evidence for the Need for Tight Glucose Control? Ravi P. Kiran*, Matthias Turina*, Jeff Hammel*, Victor W. Fazio***Cleveland Clinic Foundation, Cleveland, OH***4:00 PM – 5:00 PM****EXECUTIVE SESSION****ASA Fellows Only****Presentation of the Flance-Karl Award****7:00 PM ANNUAL RECEPTION****8:00 PM ANNUAL BANQUET****Guest Speaker****From Surgery to Politics**

Lord Bernard Ribeiro

*By invitation

SATURDAY, APRIL 6, 2013**8:00 AM – 11:00 AM****SCIENTIFIC SESSION V***Moderator: New President-Elect***8:00 AM – 8:25 AM****26****Continuous Intraoperative Temperature Measurement and Surgical Site Infection Risk: Analysis of Anesthesia Information System Data in 1,008 Colorectal Procedures Genevieve B. Melton*¹, Jon D. Vogel*², Brian R. Swenson*³, Feza H. Remzi*², David A. Rothenberger¹, Elizabeth C. Wick*⁴***¹University of Minnesota, Minneapolis, MN; ²Cleveland Clinic Foundation, Cleveland, OH; ³Mercy Clinic General and Specialty Surgery, Columbia, MO; ⁴Johns Hopkins Medical Institutions, Baltimore, MD***8:25 AM – 8:50 AM****27****Improving Mortality Following Emergency Surgery in Older Patients Requires Focus on Complication Rescue Kyle H. Sheetz*, Seth A. Waits*, Robert W. Krell*, Darrell A. Campbell, Jr., Michael J. Englesbe*, Amir A. Ghaferi****University of Michigan, Ann Arbor, MI***8:50 AM – 9:15 AM****28****RAS Mutational Status Predicts Patterns of Recurrence and Survival in Patients Undergoing Hepatectomy for Colorectal Liver Metastases**

Jean-Nicolas Vauthey, Giuseppe Zimmitti*, Junichi Shindoh*, Su S. Chen*, Scott Kopetz*, Andreas Andreou*, Steven S. Curley, Thomas A. Aloia*, Dipen M. Maru*

MD Anderson Cancer Center, Houston, TX

*By invitation

9:15 AM – 9:40 AM**29****Can Diabetes Be Surgically Cured? Long Term Metabolic Effects of Bariatric Surgery in Obese Patients with Type 2 Diabetes Mellitus**

Stacy A. Brethauer*, Ali Aminian*, Esam Batayyah*, Hector Romero-Talamas*, Hideharu Shimizu*, Andrea Zelisko*, Helen M. Heneghan*, Bipan Chand*, Philip R. Schauer

Bariatric and Metabolic Institute, Cleveland Clinic, Cleveland, OH

9:40 AM – 10:05 AM**30****Long Term Maturation of Congenital Diaphragmatic Hernia Treatment Results**

David W. Kays*, Saleem Islam*, Joy Perkins*, Shawn Larson*, James L. Talbert

University of Florida, Gainesville, FL

10:05 AM – 10:30 AM**31****Mobilization of the Obese Patient and Prevention of Injury**

Christine M. Walden*¹, Herbert R. Garrison*², Michael Rotondo¹, Linda D. Holfer*³, William B. Floyd*¹, **Walter J. Pories**³

¹Vidant Medical Center and Brody School of Medicine, East Carolina University, Greenville, NC; ²Vidant Medical Center and Brody School of Medicine, East Carolina University, Greenville, NC; ³Brody School of Medicine, East Carolina University, Greenville, NC

10:30 AM – 10:55 AM**32****Reintervention Following EVAR and Open Surgical Repair of AAA: A 15-Year Experience**

Mustafa Al-Jubouri*, Subhash Thakur*, Faisal Aziz*, Anthony J. Comerota

Jobst Vascular Institute, Toledo, OH

11:00 AM ADJOURN**PROGRAM DETAIL AND ABSTRACTS****THURSDAY MORNING, APRIL 4th****8:15 AM****White River Ballroom E-F**

President's Opening Remarks

Secretary's Welcome & Introduction of New Fellows Elected in 2012

President's Introduction of Honorary Fellows

Report of the Committee on Arrangements

Presentation of the Medallion for Advancement of Surgical Care

THURSDAY MORNING, APRIL 4th, CONTINUED

9:10 AM – 11:00 AM

White River Ballroom E-F

SCIENTIFIC SESSION I

Moderator: L.D. Britt, M.D., M.P.H.

1

Acute Cholecystitis: Early Versus Delayed Cholecystectomy—A Multicenter Randomized Trial (ACDC Study, NCT00447304)

Carsten N. Gutt^{*1}, Jens Encke^{*2}, Jörg Köninger^{*3}, Julian C. Harnoss^{*4}, Karl Kipfmüller^{*5}, Thorsten Götze^{*6}, Markus T. Golling^{*7}, Ernst Klar^{*8}, Katharina Feilhauer^{*3}, Wolfram G. Zoller^{*3}, Karsten Ridwelski^{*9}, Michael R. Schön^{*10}, Helmut K. Seitz^{*11}, Wolfgang Stremmel^{*4}, Markus W. Büchler⁴

¹Memmingen Hospital, Memmingen, Germany; ²Johanna-Etienne-Hospital, Neuss, Germany; ³Katharinen Hospital, Stuttgart, Germany; ⁴University Hospital, Heidelberg, Germany; ⁵St. Marien Hospital, Muelheim, Germany; ⁶Ketteler Hospital, Offenbach, Germany; ⁷Diakonie Hospital, Schwaebisch Hall, Germany; ⁸University Hospital, Rostock, Germany; ⁹Magdeburg Hospital, Magdeburg, Germany; ¹⁰Karlsruhe Hospital, Karlsruhe, Germany; ¹¹University Hospital Heidelberg, Heidelberg, Germany

Objective(s): Acute cholecystitis is a common disease and laparoscopic surgery is the standard of care. There is insufficient evidence regarding the best time point for surgery (acute versus delayed).

Methods: We conducted (2006–2011) a multicenter randomized trial to compare early (within 24 hours: ELC) versus delayed laparoscopic cholecystectomy (day 7–45: DLC). Primary endpoint was the overall morbidity within 75 days. Secondary endpoints were the surgical conversion rate, length of hospital stay, overall costs of treatment, mortality and change of antibiotic treatment.

*By invitation

Results: 642 patients were screened and 618 patients were randomized, respectively (ELC 304, DLC 314). Overall morbidity within 75 days (primary endpoint) was 11.6% (ELC) and 31.3% (DLC), respectively ($p < 0.001$). Mortality was one patient (0.3%) in each group. Conversion rates did not differ in early versus delayed cholecystectomy (ELC 9.9%, DLC 11.9%). The median length of hospital stay (ELC 5.4 days, DLC 10.0 days, $p < 0.001$) and overall treatment cost were significantly different (ELC 2919€, DLC 4261€, $p < 0.001$).

Outcome Analysis

Primary Endpoint	Group ELC (N = 304)	Group DLC (N = 314)	p-Value
Overall morbidity within 75 days (%)	11.6	31.3	<0.001
Secondary Endpoints			
Conversion rate to open surgery – no. (%)	30 (9.9)	33 (11.9)	0.44
Adverse events – no. of patients (%)	43 (14.1)	127 (40.4)	<0.001
Change of antibiotic treatment – no. (%)	22 (7.2)	31 (9.9)	0.24
Mortality rate – no. (%)	1 (0.3)	1 (0.3)	0.98
Total hospital stay – days, mean (interquartile range)	5.4 (4–6)	10.0 (7–12)	<0.001
Duration of hospitalization after cholecystectomy – days, mean (interquartile range)	4.68 (3–6)	4.89 (3–6)	0.07
Total hospital costs – Euro, mean (interquartile range)	2919 (2651–2651)	4261 (3021–4724)	<0.001

Conclusions: This is the largest ever conducted RCT in acute cholecystitis. Patients undergoing early laparoscopic cholecystectomy demonstrate considerably lower morbidity, shorter hospital stay and lower treatment costs. In acute cholecystitis early cholecystectomy should become the standard of treatment.

2

Outcomes for Abdominal Aortic Aneurysm (AAA) Repair in Patients with Chronic Renal Insufficiency (CRI): Comparison Between Endovascular (EVAR) and Open (OPEN) Repair

Bao-Ngoc H. Nguyen*, Richard Neville*, Rodeen Rahbar*, Richard Amdur*, Anton Sidawy

George Washington University, Washington, DC

Objective(s): Currently, OPEN is preferred over EVAR in patients with CRI because of the concern that the contrast load used for EVAR may result in post-operative dialysis. This study investigates whether this practice is supported by multicenter prospectively-collected data.

Methods: Patients who underwent EVAR and OPEN for infra-renal AAA were identified in the NSQIP database from 2005–2010. Pre-operative renal function was assessed by estimated-GFR calculated by the CKD-EPI equation. Patients with CRI were stratified into two different groups: moderate (eGFR 30–60 ml/min) and severe (eGFR <30 ml/min) renal dysfunction. Multivariate regression model was used for data analysis.

Results: We identified 13191 patients who had AAA repair; 9877 patients received EVAR and 3314 underwent OPEN. Forty percent had eGFR <60 ml/min. OPEN in patients with moderate renal dysfunction resulted in significantly higher mortality, cardiovascular events, and combined outcomes. However, in patients with severe renal dysfunction, the above outcomes were similarly high in both OPEN and EVAR. Most importantly, OPEN in patients with moderate renal dysfunction resulted in 5.2 times higher risk of dialysis (Table).

Post-operative outcomes	Moderate Renal Dysfunction eGFR 30-60ml/min				Severe Renal Dysfunction eGFR <30ml/min			
	EVAR (n=3523)	OPEN (n=1117)	Odds ratio for OPEN	p value	EVAR (n=363)	OPEN (n=139)	Odds ratio for OPEN	p value
Mortality	55 (1.6%)	66 (5.9%)	4.0	<.001	15 (4.1%)	8 (5.8%)	1.4	ns
Dialysis	37 (1.1%)	58 (5.2%)	5.2	<.001	23 (6.3%)	13 (9.4%)	1.5	ns
Cardiovascular events	57 (1.6%)	37 (3.3%)	2.1	<.01	12 (3.3%)	5 (3.6%)	1.1	ns
Combined outcomes	145 (4.1%)	159 (14.2%)	3.9	<.001	54 (14.9%)	24 (17.3%)	1.2	ns

Conclusions: Contrary to current practice and despite the use of contrast, EVAR should be the first choice in patients with moderate renal dysfunction if they have appropriate anatomy. Higher threshold for AAA repair with either OPEN or EVAR should be applied in patients with eGRF < 30 ml/min because post-operative complications were significantly high with either approach.

*By invitation

3

A Plasma MicroRNA Panel for Detection of Advanced Colorectal Adenomas

Susan Galandiuk, Ziad Kanaan*, M. Robert Eichenberger*, Henry Roberts*, Clayton Weller*, Jianmin Pan*, Shesh Rai*

University of Louisville, Louisville, KY

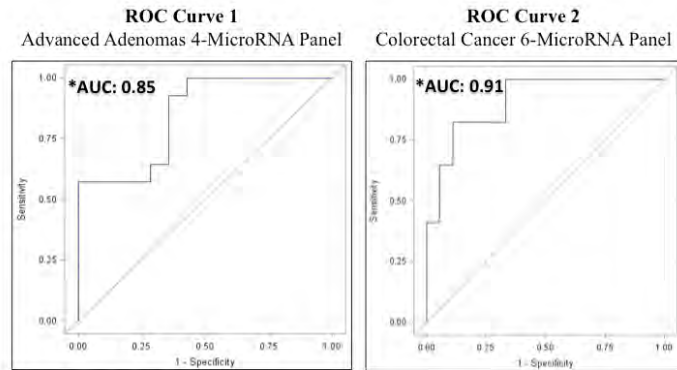
Objective(s): Detection of pre-cancerous lesions (advanced adenomas >10 mm) is key to reducing colorectal cancer (CRC) mortality. There is need for accurate, non-invasive biomarkers for detection of such lesions. MicroRNAs (miRNAs) are non-protein-coding RNAs that regulate gene expression. In follow-up to our prior work investigating dysregulation of 5 plasma miRNAs in CRC patients, we undertook a more comprehensive plasma-miRNA screening study in patients with advanced adenomas and patients with CRC.

Methods: Plasma screening of 384 miRNAs was determined using micro-fluidic array technology (Applied BioSystems®) in a training cohort of 10 healthy controls, 9 patients with advanced adenomas, and 10 patients with CRC. A panel of the most dysregulated miRNAs (p < 0.05, False Discovery Rate:5%) were then validated in a blinded test cohort of 10 different healthy controls, 9 patients with advanced adenomas, and 10 patients with CRC.

Results: A panel of 4 plasma miRNAs (miR-17, miR-195, miR-331, and miR-142–3p) distinguished polyps from controls with >90% sensitivity and specificity. Additionally, a panel of 6 plasma miRNAs (miR-431, miR-15b, miR-139–3p, miR-142–3p, miR-331, miR-21) distinguished CRC from controls with >90% sensitivity and specificity. Receiver-operating-characteristic (ROC) curves were demonstrated and area-under-the-curve (AUC) values were calculated (Figure).

*By invitation

Figure: Receiver-Operating-Characteristic (ROC) Curves for Plasma-MicroRNA Panels in Advanced Adenomas and Colorectal Cancer



*AUC: Area under the curve value.

AUC for both ROC curves was >0.80 indicating good discriminative power.

Conclusions: Plasma microRNAs provide reliable, non-invasive and inexpensive marker for advanced adenomas. This microRNA panel warrants study in larger cohorts. Such a plasma-based assay could provide better screening compliance as compared to stool-based or endoscopic screening.

4

A Randomized Controlled Trial of Modified Whole Blood Versus Component Therapy in Severely Injured Patients Requiring Transfusions

Bryan A. Cotton*, Jeannette Podbielski*, Elizabeth Camp*, Timothy Welch*, Deb del Junco*, Rosemary A. Kozar, Yu Bai*, Rhonda Hobbs*, Charles E. Wade*, Brijesh S. Gill*, Michelle K. McNutt*, George H. Tyson*, Laura Moore*, Rondel Albarado*, John B. Holcomb

University of Texas Health Science Center-Houston, Houston, TX

Objective(s): Following advances in Blood Banking in 1970's, blood donor centers began supplying hospitals with individual components (RBC, plasma, platelets) and removed WB as an available product. However, no studies of efficacy or hemostatic potential were performed in trauma patients prior to doing so. The objective was to determine if resuscitation of severely injured patients with WB results in fewer overall transfusions compared with component therapy.

Methods: Single center, randomized trial of severely injured patients predicted to receive massive transfusion. Patients were randomized to WB (1 U WB + 1 U platelets) or component, COMP, (1 U RBC+ 1U plasma+ 1U platelets) immediately on arrival. 1U WB = 1U RBC+ 1U plasma. Primary outcome was 24-hour transfusion volumes.

Results: 107 patients were randomized (55 WB, 52 COMP) over 14-months. There were no differences in demographics, arrival vital signs or laboratory values, injury severity or mechanism. Overall, transfusion volumes were similar between groups. However, when excluding severe brain injury patients, WB group received less 24-hour RBC (median 3 vs. 6, $p = 0.02$), plasma (4 vs. 6, $p = 0.02$), platelets (0 vs. 3, $p = 0.09$) and total products (11 vs. 16, $p = 0.02$). Linear regression confirmed these findings ($p < 0.05$).

Conclusions: Compared to component therapy, WB did not reduce transfusion volumes in severely injured inured predicted to receive massive transfusion. However, in patients without severe brain injuries, modified WB significantly reduced transfusion volumes.

*By invitation

THURSDAY MORNING, APRIL 4th, CONTINUED**10:50 AM****White River Ballroom E-F****Introduction of the President***Kenneth L. Mattox, M.D.***Address by the President***L.D. Britt, M.D., M.P.H.***THURSDAY AFTERNOON, APRIL 4th****1:30 PM – 5:15 PM****White River Ballroom E-F****SCIENTIFIC SESSION II***Moderator: Layton F. Rikkers, M.D.***5****The Evolution of Liver Transplantation During Three Decades: Analysis of 5347 Consecutive Liver Transplants at a Single Center**

Vatche G. Agopian*, Henrik Petrowsky*, Ali Zarrinpar*, Fady M. Kaldas*, Douglas G. Farmer, Johnny C. Hong*, Michael Harlander-Locke*, Curtis Holt*, Francisco Durazo*, Sammy Saab*, Steven Han*, Leonard I. Goldstein*, Hasan Yersiz*, Jonathan R. Hiatt, **Ronald W. Busuttil**

University of California, Los Angeles, Los Angeles, CA

Objective: To analyze a 28-year single-center experience with liver transplantation (LT), the standard of care for patients with irreversible liver failure.

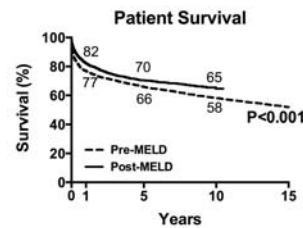
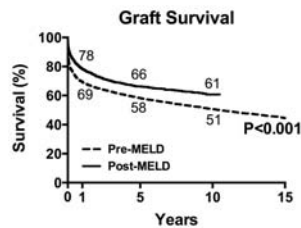
Methods: Outcomes and factors affecting survival were analyzed in 5347 consecutive LTs performed in 3752 adults and 822 children between 1984 and 2012, including comparisons before (n = 3218) and after (n = 2129) implementation of the Model for End-Stage Liver Disease (MELD) allocation system in 2002.

Results: Overall 1-, 5-, 10-, and 20-year patient and graft survival estimates were 82%, 70%, 63%, 52% and 73%, 61%, 54%, 43%, respectively. Recipient survival was best in children with biliary atresia and worst in adults with malignancy. Post-MELD era recipients were older, more likely hospitalized, and had greater MELD scores, longer waitlist times and pre- and post-transplant hospital stays. Despite increased acuity, post-MELD era graft and patient survival improved significantly, with shorter cold and warm ischemia times and less frequent early retransplantation (Table 1, Figure). Multivariate predictors of overall patient survival included era of transplantation, recipient and donor age, liver disease, retransplantation, and ischemia times.

**By invitation*

Table 1

	Pre-MELD (n = 3218)	Post-MELD (n = 2129)	P-Value
Recipient age (yrs)	49	54	<0.0001
Hospitalization (%)	47	50	0.026
Average MELD score	20	30	<0.0001
Time from listing to LT (days)	186	270	<0.0001
Pre-transplant LOS (days)	8	10	<0.0001
Post-transplant LOS (days)	29	34	<0.0001
Cold ischemia time (min)	441	406	<0.0001
Warm ischemia time (min)	47	41	<0.0001
Retransplantation <30 days (%)	9.4	4.1	<0.0001



Conclusions: We report the world's largest single-institution experience with LT. Despite increasing acuity in post-MELD era recipients, graft and patient survival continue to improve, justifying the "sickest first" allocation approach.

6

Long-Term Results of Adjuvant Imatinib Mesylate in Localized, High Risk, Primary Gastrointestinal Stromal Tumor (GIST): The American College of Surgeons Oncology Group (ACOSOG) Z9000 trial

Ronald P. DeMatteo¹, Karla Ballman^{*2}, Cristina Antonescu^{*1}, Christopher Corless^{*3}, Violetta Kolesnikova^{*3}, Margaret von Mehren^{*4}, Martin McCarter^{*5}, Jeffrey Norton⁶, Robert Maki^{*7}, Peter W.T. Pisters⁸, George Demetri^{*9}, Murray F. Brennan¹, Kouros Owzar^{*10}

¹Memorial Sloan-Kettering Cancer Center, New York, NY; ²Mayo Clinic, Rochester, MN; ³Oregon Health Sciences University, Portland, OR; ⁴Fox Chase Cancer Center, Philadelphia, PA; ⁵University of Colorado Denver School of Medicine, Denver, CO; ⁶Stanford University School of Medicine, Stanford, CA; ⁷Mount Sinai School of Medicine, New York, NY; ⁸University of Texas MD Anderson Cancer Center, Houston, TX; ⁹Dana Farber Cancer Institute, Boston, MA; ¹⁰Duke University, Durham, NC

Objective(s): GIST is the most common sarcoma. Surgery is the mainstay for primary GIST, but tumor recurrence is common. GIST typically contains a *KIT* or *PDGFRA* mutation and imatinib mesylate (Gleevec) inhibits both associated proteins. We tested whether adjuvant imatinib prolongs overall survival (OS) in GIST.

Methods: We conducted the first adjuvant trial of imatinib in GIST. From 09/2001 to 09/2003, we accrued 106 patients with primary GIST at high risk for postoperative recurrence [size >10 cm (85%), tumor rupture (17%), or <4 peritoneal implants (13%)]. Patients were prescribed imatinib 400 mg/day for 1 year and followed with serial CT or MRI exams for 5 years. The primary endpoint was OS compared to a 5 year historical value of 35%.

Results: After a median follow up of 7.7 years, the 1, 3, and 5 year OS was 99, 97, and 83%. The 1, 3, and 5 year recurrence-free survival (RFS) was 96, 60, and 40%. On univariable analysis, higher age and mitotic rate were associated with poor OS. On multivariable analysis, RFS was lower with increasing tumor size, small bowel site, *KIT* exon 9 mutation, high mitotic rate, and older age. There were no grade 4 or 5 adverse events and 26% had grade 3 toxicity.

Conclusions: Adjuvant imatinib in patients with primary GIST who are at high risk of recurrence prolonged OS compared to that of historical controls. Tumor size, site, mutation type, mitotic rate, and age were associated with RFS. The optimal duration of adjuvant therapy remains undefined.

*By invitation

7

Assessing Risk of Readmission After General, Vascular, and Thoracic Surgery Using ACS-NSQIP

Timothy M. Pawlik¹, Donald Lucas², Omar Hyder^{*1},
Rebecca Dodson^{*1}, Nita Ahuja^{*1}, Christopher Wolfgang^{*1},
Eric Schneider^{*1}, Michael Choti¹

¹Johns Hopkins, Baltimore, MD; ²Walter Reed National
Military Medical Center, Bethesda, MD

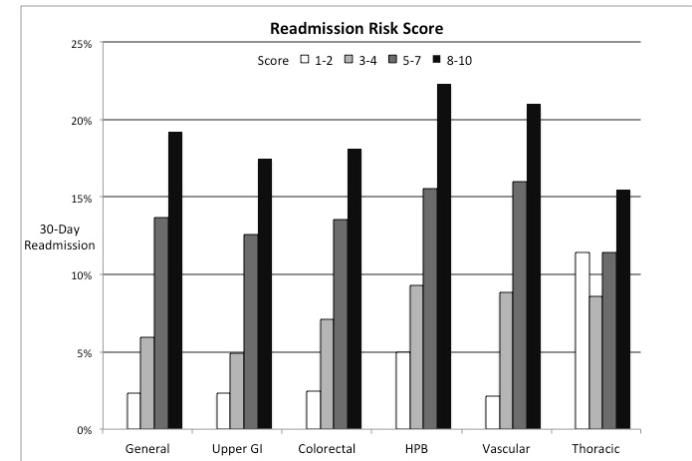
Objective(s): In 2012, Medicare began cutting reimbursement for hospitals with high 30-day readmission rates. We sought to define the incidence and risk factors associated with readmission after surgery.

Methods: 240,125 patients discharged after general, upper gastrointestinal (GI), colorectal, hepato-pancreato-biliary (HPB), vascular, and thoracic surgery were identified using 2011 ACS-NSQIP. Readmission rates and patient characteristics were analyzed using regression and receiver-operator curves.

Results: Median patient age was 56 years, 43% were male, and median ASA class was 2 (general surgery: 2; upper GI: 3; colorectal: 2; HPB: 3; vascular: 3; thoracic: 3). Median length-of-stay (LOS) was 1 day (general surgery: 1 day; upper GI: 2 days; colorectal: 4 days; HPB: 6 days; vascular: 2 days; thoracic: 4 days). Overall 30-day readmission was 8.1%; readmission varied between subspecialties (general surgery: 7.3%; upper GI: 6.9%; colorectal: 10.0%; HPB: 15.9%; vascular: 12.4%; thoracic: 11.1%; $p < 0.001$). Factors associated with readmission included ASA class, functional status, dialysis, inpatient complications, and LOS (all $p < 0.001$). On multivariate analysis, ASA class (RR 4.31, 95%–CI 3.76–4.94) and LOS (RR 2.49, 95%–CI 2.49–2.59) remained most strongly associated with readmission. A simple integer-based model using ASA class and LOS predicted risk of readmission across subspecialties (AUC 0.702) (Figure).

Conclusions: Readmission occurs at an incidence of 7–16% across surgical subspecialties. A scoring system based on ASA class and LOS can accurately assess readmission risk to target interventions.

*By invitation



8

General Surgery Residency Inadequately Prepares Trainees for Fellowship: Results of a North American Survey of Program Directors

Samer Mattar*¹, Rebecca M. Minter*², Adnan Alseidi*³, D. Rohan Jeyarajah*⁴, Lee L. Swanstrom⁵, Steven D. Wexner⁶, Ralph W. Aye*⁷, Jose Martinez*¹, Morris E. Franklin*⁸, Sharona B. Ross*⁹, Maurice E. Arregui*¹⁰, Dan B. Jones¹¹, Bruce D. Schirmer¹²

¹Indiana University, Indianapolis, IN; ²University of Michigan, Ann Arbor, MI; ³Virginia Mason Medical Center, Seattle, WA; ⁴Methodist Dallas Medical Center, Dallas, TX; ⁵Oregon Health and Science University, Portland, OR; ⁶Cleveland Clinic Florida, Westin, FL; ⁷University of Pittsburgh, Pittsburgh, PA; ⁸Texas Endosurgical Institute, San Antonio, TX; ⁹Florida Hospital, Tampa, FL; ¹⁰St. Vincent's Hospital, Indianapolis, IN; ¹¹Harvard University, Boston, MA; ¹²University of Virginia, Charlottesville, VA

Objective: Assess readiness of general surgery trainees entering accredited surgical sub-specialty fellowships in North America.

Methods: A multi-domain, global assessment survey designed by the Fellowship Council (FC) research committee was sent to all sub-specialty program directors (PDs). Respondents spanned MIS, Bariatric, Colorectal, Hepatobiliary and Thoracic specialties. There were 46 quantitative questions distributed across 5 domains and >1 reflective qualitative questions/domain.

Results: There was a 63% response rate (n = 91/145). Of respondent PDs, 21% felt that new fellows arrived unprepared to the operating room, 30% could not independently perform a laparoscopic cholecystectomy, and 66% were deemed unable to operate for 30 unsupervised minutes of a major procedure. With regards to laparoscopic skills, 30% could not atraumatically manipulate tissue, 26% could not recognize anatomical planes, and 56% could not suture. Furthermore, 28% of fellows were not familiar with therapeutic options and 24% were unable to recognize early signs of complications. Finally, it was felt that the majority of new fellows were unable to conceive, design, and conduct research and/or academic projects. Thematic clustering of qualitative data revealed deficits in domains of operative autonomy, progressive responsibility, longitudinal follow-up, and scholarly focus after GS education.

*By invitation

Conclusions: This high-response rate survey reveals variable deficiencies across all five educational domains in graduates of GS programs. An educational and experiential gap exists that should be addressed for trainees considering sub-specialty training. More focused preparation of residents during their final years may result in a more productive fellowship.

9

Evaluating Outcomes and Trends of Transthoracic and Transhiatal Esophagectomy: A Decade Analysis of High Volume Centers

Mehraneh D. Jafari*¹, Wissam J. Halabi*¹, Nguyen Q. Vinh*², Brian R. Smith*¹, Michael J. Stamos¹, Ninh T. Nguyen¹

¹University of California, Irvine, Orange, CA; ²University of California, Irvine, Irvine, CA

Objective: Controversy exists regarding the optimal surgical management of esophageal cancer. This study examined the trends and outcomes of the transthoracic (TTE) vs. transhiatal (THE) esophagectomy.

Methods: Using Nationwide Inpatient Sample between 2001–2010, data for patients with esophageal cancer was analyzed. Yearly trends in the use of TTE vs THE were analyzed and multivariate logistic regression was used to compare outcomes while controlling for age, gender, comorbidities, procedure type and hospital volume. Outcomes were analyzed according to hospital volume (Low-volume (LVC) <10 cases per year and high-volume (HVC) ≥10 cases per year).

Results: Among the 41,051 cases identified, 37.8% were performed in HVC. Between 2001 and 2010, there was a trend towards an increase number of esophagectomies performed per year (1,402 to 1,975). An improvement in mortality was observed over this period (8.34% vs. 4.23%). TTE was the predominate operation (75.5%). Compared to THE, TTE was associated with a lower hospital charge (\$118K vs. 150K), a shorter length of stay (15 vs. 18), and lower in-hospital mortality (3.4% vs. 6.9%). On multivariate regression analysis with TTE as reference, THE was associated with a 2.6 increase odds of mortality ($p < 0.02$), and 1.6 increase odds of serious morbidity ($p < 0.01$). No significant difference in outcomes was detected in HVC compared to LVC.

Conclusion: The number of esophagectomies performed for esophageal cancer is increasing over the past decade with an overall decrease in mortality. The predominate operation continues to be TTE which is associated with a decreased serious morbidity and mortality compared to THE.

*By invitation

10

Early Operation Is Associated with a Survival Benefit for Patients with Adhesive Bowel Obstruction

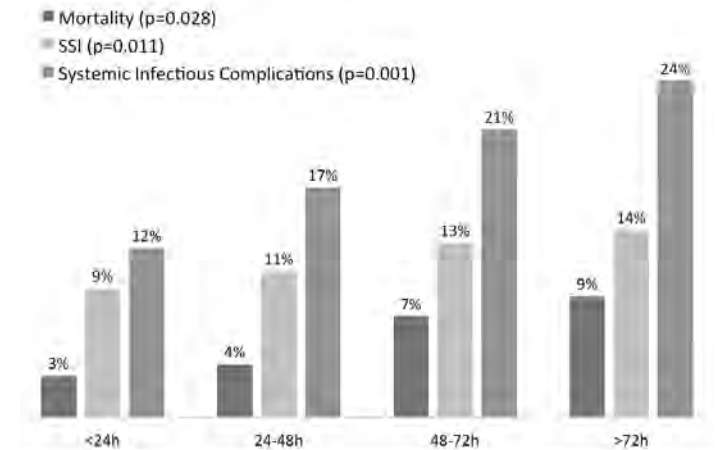
Pedro G. Teixeira*, Efstathios Karamanos*, Peep Talving*, Kenji Inaba*, Lydia Lam*, Demetrios Demetriades

University of Southern California, Los Angeles, CA

Objectives: It is generally accepted that patients with uncomplicated adhesive bowel obstruction (ABO) failing nonoperative management should be operated on within 5 days. However, the optimal time of operation within this 5-day period is unknown. This study evaluates the effect of timing of operation after admission on outcomes.

Methods: Patients requiring surgery for ABO were identified from NSQIP. Linear regression was performed to evaluate the impact of incremental surgical delay in mortality and complications. The study population was stratified by time to intervention (24 hour intervals) and logistic regression was performed to adjust for pre-morbid conditions and presentation physiology. The outcomes included 30-day mortality and infectious complications.

Time to Operation and Associated Outcomes



*By invitation

Results: 4,163 patients underwent laparotomy for ABO. Mortality and complications increased significantly with operative delay (Figure). Delay ≥ 24 hours was associated with significantly higher mortality (6.5% vs. 3.0%, adjusted odds ratio (AOR) [95% CI]: 1.58 [1.12, 2.24], $p = 0.009$). The delayed operation group (≥ 24 hours) also had significantly higher rates of surgical site infections (12.9% vs. 10.0%, AOR [95% CI]: 1.33 [1.08–1.62], $p = 0.007$), pneumonia (7.9% vs. 5.2%, AOR [95% CI]: 1.36 [1.04–1.78], $p = 0.025$), sepsis (7.6% vs. 5.1%, AOR [95% CI]: 1.45 [1.10–1.90], $p = 0.007$), and septic shock (6.2% vs. 3.5%, AOR [95% CI]: 1.47 [1.07–2.02], $p = 0.018$).

Conclusion: Early operative intervention for patients with adhesive bowel obstruction is associated with a significant survival benefit and lower incidence of local and systemic complications.

11

Branch Duct Intraductal Papillary Mucinous Neoplasms: Does Cyst Size Change the Tip of the Scale? A Critical Analysis of the Revised International Consensus Guidelines in a Large Single-Institutional Series

Klaus Sahora*, Mari Mino-Kenudson*, Sarah Thayer*, Cristina Ferrone*, William Brugge*, Dushyant Sahani*, Martha Pitman*, Andrew Warshaw, Keith Lillemoe, Carlos Fernandez-Del Castillo

Massachusetts General Hospital, Boston, MA

Objective(s): The Sendai guidelines for management of branch-duct (BD) IPMN espouse safety of observation of asymptomatic cysts < 3 cm without nodules (Sendai negative). Revised international consensus guidelines published in 2012 suggest a still more conservative approach in the management of BD-IPMN, even for lesions ≥ 3 cm. By contrast, two recent studies have challenged the safety of both guidelines, describing malignancy (invasive carcinoma or carcinoma-in-situ) in a) 67% of BD-IPMN < 3 cm and b) 24.6% of “Sendai negative” BD-IPMN. The aim of the present study was to critically analyze the safety of the revised guidelines in the management of BD-IPMN, with focus on cyst size and worrisome features.

Methods and Results: Review of a prospective database identified 563 patients with BD-IPMN. 240 patients underwent surgical resection (152 at the time of diagnosis, and 88 after being initially followed); the remaining 323 have been managed by observation with median follow-up of 60 months. No patient developed unresectable BD-IPMN carcinoma during follow up. Malignancy was found in 57 pts of the entire cohort (10%). According to the revised guidelines, 76% of resected BD-IPMN with carcinoma-in-situ and 95% of resected BD-IPMN with invasive cancer had high-risk stigmata or worrisome features. However, 11% of resected BD-IPMN with no worrisome features harbored malignancy. The risk of malignancy in those non-worrisome lesions was 7% in BD-IPMN < 3 cm and 18% in lesions ≥ 3 cm.

Conclusions: Expectant management of BD-IPMN following the old guidelines is safe, whereas caution is advised in larger lesions, even in the absence of worrisome features.

*By invitation

12

The Comparative Effectiveness of Vascular Surgeons Over Interventionalists in Endovascular Repair of Abdominal Aortic Aneurysms

Brandon A. McCutcheon*¹, David C. Chang*¹, John Rose*¹, Ralitzia Parino*¹, Logan Marcus*¹, Denis F. Bandyk¹, Samuel E. Wilson², **Mark A. Talamini¹**

¹UC San Diego School of Medicine, San Diego, CA; ²UC Irvine School of Medicine, Irvine, CA

Objective(s): Multiple types of specialists perform interventional vascular procedures. Given differences in training, operative experience, and involvement in patient preoperative evaluation, the objective of this study was to quantify differences in patient outcomes between vascular surgeons and interventionalists (cardiologists and radiologists).

Methods: Analysis included patients with an ICD-9 procedure code of 39.71 indicating “endovascular implantation of graft for abdominal aorta” within the Nationwide Inpatient Sample from 1998–2009. Using unique surgeon identifiers, vascular surgeons were identified by previous experience with elective open AAA repair or arteriovenous (AV) fistula repair.

Results: 28,094 patients received EVAR for AAA between 2001 and 2009. Procedural risk determined by the Charlson Index was similar (P = 0.1263) for the treatment groups. Unadjusted mortality rates, lengths of stay, and total charges were significantly less for patients of vascular surgeons relative to interventionalists (Table 1). On multivariate analysis vascular surgeons were associated with a decreased likelihood of mortality (O.R., 0.75, 95% CI 0.60–0.93), cost (\$7,702, 95% CI \$5806–\$9599), and length of stay (0.38 days 95% CI 0.18–0.58 days).

Table 1. Summary of Unadjusted Patient Characteristics for Vascular Surgeons vs. Interventionalists

	Vascular Surgeon (n = 22,299)	Interventionalist (n = 5,795)	P-Value
Mortality Rate (%)	1.8	3.4	<0.001
Length of Stay, mean (median)	3.6 (2)	4.6 (2)	<0.001
Mean (median) Charges, \$1000	74.5 (62.8)	89.0 (72.3)	<0.001
Percent of Patients w/Charlson Index >2	21.7	22.6	0.1263

*By invitation

Conclusions: Outcomes amongst patients receiving EVAR for AAA are better in terms of mortality, cost, and length of stay for those receiving care from a vascular surgeon compared to patients of an interventionalist. These data may have implications regarding health policy, training paradigms, and specialty certification/credentialing in the current era of health reform and comparative effectiveness.

13

Defining “The Elderly”; Undergoing Major Gastrointestinal Resections: Receiver Operating Characteristic Analysis of a Large ACS-NSQIP Cohort

Ashwin A. Kurian*¹, Lian Wang*², Gary Grunkemeier*²,
Neil H. Bhayani*¹, Lee L. Swanstrom³

¹Providence Portland Cancer Center, Portland, OR; ²Medical Data Research Center, Providence Health & Services, Portland, OR; ³Oregon Clinic GMIS Division, Portland, OR

Objective(s): “The Elderly” is poorly defined. Investigators use varying subjectively determined age cut-offs to report outcomes in the elderly. We set out to use objective outcomes data to determine the “at-risk” elderly population.

Patients: 129,331 patients identified from the ACS-NSQIP database (2005 to 2010), undergoing major gastrointestinal resections.

Outcome: Mortality.

Statistical Methods: Locally weighted regression was used to fit the trend line of mortality over age. Receiver Operating Characteristic (ROC) analysis was used to identify the “predictive age” for mortality.

Results: Mortality increases with age, with a non-linear transition zone (ages of 50–75 yrs) flanked by two linear zones on either end. The younger linear zone showed low mortality increase (0.5% per decade). Larger mortality increase with age (5.3% per decade) was observed at the older age end. Similar patterns were observed for large volume surgical subtypes, with clustering of “critical age” beyond which mortality increases dramatically at 75 ± 2 years (Table). ROC analysis identified the “predictive age” for mortality being 68.5 yrs (AUC = 0.72, sensitivity 66.6% and specificity 65.5%).

Conclusions: 68.5 years is predictive of mortality, with steep increase beyond 75 years. These ages should be used to standardize outcome data and focus perioperative resources to improve outcomes.

*By invitation

Age and Mortality

Intervention	N	Critical Age (Years)	Predictive Age (Years)	Specificity	Sensitivity	Area Under Curve
All Resections	129,331	75	68.5	65.5 %	66.6 %	0.72
Elective	111,620	76	66.5	61.5 %	71.9%	0.72
Emergent	17,710	73	na	na	na	<0.70
Colectomy	101,258	76	68.5	65%	68.5%	0.73
Total	7503	74	66.5	73.5	69.5	0.79
Colectomy						
Partial Colectomy	93,755	77	70.5	68.4	64.7	0.72
Open Colectomy	68,163	75	68.5	63.6	67.9	0.71
Laparoscopic Colectomy	33,095	76	71.5	73.9	71.2	0.79
Gastrectomy	5701	77	68.5	63.6	70	0.72
Whipple	12644	76	na	na	na	<0.70
Hepatectomy	7636	na	na	na	na	<0.70
Esophagectomy	2092	na	na	na	na	<0.70

FRIDAY MORNING, APRIL 5, 2013

7:00 AM – 8:00 AM
White River Ballroom A
ASA WOMEN IN SURGERY BREAKFAST

8:00 AM – 10:30 AM
White River Ballroom E-F

SCIENTIFIC SESSION III

Moderator: L.D. Britt, M.D., M.P.H.

14

Improved Outcomes of Bile Duct Injuries in the 21st Century

Henry A. Pitt, Stuart Sherman*, Matthew S. Johnson*, Andrew N. Hollenbeck*, Jonathan Lee*, Alex K. Malone*, Keith D. Lillemoe, Glen A. Lehman*

Indiana University School of Medicine, Indianapolis, IN

Objective(s): Postoperative bile duct injuries require multidisciplinary management. In recent years advancements have occurred in patient evaluation as well as in timing and type of therapy. Therefore, the aims of this analysis were to compare the outcomes of bile duct injuries by specialist and over time.

Methods: A multidisciplinary team managed 543 patients over 18 years. Mean age was 51 years; 71% were female; and 97% had a cholecystectomy and/or bile duct exploration. Patients were classified by the Strasberg system as having bile leaks (Type A, n = 239, 44%) or bile duct injuries (Types B-E, n = 304, 56%). Injury outcomes from 1993–03 (n = 140) were compared to those from 2004–10 (n = 160). A successful outcome was defined as no need for further intervention following the initial 12-months of therapy. Standard statistical methods were employed.

Results: Patients with bile leaks were managed almost exclusively by endoscopists (96%) with a 96% success rate. Patients with bile duct injuries

*By invitation

were managed most often by endoscopists (N = 115, 38%) followed by surgeons (N = 104, 34%) and interventional radiologists (N = 85, 28%). Success rates for bile duct injuries are presented in the Table.

Period	Int. Radiol.	Endoscopy	Surgery	Overall
1993–03	41%	72%*	80%*	67%
2004–10	58% [†]	82%*	95%* ^{††}	79% [†]
1993–10	52%	77%*	88%* [†]	74%

*p < 0.05 vs. Int. Radiol, [†]p < 0.05 vs. 1993–03, ^{††}p < 0.05 vs Endoscopy

Conclusions: Almost all bile leaks and many bile duct injuries can be managed successfully by endoscopists. Selected proximal injuries can be treated by interventional radiologists with modest success. Outcomes of bile duct injuries have improved over time and, currently, are best with surgical management.

15

Long-Term Survival and Recurrence Rates Following Trimodality Therapy of Esophageal Adenocarcinoma—The Influence of Histologic Tumor Viability

Ashleigh M. Francis*, Boris Sepesi*, Arlene M. Correa*, Reza J. Mehran*, David C. Rice*, Jack A. Roth, Ara A. Vaporciyan, Garrett L. Walsh*, Stephen G. Swisher, Wayne L. Hofstetter*

MD Anderson Cancer Center, Houston, TX

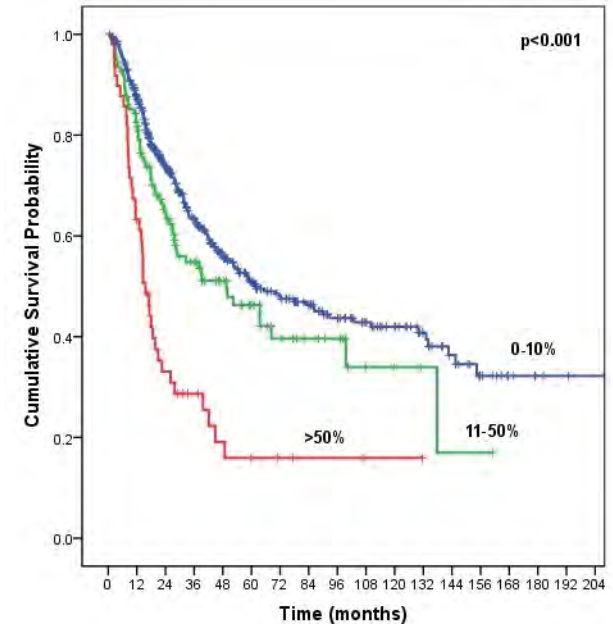
Objectives: Current AJCC 7th esophageal carcinoma staging system does not account for the treatment effect of preoperative chemoradiotherapy (CRT). The extent of histologic tumor viability (HTV) post CRT has been correlated with patient outcome. Our aim was to evaluate long-term survival and recurrence rates based on response to neoadjuvant therapy for esophageal adenocarcinoma.

Methods: Medical records of 1402 esophagectomy patients (1981–2011) were reviewed; 788 patients underwent preoperative CRT. Histologic tumor viability was assessed in 602 patients and classified as 0–10%, 11–50%, >50%. Survival was estimated using Kaplan-Meier method at potential median follow-up 67 months. Univariate and multivariate analyses identified variables associated with survival.

Results: Multivariate analysis identified HTV > 50% ($p < 0.001$, HR 2.5), and positive nodal status ($p < 0.001$, HR 1.8), but not pathologic T-status ($p = 0.781$, HR 1.2) to be independently associated with survival. Actuarial 5 and 10-year survival was 51% and 42% (HTV 0–10%), 46% and 34% (HTV 11–50%), and 16% for both (HTV > 50%). The best 5-year survival 56% was achieved in N0 patients with HTV 0–10% ($p = 0.05$, HR 1.0), contrary to 6% observed in node-positive patients with HTV > 50% ($p < 0.001$, HR 2.5). Patients with HTV > 50% demonstrated significantly ($p = 0.01$, OR 2.2) increased distant recurrence (51%, $N = 25/49$) compared to HTV < 50% (32%, $N = 179/553$).

Conclusions: Long-term outcomes of trimodality therapy of esophageal carcinoma are best predicted utilizing histologic tumor viability; HTV may be a practical secondary endpoint predicting efficacy of therapy.

*By invitation



16

Long-Term Results of a Non-Operative Strategy (Watchful Waiting) for Men with Minimally Symptomatic Inguinal Hernias

Robert J. Fitzgibbons, Jr., Bala Ramanan*, Shipra Arya*, Scott A. Turner*, Timothy J. Dickhudt*, Xue Li*, Domenic Reda*, James Gibbs*

Creighton University, Omaha, NE

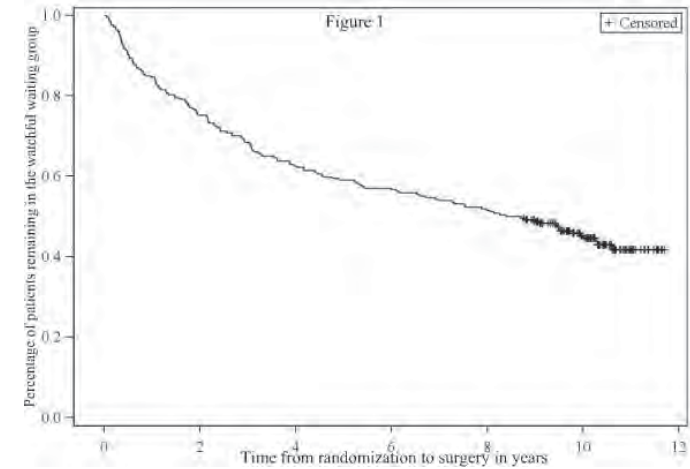
Objective(s): With an average follow-up of 3.2 years, a randomized controlled trial comparing Watchful Waiting (WW) with routine repair for male patients with minimally symptomatic inguinal hernias lead investigators to conclude that WW was an acceptable option (JAMA. 2006 Jan 18;295 (3):285–92). Here we report the crossover rate to surgery after an additional 6 years of follow-up.

Methods: 254 men who had been assigned to WW consented to longer-term follow-up. These patients were contacted yearly by mail questionnaire. Non-responders were contacted by phone or email for additional data collection.

Results: Patients have now been followed for a mean of 8.75 years. The cumulative crossover rate over the next six years (2005–2010) was 40% (2005), 43.7% (2006), 44.5% (2007), 49.4% (2008), 50.2% (2009) and 53.9% (2010) respectively. The most common reason for crossover was pain (51.2%). On multivariate analyses, crossover to surgery was associated with age more than 65 years (odds ratio [OR] 3.65; 95% confidence interval [CI]–1.33–10) and postgraduate education versus college education (OR 3.05; 95% CI–1.09–8.55). Kaplan Meier analyses (Figure 1) predicts that 60% of patients will crossover to surgery by 10 years from randomization.

Conclusions: Although WW is a reasonable strategy for a minimally symptomatic inguinal hernia, crossover to operation is highly likely if patients live long enough.

*By invitation



17

A Risk Prediction Model for Determining Appropriateness of CEA in Patients with Asymptomatic Carotid Artery Stenosis

Mark F. Conrad*, Jean W. Kang*, Shankha Mukhopadhyay*,
Virendra I. Patel*, Glenn M. LaMuraglia, Richard P. Cambria
Massachusetts General Hospital, Boston, MA

Objective: The benefit of CEA over medical therapy in patients with asymptomatic carotid artery stenosis (ACAS) is predicated upon a 5-year post-procedure life expectancy. The study goal was to create a scoring system that predicts 5-year survival after CEA for triage of patients with ACAS.

Methods: All patients who underwent CEA for ACAS From 1989–2005 were identified. Long-term survival was obtained from the social security death index. All patients had 5+ year follow-up. A logistic regression predicting actual 5-year survival (not actuarial) was performed and a prediction score was derived from the odds ratios. This was validated within the cohort using the Hosmer-Lemeshow Test and a derivation/validation Receiver Operating Characteristic (ROC) curve.

Results: There were 2004 CEA (1791 pts) performed. Average follow-up was 130 ± 49 mo. The 30-day stroke rate was 1.1%, death rate was 0.7%. The actual 5-year survival was 73%. Logistic regression yielded the following predictors of mortality: Age (OR = 1.8, $p < 0.0001$), CAD (OR = 1.5, $p = 0.0007$), COPD (OR = 2.5; $p < 0.0001$), diabetes (OR = 1.7, $p < 0.0001$), neck radiation (OR = 2.6, $p = 0.005$), no statin (OR = 2.1, $p < 0.0001$), Creatinine > 1.5 (OR = 2.6, $p < 0.0001$). The scoring system is detailed in Table 1. The system was validated ($p = 0.26$) with no difference in ROC curves.

Table 1

Age <50 years	0 points	CAD	2 points
50–59 years	2 points	COPD	3 points
60–69 years	4 points	Diabetes	2 points
70–79 years	6 points	Neck Rad	3 points
80–89 years	8 points	No Statin	2 points
90+ years	10 points	Cr > 1.5	3 points
Score Range	% Survival	Score Range	% Survival
0–5 points	92.5%	12–14 points	46.5%
6–8 points	83.6%	15+ points	33.8%
9–11 points	63.7		

*By invitation

Conclusions: This scoring system can identify which patients are likely to benefit from CEA based on 5-year survival probability. Since 5-year survival of patients in the medical arm of the asymptomatic CEA trials was 60–70%, we conclude that patients who score 0–8 points are excellent candidates for CEA while most patients with >12 points have limited longevity so as to preclude benefit from prophylactic CEA.

18

The Cost of Obesity: National Cost Estimates of Obese Versus Non-Obese Patients for Non-Bariatric Inpatient Operative Procedures in the USA

Rodney J. Mason*¹, Jolene R. Moroney*², Thomas V. Berne¹

¹University of Southern California, Los Angeles, CA;

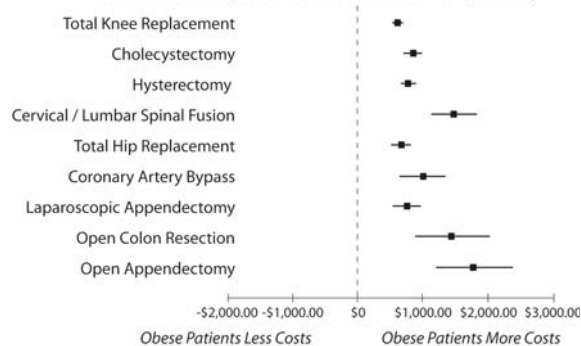
²University of California, Los Angeles, Los Angeles, CA

Objective(s): To evaluate the economic impact of obesity on hospital costs associated with non-bariatric, non-obstetrical surgical procedures.

Methods: National cost estimates were calculated from the Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS) database, 2005–2010 for the country's highest volume non-bariatric non-obstetric procedures. NIS approximates a 20-percent stratified sample of U.S. hospitals. Obesity was determined and identified from the HCUP-NIS severity datafile comorbidity element for obesity. Costs for obese patients were compared to non-obese patients. To control for outcome reporting bias for each procedure, each obese patient was matched to a non-obese patient using age, sex, race and all 28 co-morbid defined elements in the NIS database.

Results: Of 2,307,382 procedures, 225,450 (10%) patients were categorized obese and able to be matched 1-to-1 to a non-obese patient for the adjusted analysis. Total hospital costs were significantly higher ($p < 0.0001$) in obese patients for all selected procedures (Figure). Costs/day were significantly higher in obese patients for total knee replacement, cholecystectomy, hysterectomy, laparoscopic appendectomy and colectomy (Table).

**Total Hospital Costs: Obese vs. Matched Non-obese Patients
Mean Difference, 95th Confidence Interval (dollars)**



*By invitation

Mean Differences: Costs/Day (\$)

Procedure	Total Number 2005–2010	Matched Cohort (Number)	Costs/day (\$)		p-Value
			Mean Differences	(95% CI)	
Total Knee Replacement	504,253	153,892	\$90.00	(\$62 to \$118)	<0.0001
Cholecystectomy	347,537	73,200	\$85.00	(\$47 to \$124)	<0.0001
Hysterectomy	334,992	54,788	\$209.00	(\$176 to \$241)	<0.0001
Cervical/Lumbar Spinal Fusion	250,188	40,092	\$56.00	(-\$82 to \$194)	0.426
Total Hip Replacement	232,084	45,662	\$44.00	(\$-12 to \$101)	0.121
Coronary Artery Bypass	200,480	43,804	\$36.00	(\$13 to \$86)	0.151
Laparoscopic Appendectomy	168,766	14,828	\$121.00	(\$9 to \$232)	0.034
Colon Resection	142,248	13,972	\$86.00	(\$36 to \$137)	0.0009
Open Appendectomy	126,834	10,662	\$63.00	(-\$23 to \$150)	0.153

Conclusions: Obese patients incur significantly higher total and daily hospital costs than comparative non-obese patients, which translates to a conservative estimated additional annual national cost of \$192,135,852.00 for these selected procedures.

19**250 Robotic Assisted Major Pancreatic Resections**

Herbert J. Zeh, III*¹, Brian A. Boone*¹, Arthur James Moser*², David L. Bartlett¹, Amer H. Zuriekat*¹

¹University of Pittsburgh, Pittsburgh, PA; ²BIDMC, Harvard, Boston, MA

Objectives: Robotic-assisted allows complex resections and anastomotic reconstructions to be performed with identical standards to open surgery. We have applied this technology to a variety of major pancreatic resections in order to assess the safety, utility and efficacy of this platform.

Methods: A retrospective review of a prospectively maintained database of robotic assisted pancreatic resections at a single institution between August 2008 and November 2012 was performed. Preoperative, operative, pathologic, and post-operative outcomes were analyzed

Results: 250 consecutive robotic assisted major pancreatic resections were analyzed; pancreaticoduodenectomy (PD = 132), distal pancreatectomy (DP = 83), central pancreatectomy (CP = 13), pancreatic enucleation (10), total pancreatectomy (5), Appleby resection (4), and Frey procedure (3). Mean operative time for the two most common procedures was 529 ± 103 mins for PD, and 257 ± 93 mins for DP (last 50 PD 444 (±76 mins), DP 222 ±73 mins). Conversion to open procedure in 16 patients (6%);(11 PD, 2 DP, 2 CP, 1 TP) failure to progress (14) and bleeding (2). 90 day mortality was (4) 1.8% for the 225 subjects with at least 90 day follow up.

Patient Characteristics	
Age, median (range)	65 (18–90)
Female, n (%)	128 (51%)
BMI, median (IQR)	27.5 (24–32)
Prior Surgery, n (%)	129 (52%)
ASA score, n (%)	72 (29%)
2	169 (68%)
3	9 (4%)
4	
Indication, n (%)	77 (31%)
Pancreatic adenocarcinoma	43 (17%)
Periapillary carcinoma	58 (23%)
Neuroendocrine tumor	52 (21%)
Premalignant	20 (8%)
Benign	

*By invitation

Conclusions: This represents to our knowledge the largest series of robotic assisted pancreatic resections. The safety metric outcomes, including the low incidence of conversion, support the robustness of this platform when applied to pancreatic procedures.

FRIDAY MORNING, APRIL 5th, CONTINUED

10:30 AM – 12:00 PM
White River Ballroom E-F

FORUM DISCUSSION**Healthcare Reform: The Impact on American Surgery**

Moderator: L.D. Britt, M.D., M.P.H.

David B. Hoyt, M.D.

*Executive Director
 American College of Surgeons
 Chicago, IL*

R. Scott Jones, M.D.

*Past President
 American College of Surgeons
 Chicago, IL*

Jacob Drapkin

*Vice President, Healthcare Economics
 Ethicon, Inc.
 Cincinnati, OH*

FRIDAY AFTERNOON, APRIL 5th

1:30 PM – 4:00 PM
White River Ballroom E-F

SCIENTIFIC SESSION IV

Moderator: Kenneth L. Mattox, M.D.

20

Local Excision of Colon or Rectal Carcinoma Is Associated with Adverse Survival Compared with Radical Resection: A Surveillance, Epidemiology, and End Results (SEER) Population-Based Study

Aneel Bhangu*, Gina Brown*, John Nicholls*, John Wong, Ara Darzi*, Paris Tekkis*

Royal Marsden Hospital, London, United Kingdom

Objective: Technological advances have enabled endoscopic and local excision techniques to be applied in the treatment of early colorectal cancer in preference to radical resectional surgery. The present study aimed to compare the cancer specific results of local excision with major resection.

Method: Patients with stage 0 (carcinoma-in-situ) or stage I (T1/2 N0 M0) adenocarcinoma of the colon or rectum undergoing surgery between 1998 and 2009 from 13 SEER regions were included. SEER uses the best available clinical, radiological and/or pathological data to assign stage. Local excision (endoscopic or surgical) was compared with major surgical resection using adjusted hazard ratios (HR) for 5-year overall survival (OS) and cancer specific survival (CSS).

Results: This study included 7378 (18.0%) local excisions and 36,116 (83.0%) major resections. There were 3553 (8.2%) patients with carcinoma-in-situ and 39,941 (91.8%) with a clinical stage I cancer. After adjusting for confounding factors, local tumor excision for carcinoma-in-situ was associated with HRs for 5-year OS and CSS of 1.05 (p = 0.543) and 0.97 (p = 0.865) compared with major resection. Local excision for early invasive carcinoma (clinically stage I) was associated with a worse 5-year OS and CSS compared with major resection (HR 1.35, p < 0.001 and 1.14, p = 0.043).

*By invitation

Stage		Local Excision	Major Resection	Log-Rank P
Stage 0 (Carcinoma-in-situ)	5-year OS	76.3%	77.6%	0.510
	5-year CSS	96.0%	96.0%	0.960
Stage I Invasive Carcinoma	5-year OS	68.4%	75.2%	<0.001
	5-year CSS	92.4%	94.3%	<0.001

Conclusion: Local excision for early colorectal cancer is oncologically equivalent to major surgery for carcinoma-in-situ but inferior for early invasive (stage I) carcinoma.

21

Minority Trauma Patients Tend to Cluster at Trauma Centers with Worse-than-Expected Mortality: Can This Phenomenon Help Explain Racial Disparities in Trauma Outcomes?

Adil H. Haider*¹, Zain G. Hashmi*¹, Syed Nabeel Zafar*², Xuan Hui*¹, Eric B. Schneider*¹, David T. Efron*¹, Elliott R. Haut*¹, Lisa A. Cooper*³, Ellen MacKenzie*³, Edward E. Cornwell, III²

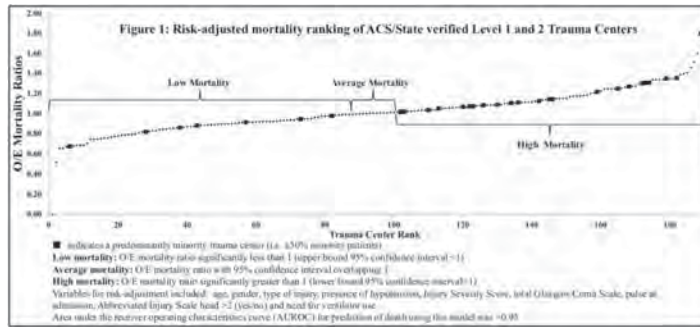
¹Johns Hopkins School of Medicine, Baltimore, MD; ²Howard University College of Medicine, Washington, DC; ³Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

Objective(s): Racial disparities in survival after traumatic injury have been described. However, the mechanisms that lead to these inequities are not well understood. Minority patients have been shown to cluster at hospitals that display financial challenges. Our objective was to determine if minority trauma patients are more commonly treated at trauma centers (TCs) that have poor observed versus expected survival.

Methods: Analysis of Level 1 and 2 TCs included in the National Trauma Data Bank 2007–2010. Patients ≥ 16 years, with Injury Severity Score ≥ 9 included. TC's with $>50\%$ Hispanic or Black patients classified as predominantly-minority TCs. Multivariate logistic regression adjusting for several patient/injury characteristics was used to predict the expected number of deaths for each TC. Observed-to-expected (O/E) mortality ratios were then generated and used to rank individual TCs as low (O/E < 1), average or high mortality (O/E > 1).

Results: 620,797 patients from 189 TCs were analyzed; 89 (47.1%) TCs were found to be high mortality, 13 (6.9%) average and 87 (46.0%) low mortality. More of the predominantly-minority TCs {(77% (23/30) versus 42% (66/159)} were high mortality ($p < 0.001$). Approximately 62% (55,848/90,251) of Black patients were treated at high mortality TCs compared to 51% (31,347/60,990) Hispanics and 39% (167,145/429,029) Whites ($p < 0.001$). Subset analysis on blunt trauma patients only yielded similar results.

*By invitation



Conclusions: Minority trauma patients are clustered at hospitals with significantly higher-than-expected mortality. Differential mortality outcomes between centers may partly explain trauma outcomes disparities.

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Slower Walking Speed Forecasts Increased Postoperative Morbidity and One-Year Mortality Across Surgical Specialties

Thomas N. Robinson*¹, Daniel S. Wu*¹, Angela Sauaia*¹, Christina L. Dunn*¹, Jennifer Stevens-Lapley*¹, Marc Moss*¹, Joseph C. Cleveland Jr.*¹, Greg V. Stieglmann¹, Sharon K. Inouye*²

¹University of Colorado, Aurora, CO; ²Harvard University, Boston, MA

Introduction: Slower walking speed, a marker of frailty, has been related to adverse healthcare outcomes in older adults. The PURPOSE of this study was to determine the relationship between walking speed and postoperative morbidity and one-year mortality, and to compare walking speed to current standard-of-care preoperative surgical risk calculators at forecasting postoperative morbidity.

Methods: In this prospective cohort study, consecutive patients 65 years and older undergoing elective colorectal and cardiac operations with a minimum of one-year follow-up were included. Preoperatively, the timed-up-and-go was performed. This timed test starts with the subject standing from a chair, walking ten feet, returning to the chair and ends after the subject sits. Timed-up-and-go results were stratified ordinally (FAST \leq 10 sec, INTERMEDIATE = 11–14 sec, SLOW \geq 15 sec). Postoperative complications were quantified prospectively using standardized definitions. Receiver operating characteristic curves were used to compare the three timed-up-and-go groups to current standard-of-care surgical risk calculators at forecasting postoperative morbidity.

Results: This study included 272 subjects (mean age of 74 ± 6 years). Intra-operative variables were similar in the three timed-up-and-go groups.

Conclusion(s): Slower walking speed forecasted an increased risk of postoperative complications and one-year mortality in a dose response fashion across surgical specialties. Regardless of operation performed, walking speed compared favorably the more complex standard-of-care risk calculators at forecasting postoperative morbidity.

Preoperative assessment utilizing walking speed in older adults is a paradigm shift from current strategies.

*By invitation

	FAST ≤10 sec.	INTERMEDIATE 11 – 14 Sec.	SLOW ≥15 Sec.	p-Value
COLORECTAL (n = 98)				
≥1 Complication	13% (4/30)	29% (12/42)	77% (20/26)	<0.001
One-Year Mortality	3% (1/30)	10% (4/42)	35% (9/26)	0.006
CARDIAC (n = 174)				
≥1 Complication	11% (6/53)	25% (23/89)	53% (17/32)	<0.001
One-Year Mortality	2% (1/53)	3% (3/89)	13% (4/32)	0.039
Receiver Operating Characteristic Area Under Curve (AUC)				
	AUC Timed Up-and-Go		AUC Risk Calculator	
COLORECTAL	0.775 (95% CI: 0.670, 0.880)		0.554 (95% CI: 0.499, 0.609)	
CARDIAC	0.684 (95% CI: 0.603, 0.766)		0.552 (95% CI: 0.477, 0.626)	

23

Elevated Levels of Plasma Mitochondrial DNA DAMPs Are Linked to Clinical Outcome in Severely Injured Human Subjects

Jon D. Simmons*, Y. Larry Lee*, Sujata Mulekar*,
Jamie K. Hill*, Sidney B. Brevard*, Richard P. Gonzalez*,
Mark N. Gillespie*, **William O. Richards**

University of South Alabama, Mobile, AL

Objectives: Mitochondrial (mt) DNA Damage Associated Molecular Patterns (DAMPs) accumulate in the circulation after severe injury. Observations in animal models demonstrate that mtDNA DAMPs contribute to organ dysfunction; however, the link between plasma mtDNA DAMPs and outcome in severely injured human subjects has not been established. We therefore executed a prospective cohort study to determine relationships between plasma mtDNA DAMP levels and the occurrence of Systemic Inflammatory Response Syndrome (SIRS), Multiple Organ Dysfunction Syndrome (MODS), and mortality.

Methods: DNA was isolated from blood samples taken from severely injured patients at hospital days 0, 1, and 2. Real time PCR was used to quantify selected ≈200 base pair sequences corresponding to the COX1, ND1, ND6, and D-Loop mitochondrial genomic regions. MODS was defined as a Denver Multiple Organ Failure score ≥4. Statistically significant differences* (p < 0.05) were detected by non-parametric analyses.

Results: MtDNA DAMPs were quantified as threshold cycle number (lower threshold cycles indicate increased mtDNA DAMP content) and expressed as mean ± SE (Table 1). Four patients died secondary to severe MODS.

Table 1. Associations of Plasma mtDNA DAMP Levels with SIRS, MODS, and Mortality

MtDNA DAMP	No SIRS (n = 8)	SIRS (n = 5)	Fold Increase	No MODS (n = 9)	MODS (n = 4)	Fold Increase	Mortality Relative Risk (95% CI)
COX1	32.1 ± 0.9	29.0 ± 1.2	8.8*	32.6 ± 0.7	27.1 ± 0.7	43.7*	20.4* (1.3–318)
ND1	31.9 ± 0.5	30.2 ± 1.4	3.3*	32.5 ± 0.7	28.2 ± 0.7	19.0*	8.0* (1.15–55.8)
ND6	32.4 ± 0.6	28.9 ± 1.1	11.0*	32.5 ± 0.5	27.6 ± 0.8	30.3*	20.4* (1.3–318)
D-Loop	33.1 ± 0.8	28.3 ± 1.1	28.3*	32.9 ± 0.8	27.9 ± 1.3	31.8*	8.0* (1.16–55.2)

*By invitation

Conclusions: These findings comprise the first evidence that plasma mtDNA DAMPs are linked to the evolution of SIRS, MODS, and mortality in severely injured human subjects.

24**Mortality and Management of Surgical Necrotizing Enterocolitis in the United States**

Melissa Hull*, Jeremy Fisher*, Ivan Gutierrez*, Brian A. Jones*, Kuang Hornng Kang*, Michael Kenny*, David Zurakowski*, Biren Modi*, Jeffrey Horbar*, **Tom Jaksic**

Children's Hospital Boston, Boston, MA

Objectives: Necrotizing enterocolitis (NEC) is a leading cause of death in very low birth weight (VLBW) neonates. This study sought to establish national benchmarks for the mortality of surgical NEC and describe the utilization and mortality of laparotomy and peritoneal drainage.

Methods: 585 U.S. centers prospectively evaluated 188,743 VLBW neonates (401–1500 g) between January 2006 and December 2010. Survival was defined as being alive in-hospital at one year old or discharge from hospital.

Results: 17,159 (9%) had NEC with mortality 28.2%. 8,224 patients did not receive operations (medical NEC, mortality 21.3%). 8,935 were operated upon (mortality 34.6%). On multivariable regression, lower birth weight, laparotomy, and peritoneal drain were independent predictors of mortality ($P < 0.05$). In surgical NEC a plateau mortality of over 30% persisted despite birth weights over 750 g while medical NEC mortality fell consistently. For example, in neonates weighing 1251–1500 g, the mortality was 31.6% in surgical patients versus 6.6% in medical NEC (Odds ratio for death 6.1, 95% CI 4.5–8.1). Of those treated surgically, 6,131 (69%) underwent laparotomy only (mortality 31%), and 2,804 had peritoneal drainage (mortality 42%). Of those initially treated with drainage 1,283 (46%) had a subsequent laparotomy.

Conclusions: 52% VLBW neonates with NEC required surgery, which was accompanied by a substantial increase in mortality. Regardless of birth weight, surgical NEC showed a plateau in mortality that exceeded 30%. Laparotomy was the more frequent method of treatment (69%) and of those managed by drainage 46% also had a laparotomy. The drainage-treated cohort had the highest mortality.

*By invitation

25

The Clinical Significance of an Elevated Postoperative Glucose Value in Non-Diabetic Patients After Colorectal Surgery: Evidence for the Need for Tight Glucose Control?

Ravi P. Kiran*, Matthias Turina*, Jeff Hammel*, Victor W. Fazio

Cleveland Clinic Foundation, Cleveland, OH

Objective: To evaluate the significance of hyperglycemia in patients without a preoperative diagnosis of diabetes undergoing elective colorectal surgery.

Methods: Preoperative and all postoperative blood glucose measurements were retrieved for 2628 consecutive patients undergoing elective colorectal resection over 2 years at one center. Non-diabetic patients were identified as those without a preoperative diagnosis of diabetes and/or based on HbA1C levels. The association between any elevated postoperative random glucose value (hyperglycemia: >125 mg/dL) and level of elevation (>125 mg/dl or >200 mg/dl) within 72 hours of surgery in non-diabetic patients with 30-day mortality, infectious and non-infectious complications was assessed.

Results: Evaluation of 16,404 postoperative glucose measurements for all 2447 non-diabetic patients who underwent surgery in 2010 and 2011 revealed 66.7% patients experienced hyperglycemia. Degree of hyperglycemia correlated with increasing ASA class and surgical severity (blood loss). Hyperglycemia was associated with infectious and non-infectious complications and mortality, the rates of these complications increasing parallel to the degree of hyperglycemia (Table). Hyperglycemia was independently associated with septic complications ($p = 0.024$).

Table. Selected complications associated with hyperglycemia in non-diabetic patients.

	Maximal elevation of any postoperative (72 hour) glucose level				P
	Overall	Normoglycemic (≤ 125 mg/dL)	Mild HG (126-200 mg/dL)	Severe HG (> 200 mg/dL)	
N patients	2447	816 (33.3%)	1289 (52.7%)	342 (14.0%)	
Postoperative renal failure	34 (1.4%)	4 (0.49%)	18 (1.4%)	12 (3.5%)	0.001
SSI superficial	107 (4.4%)	24 (2.9%)	62 (4.8%)	21 (6.1%)	0.028
Delayed healing	11 (0.45%)	1 (0.12%)	4 (0.31%)	6 (1.8%)	0.002
Sepsis	45 (1.8%)	5 (0.61%)	28 (2.2%)	12 (3.5%)	0.002
Reintubation	9 (0.37%)	1 (0.12%)	3 (0.23%)	5 (1.5%)	0.006
Reoperation	114 (4.7%)	25 (3.1%)	64 (5.0%)	25 (7.3%)	0.006
Urinary tract infection	95 (3.9%)	25 (3.1%)	49 (3.8%)	21 (6.1%)	0.046
Deep vein thrombosis	65 (2.7%)	10 (1.2%)	37 (2.9%)	18 (5.3%)	<0.001
Length of stay (days)	8.2 +/- 7.1	6.80 +/- 5.6	8.4 +/- 6.45	11.1 +/- 10.8	<0.001
Mortality	9 (0.37%)	1 (0.12%)	4 (0.31%)	4 (1.2%)	0.042

HG: hyperglycemia; ASA: American Society of Anesthesiologists; SSI: surgical site infection

*By invitation

Conclusions: Postoperative hyperglycemia is frequent after elective colorectal surgery in non-diabetic patients. Even a single postoperative elevated glucose value is adversely associated with morbidity and mortality, this risk related to the degree of glucose elevation. These findings strongly support monitoring of glucose values and early consideration of management strategies for glycemic control after surgery even in non-diabetic patients.

FRIDAY AFTERNOON, APRIL 5th, CONTINUED

4:00 PM – 5:00 PM
White River Ballroom E-F

EXECUTIVE SESSION

ASA Fellows Only

Presentation of the Flance-Karl Award

FRIDAY EVENING, APRIL 5th

7:00 PM – 8:00 PM
White River Ballroom Prefunction

ANNUAL RECEPTION

8:00 PM – 10:00 PM
White River Ballroom E-F

ANNUAL BANQUET

Guest Speaker
From Surgery to Politics
Lord Bernard Ribeiro

SATURDAY MORNING, APRIL 6, 2013

8:00 AM – 11:00 AM
White River Ballroom E-F

SCIENTIFIC SESSION V

Moderator: New President-Elect

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Continuous Intraoperative Temperature Measurement and Surgical Site Infection Risk: Analysis of Anesthesia Information System Data in 1,008 Colorectal Procedures

Genevieve B. Melton*¹, Jon D. Vogel*², Brian R. Swenson*³, Feza H. Remzi*², David A. Rothenberger¹, Elizabeth C. Wick*⁴

¹University of Minnesota, Minneapolis, MN; ²Cleveland Clinic Foundation, Cleveland, OH; ³Mercy Clinic General and Specialty Surgery, Columbia, MO; ⁴Johns Hopkins Medical Institutions, Baltimore, MD

Objective(s): To investigate associations of intraoperative temperature and surgical site infection (SSI) in colorectal surgery with anesthesia information system (AIS) data.

Methods: Continuously measured intraoperative AIS temperature data at a large tertiary center for one year were linked to all adult abdominal colorectal cases and evaluated with American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) criteria. After cleaning spurious AIS values, univariate and multivariate analyses of SSI to descriptive temperature statistics, absolute and relative temperature threshold times, and other variables were performed.

Results: Overall, 1,008 patients (48% female, median age 53 years) underwent major colorectal procedures (7% emergent, 72% open, 173 ± 95 minutes mean procedure time) with median intraoperative temperature 36.0 using active re-warming in 92% and one-hour presurgical antibiotic administration in 91%. 30-day SSI and organ/space infection rates were 17.4% (175) and 8.5% (86). Maximum, minimum, ending and median temperatures were similar (36.6 vs.36.5, 34.9 vs.35.0, 36.4 vs. 36.2, 36.1 vs.36.0, p = NS) and percent minutes using incremental cutoffs failed to correlate SSI with

*By invitation

temperature. Absolute minutes for higher temperature cutoffs correlated with SSI, due to longer procedure times. **On multivariate analysis, significant factors associated with SSI INCLUDED preoperative diabetes (p = 0.02), OPEN approach (p = 0.04) and blood loss (p = 0.01).**

Conclusions: Although an accepted process measure, highly-granular AIS temperature data failed to demonstrate improved SSI outcomes with normothermia, and SSI prevention efforts should focus on more efficacious interventions.

27

Improving Mortality Following Emergency Surgery in Older Patients Requires Focus on Complication Rescue

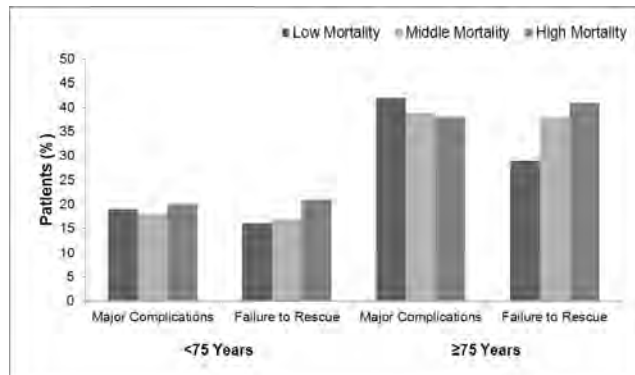
Kyle H. Sheetz*, Seth A. Waits*, Robert W. Krell*,
Darrell A. Campbell, Jr., Michael J. Englesbe*,
Amir A. Ghaferi*

University of Michigan, Ann Arbor, MI

Objective(s): Perioperative mortality rates in elderly patients undergoing emergent general/vascular operations vary widely across Michigan hospitals. We hypothesize that a hospital's ability to rescue older patients from major complications underlies this variation.

Methods: We identified 23,224 patients undergoing emergent general/vascular surgery procedures at 41 hospitals within the Michigan Surgical Quality Collaborative (MSQC) between 2006–2011. Hospitals were ranked by risk- and reliability-adjusted 30-day mortality and grouped into tertiles. We stratified patients by age (<75 and ≥75). Risk-adjusted major complication and failure to rescue (i.e., mortality following major complication) rates were determined for each tertile of hospital mortality.

Results: Risk-adjusted mortality rates in elderly patients varied 2-fold across all hospitals. Complication rates correlated poorly with mortality. Failure-to-rescue rates, however, were markedly higher in high mortality hospitals (29% lowest tertile vs. 41% highest tertile, $p < 0.01$). When compared to younger patients, overall failure to rescue rates were almost 2-fold greater in the elderly (36.1% ≥75 vs. 18.7% <75, $p < 0.01$).



*By invitation

Conclusions: Hospitals' failure to rescue patients from major complications seems to underlie the variation in mortality across Michigan hospitals following emergent surgery. While higher failure to rescue rates in the elderly may signify their diminished physiological reserve for surviving critical illness, the wide variation across hospitals also highlights the importance of systems aimed at the early recognition and effective management of major complications in this vulnerable population.

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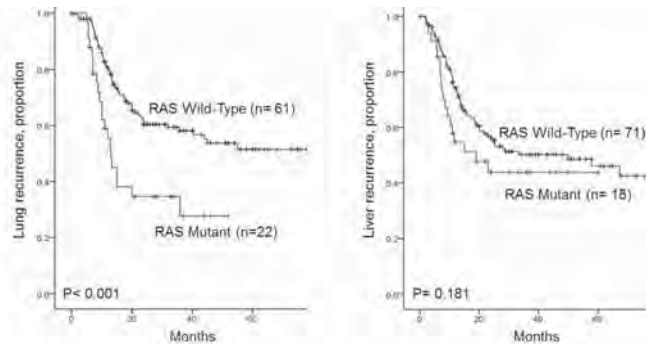
RAS Mutational Status Predicts Patterns of Recurrence and Survival in Patients Undergoing Hepatectomy for Colorectal Liver Metastases

Jean-Nicolas Vauthey, Giuseppe Zimmitti*, Junichi Shindoh*, Su S. Chen*, Scott Kopetz*, Andreas Andreou*, Steven S. Curley, Thomas A. Aloia*, Dipen M. Maru*
MD Anderson Cancer Center, Houston, TX

Objective(s): RAS mutations in colorectal cancer are associated with worse tumor biology. However, their effect on outcomes after resection of colorectal liver metastases (CLM) remains unclear.

Methods: CLM from 193 patients treated with single-regimen modern chemotherapy before hepatic resection were assessed for somatic mutations using mass spectroscopy. Relationships between RAS mutation status, recurrence patterns and survivals were investigated.

Results: Identified mutations included RAS (KRAS/NRAS) in 34 patients (18%), PIK3CA in 13 (7%), and BRAF in 2 (1%). At a median follow-up of 33 months, 3-year recurrence-free survivals (RFS) were 33.5% in RAS wild-type vs. 13.5% in RAS mutant patients ($p = 0.001$). RAS mutant patients experienced shorter 3-year lung RFS (34.6% vs. 59.3%, $p < 0.001$), while liver RFS was not influenced by RAS status (43.8% vs. 50.2%, $p = 0.181$) (**Figure**). 3-year overall survivals (OS) were 81% in RAS wild-type vs. 52.2% in RAS mutant patients ($p = 0.002$). Multivariate analyses determined that RAS mutation was independently associated with worse OS (HR 2.3, $p = 0.02$), overall RFS (HR 1.9, $p = 0.005$), and lung RFS (HR 2.0, $p = 0.01$), but not liver RFS ($p = 0.348$).



*By invitation

Conclusions: The novel finding of this study is that RAS mutation not only predicts worse survivals, but also a lung-specific recurrence pattern after curative resection of CLM.

29

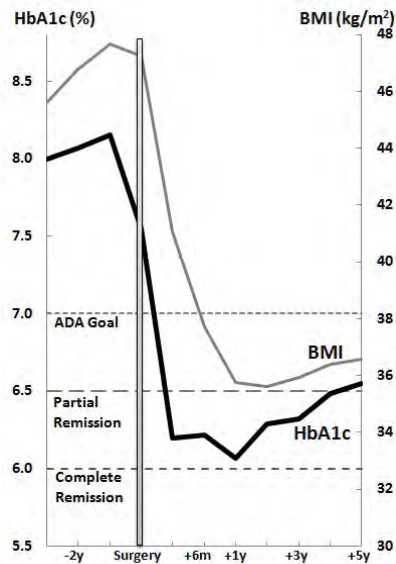
Can Diabetes Be Surgically Cured? Long Term Metabolic Effects of Bariatric Surgery in Obese Patients with Type 2 Diabetes Mellitus

Stacy A. Brethauer*, Ali Aminian*, Esam Batayyah*, Hector Romero-Talamas*, Hideharu Shimizu*, Andrea Zelisko*, Helen M. Heneghan*, Bipan Chand*, Philip R. Schauer

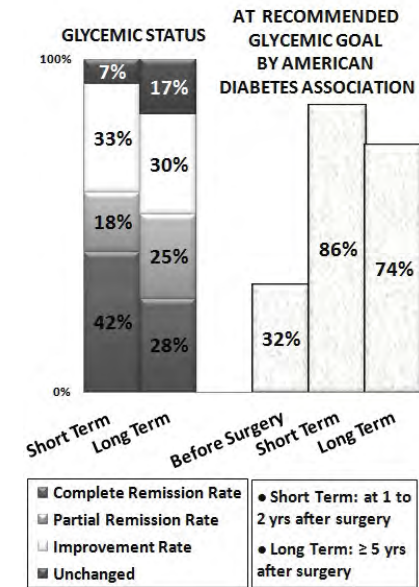
Bariatric and Metabolic Institute, Cleveland Clinic, Cleveland, OH

Objective(s): Although the impressive anti-diabetic effects of bariatric surgery have been shown in short-term studies, its durability is unknown.

Methods: Metabolic parameters and clinical outcomes of 150 patients with type 2 diabetes (T2D) who underwent bariatric surgery during 2004–2007 and had at least 5-year follow-up were assessed. Complete remission was defined as glycated hemoglobin (HbA1c) <6% and fasting glucose (FBG) <100 mg/dL off diabetic medications.



*By invitation



Results: At a median follow-up of 6 years (range 5–8) after surgery (Roux-en-Y gastric bypass, n = 107; gastric banding, n = 28; sleeve gastrectomy, n = 15), a mean excess weight loss (EWL) of 43% was associated with a mean reduction in HbA1c and FBG of 1.1% and 43.6 mg/dL, respectively. Long-term complete and partial remission rate was 28% and 25%, respectively. Longer duration of T2D ($p < 0.001$), higher preoperative HbA1c ($p = 0.001$), surgeries other than bypass ($p < 0.001$), and lower long-term EWL ($p = 0.001$) predicted lack of complete remission. Long-term recurrence of T2D after initial remission occurred in 14 patients (16%) and was associated with less EWL ($p = 0.007$). Remission/improvement rate for co-existing dyslipidemia and hypertension was 53% and 69%, respectively.

Conclusions: Bariatric surgery can induce a significant and sustainable remission of T2D in obese patients and should be considered early in the course of the disease.

30**Long Term Maturation of Congenital Diaphragmatic Hernia Treatment Results**

David W. Kays*, Saleem Islam*, Joy Perkins*,
Shawn Larson*, James L. Talbert

University of Florida, Gainesville, FL

Objective: To define the evolution of long-term CDH treatment results.

Background: CDH is a common and potentially lethal birth defect usually diagnosed prenatally. Pregnancy termination rates are significant due to concern about mortality and poor outcomes.

Methods: We analyzed 263 consecutive CDH patients treated at our institution, 60 patients previously reported here compared to 203 since. Our treatment practices focus on gentle ventilator support, with ECMO only as needed. All patients were included in the initial analysis, and patients with lethal associated anomalies were later excluded. Patients with significant but non-lethal associated anomalies, (TOF, coarctation, ASD, VSD, congenital infections, prematurity, and non-lethal chromosomal anomalies) remained. Univariate and multivariate logistic regression was performed.

Results: 208 of 263 consecutive unselected patients with CDH survived to discharge (79%). 26 patients with severe and/or lethal associated anomalies were then excluded. 208 of 237 survived (88%), including 87% of 195 left CDH and 90% of 42 right CDH. 40% of patients required ECMO, and 76% survived. Apgars at 1 and 5 minutes, liver position and liver size in chest were all independently associated with survival and ECMO ($p < 0.05$). 98 of 99 patients with left CDH and liver down survived. 96 of 195 left CDH had liver up (49%) and 75% survived. Subsequent patients showed significantly worse anatomic severity (liver) compared to the initial series, but without change in survival or ECMO.

Conclusions: This is one of the largest single institution CDH series ever reported. Survival rates are highly notable and are maintained despite worsening severity.

*By invitation

31**Mobilization of the Obese Patient and Prevention of Injury**
Christine M. Walden*¹, Herbert R. Garrison*², Michael Rotondo¹,
Linda D. Holfer*³, William B. Floyd*¹, **Walter J. Pories**³

¹Vidant Medical Center and Brody School of Medicine, East Carolina University, Greenville, NC; ²Vidant Medical Center and Brody School of Medicine, East Carolina University, Greenville, NC; ³Brody School of Medicine, East Carolina University, Greenville, NC

Objective(s): Obese patients are difficult to transport between emergency departments, imaging facilities, operating rooms, ICU's, acute care and rehabilitation resources. Each move, along with turning, bathing and access to bathrooms, poses risks of injury to personnel and patients. Similarly, inadequate mobilization raises the risks of pressure ulcers. The costs can be prohibitive.

Methods: In six pilot units, mobilization of patients was delegated to trained lift teams that covered the units 24 hrs/day for patients >200 pounds, Braden Score ≤ 18 and/or pressure ulcers.

Results: In fiscal year 2012 hospital acquired pressure ulcers on pilot units decreased from 5.1 to 3; non-pilot units remained constant. Patient handling employee injury on pilot units dropped from .097 to .037/1000 patient days, a 62% decrease, while rates on non-pilot units remained at .029/1000 patient days. Employee satisfaction rates were 100%, 99% and 95% in response to three separate queries.

Program Cost: Net program cost was \$156,031 vs. losses of \$5 million in the previous three years from employee injuries alone. Reduction in hospital acquired pressure ulcers saved \$754,604 retained revenue and \$433,888 in ancillary costs. The 62% reduction in Worker's Compensation on pilot units produced \$240,000 cost savings plus avoiding \$93,000 due to absentee coverage, total gain of \$1.52 million.

Conclusions: Lift teams on nursing units produce sharp improvements in care and prevent patient handling employee injuries. Since surgeons manage many of the obese in hospitals, lift teams offer savings and an important improvement in surgical care.

*By invitation

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Reintervention Following EVAR and Open Surgical Repair of AAA: A 15-Year Experience

Mustafa Al-Jubouri*, Subhash Thakur*, Faisal Aziz*,
Anthony J. Comerota

Jobst Vascular Institute, Toledo, OH

Objectives: EVAR has largely replaced open surgical repair (OSR) for anatomically appropriate AAA because of improved short-term outcomes. However, EVAR is associated with a notable reintervention rate. This study examined the outcomes of EVAR and OSR to compare the frequency and reason for reintervention.

Methods: Data for patients undergoing elective AAA repair between 1996 and 2011 were collected and analyzed to assess time from initial procedure to reintervention and rate of reintervention.

Results: 1144 patients underwent AAA repair; 558 (49%) had EVAR and 586 (51%) had OSR. Reinterventions occurred in 76 EVAR and 30 OSR patients (13.6% vs 5.1%, $P < 0.0001$). Endoleak was responsible for 66% of EVAR reinterventions; bleeding and incisional hernia repair were responsible for 22% each of OSR reinterventions. Time to first reintervention was shorter in OSR patients ($P < 0.001$) and was related to AAA size ($P < 0.001$). 50% and 77% of OSR reinterventions occurred within 1 month and 1 year of initial repair, respectively. 6.5% of EVAR reinterventions occurred within 1 month and 34% within 1 year. Reintervention after OSR has not changed over time, whereas it is decreasing after EVAR (Table).

Years	EVAR Group		OSR Group	
	N	Reintervention N (%)	N	Reintervention N (%)
1996–1999	31	9 (29.0)	206	8 (3.8)
2000–2002	131	21 (16.0)	149	10 (6.7)
2003–2005	109	17 (15.6)	79	5 (6.3)
2006–2008	150	24 (16.0)	79	4 (5.0)
2009–2011	137	5 (3.6)	73	3 (4.1)

Conclusion: Reintervention was more common with EVAR and occurred later compared with OSR, indicating that long-term follow-up remains necessary. Reintervention rates following EVAR appear to be decreasing.

*By invitation

IN MEMORIAM

Hiroshi Akiyama, M.D., Tokyo, Japan
George E. Cruft, M.D., Audubon, PA
Hugh A. F. Dudley, CBE, Aberdeenshire, Scotland
Ben Eiseman, M.D., Denver, CO
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San Marino, California

AMERICAN SURGICAL ASSOCIATION

FLANCE-KARL AWARD RECIPIENTS

The Flance-Karl Award was established in 1996 by Samuel A. Wells, Jr., M.D., who was then President of the Association. The primary endowment for the award was a gift from Mr. David Farrell, Chief Executive Officer of the May Corporation, and the Barnes-Jewish-Christian Health Care System, both of St. Louis, Missouri. The award recognizes I. Jerome Flance, M.D., and Michael M. Karl, M.D., two physicians in St. Louis, who cared for Mr. Farrell and his family. The Flance-Karl Award is presented to a surgeon in the United States of America who has made a seminal contribution in basic laboratory research which has application to clinical surgery. The recipient should be active in clinical or laboratory research and preferably is less than 60 years of age. Prior recipients of the Association's Medallion for Scientific Achievement are not eligible for the Flance-Karl Award.

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Waterbury, Connecticut
&
Jonathan E. Rhoads, M.D.
Philadelphia, Pennsylvania
- 1998 M. Judah Folkman, M.D.
Boston, Massachusetts
- 1999 Norman E. Shumway, M.D.
Stanford, California
- 2000 Francis D. Moore, Sr., M.D.
Boston, Massachusetts
- 2001 Bernard Fisher, M.D.
Pittsburgh, Pennsylvania
- 2002 Steven A. Rosenberg, M.D.
Bethesda, Maryland
- 2003 Steven F. Lowry, M.D.
New Brunswick, New Jersey

FLANCE-KARL AWARD RECIPIENTS (Continued)

- 2004 Patricia K. Donahoe, M.D.
Boston, Massachusetts
- 2005 Alexander W. Clowes, M.D.
Seattle, Washington
- 2006 David N. Herndon, M.D.
Galveston, Texas
- 2007 Ronald V. Maier, M.D.
Seattle, Washington
- 2008 Timothy R. Billiar, M.D.
Pittsburgh, Pennsylvania
- 2009 Joseph P. Vacanti
Boston, Massachusetts
- 2010 B. Mark Evers, M.D.
Lexington, Kentucky
- 2011 Michael T. Longaker, M.D.
Stanford, California
- 2012 Jeffrey A. Norton, M.D.
Stanford, California

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Michael E. Shapiro, M.D.	1984–1986
Ronald G. Tompkins, M.D.	1986–1988
Lawrence Rosenberg, M.D.	1988–1990
B. Mark Evers, M.D.	1990–1992
Jonathan S. Bromberg, M.D., Ph.D.	1992–1994
Ronald J. Weigel, M.D., Ph.D.	1994–1996
Bruce R. Rosengard, M.D.	1996–1998
Michael S. Conte, M.D.	1997–1999
John A. Goss, M.D.	1998–2000
Vivian Gahtan, M.D.	1999–2001
Robert C. Gorman, M.D.	2000–2002
Gilbert R. Upchurch, Jr., M.D.	2000–2001
James S. Allan, M.D.	2001–2003
Michael S. Mulligan, M.D.	2001–2003
Herbert Chen, M.D.	2002–2004
Christopher R. Mantyh, M.D.	2002–2004
James C.Y. Dunn, M.D.	2003–2005
Daniel A. Saltzman, M.D.	2003–2005
Shahab A. Akhter, M.D.	2004–2006
John R. Renz, M.D.	2004–2006
Nita Ahuja, M.D.	2005–2007
Christopher K. Breuer, M.D.	2005–2007
Marc G. Jeschke, M.D.	2006–2008
Christopher E. Touloukian, M.D.	2006–2008
Michael J. Englesbe, M.D.	2007–2009
Robert W. O'Rourke, M.D.	2007–2009
Christopher L. Wolfgang, M.D.	2007–2009
Andrew M. Cameron, M.D.	2008–2010
Rebecca A. Gladdy, M.D.	2008–2010
Jennifer F. Tseng, M.D.	2008–2010
Caprice Greenberg, M.D.	2009–2011
James O. Park, M.D.	2009–2011
Jen Jen Yeh, M.D.	2009–2011
Eric Chien-Wei Liao, M.D.	2010–2012
Tippi C. MacKenzie, M.D.	2010–2012
Genevieve Melton-Meaux, M.D.	2010–2012
Vishal Bansal, M.D.	2011–2013

David G. Rabkin, M.D.	2011–2013
Bryan W. Tillman, M.D.	2011–2013
Ryan C. Fields, M.D.	2012–2014
James J. Mezhir, M.D.	2012–2014
Sunil Singhal, M.D.	2012–2014
Bao-Ngoc H. Nguyen, M.D.	2013–2015
Kimberly J. Riehle, M.D.	2013–2015
Joseph J. Skitzki, M.D.	2013–2015

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19	Amer H. Zuriekat

SCHEDULE-AT-A-GLANCE

THURSDAY, APRIL 4th

8:15 a.m.	President's Opening Remarks Secretary's Welcome and Introduction of New Fellows Elected in 2012 President's Introduction of Honorary Fellows Report of the Committee on Arrangements Presentation of the Medallion for Advancement of Surgical Care	<i>White River Ballroom E-F</i>
9:10 a.m.	Scientific Session I <i>Moderator: L.D. Britt, MD, MPH</i>	<i>White River Ballroom E-F</i>
10:50 a.m.	Address by the President <i>Introduction: Kenneth L. Mattox, MD</i> <i>Address: L.D. Britt, MD, MPH</i>	<i>White River Ballroom E-F</i>
1:30 p.m.	Scientific Session II <i>Layton F. Ridders, MD</i>	<i>White River Ballroom E-F</i>

FRIDAY, APRIL 5th

7:00 a.m.	ASA Women in Surgery Breakfast	<i>White River Ballroom A</i>
8:00 a.m.	Scientific Session III <i>Moderator: L.D. Britt, MD, MPH</i>	<i>White River Ballroom E-F</i>
10:30 a.m.	Forum Discussion: "Healthcare Reform: The Impact on American Surgery" <i>Moderator: L.D. Britt, MD, MPH</i>	<i>White River Ballroom E-F</i>
1:30 p.m.	Scientific Session IV <i>Moderator: Kenneth L. Mattox, MD</i>	<i>White River Ballroom E-F</i>
4:00 p.m.	Executive Session (Fellows Only) Presentation of the Flance-Karl Award	<i>White River Ballroom E-F</i>
7:00 p.m.	Annual Reception	<i>White River Ballroom, Prefunction</i>
8:00 p.m.	Annual Banquet <i>(Black tie preferred, but dark suits are acceptable.)</i>	<i>White River Ballroom E-F</i>

SATURDAY, APRIL 6th

8:00 a.m.	Scientific Session V <i>Moderator: New President- Elect</i>	<i>White River Ballroom E-F</i>
11:00 a.m.	Adjourn	

