THE SOCIETY OF BLACK ACADEMIC SURGEONS

IN JOINT SPONSORSHIP WITH

THE CLEVELAND CLINIC

Cleveland Clinic

PRESENT THE

18TH ANNUAL SCIENTIFIC SESSION

APRIL 17-20, 2008

AT THE

INTERCONTINENTAL HOTEL

AND BANK OF AMERICA CONFERENCE CENTER

CLEVELAND, OHIO

Objectives

After completing this activity, the participant will be able to:

- Review technical advances in general surgery, orthopedic surgery, cardiothoracic and vascular surgery, trauma management, and oncology surgery, as well as advances in subspecialty surgical care;
- Discuss state-of-the-art transplant and nonoperative management of traditional surgical diseases;
- Describe the relationship between a major medical center and the local and/or regional community and the international medical community;
- Provide education pertaining to therapies and new modalities of minimally invasive surgery.

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 Cleveland Clinic Foundation Center for Continuing Education and the Society of Black Academic Surgeons. The Cleveland Clinic Foundation Center for Continuing Education is accredited by the ACCME to provide continuing medical education for physicians.

The Cleveland Clinic Foundation Center for Continuing Education designates this educational activity for a maximum of 15.25 *AMA PRA Category 1 Credits*™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

This activity may be submitted for American Osteopathic Association Continuing Medical Education credit in Category 2.

Disclaimer

The information in this educational activity is provided for general medical education purposes only and is not meant to substitute for the independent medical judgment of a physician relative to diagnostic and treatment options of a specific patient's medical condition. The viewpoints expressed in this CME activity are those of the authors/faculty. They do not represent an endorsement by The Cleveland Clinic Foundation. In no event will The Cleveland Clinic Foundation be liable for any decision made or action taken in reliance upon the information provided through this CME activity.

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Committee on Local Arrangements

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Anthony A. Stallion, MD – Co-Chair
Cleveland Clinic

Guest Lecturers

John Fung, MD
Department Chairman, General Surgery;
Director, Transplantation Center,
Cleveland Clinic

Carlos A. Pellegrini, MD
The Henry N. Harkins Professor and
Chairman, University of Washington

Jeffrey Ponsky, MD
Professor and Chairman, Department of Surgery,
Case Western Reserve University School of Medicine;
Chairman, Department of Surgery, University Hospitals of Cleveland

Ian Smith, MD
Physician, Author, TV/Radio Personality, Health Advocate

2007 Honorary Fellows

Michael J. Zinner, MD
Surgeon-in-Chief, Brigham and Women's Hospital;
Chairman, Department of Surgery, Brigham and Women's Hospital;
Clinical Director, Dana Farber / Brigham and Women's Cancer Center;
Co-Director, Gastrointestinal Cancer Treatment Center,
Dana Farber / Brigham and Women's Cancer Center

Raphael E. Pollock, MD, PhD
Division Head, Surgery; Professor, Surgical Oncology;
Professor, Molecular & Cellular Oncology;
Chair, Surgical Oncology, M. D. Anderson Cancer Center

Faculty Disclosure

In accordance with the Standards for Commercial Support issued by the Accreditation Council for Continuing Medical Education (ACCME), The Cleveland Clinic Foundation Center for Continuing Education requires resolution of all faculty conflicts of interest to ensure CME activities are free of commercial bias.

The following faculty have indicated that they may have a relationship, which in the context of their presentation(s), could be perceived as a potential conflict of interest:

Eren Berber, MD	AngioDynamics	Consulting
Roy Greenberg, MD	Boston Scientific	Consulting
	Cook, Inc.	Intellectual Property Rights; Consulting; Teaching & Speaking; Research Support
	W.L. Gore	Research Support
	TeraRecon	Research Support
Jihad Kaouk, MD	Endocare, Inc.	Teaching & Speaking
	Intuitive Surgical	Teaching & Speaking
Jeffrey Ponsky, MD	US Endoscopy	Consulting

The following faculty have indicated they have no relationship which, in the context of their presentation(s), could be perceived as a potential conflict of interest:

Cherisse Berry, MD	John Fung, MD	Carlos Pellegrini, MD
Sylvester Black, MD	Sherilyn G. Burroughs, MD	Robert Riviello, MD
Daniel Borja-Cacho, MD	C. Martin Harris, MD	Chris Ronayne
L.D. Britt, MD, MPH	Eddie Hoover, MD	Velma Scantlebury, MD
Anjeanette Brown, MD	Karen Huezo, MD	Philip Schauer, MD
Harvey Bumpers, MD	Darrell Hunt, MD	Baiju Shah, JD
Karyn Butler, MD	Van Johnson, MD	Susan Smith, MD
Anthony Charles, MD	Evelyn Kachikwu, MD	Steven C. Stain, MD
Chris Coburn, MPA	Jeanwan Kang, MD	Anthony Stallion, MD
Edward Cornwell, III, MD	Naeemah Logan, MD	Marshall Strome, MD
Robert Corprew, MD	Paul Matsen	Lars Svensson, MD, PhD
Chris Eng, MD, PhD	Margaret McKenzie, MD	Girma Tefera, MD
Tommaso Falcone, MD	Fassil Mesfin, MD	Minhao Zhou, MD

History of The Society of Black Academic Surgeons

The Society of Black Academic Surgeons (SBAS) was founded in 1989. Its goal is to stimulate academic excellence among its members by providing a forum of scholarship in collaboration with the leading Departments of Surgery in the U.S. It encourages and supports professional development of black surgical residents and attempts to recruit the best and brightest medical students into a career in surgery.

The annual meetings of SBAS, attended by members as well as numerous residents and students, provide outstanding programs in both the science and practice of surgery. The first Annual Meeting was hosted by Dr. David Sabiston at Duke University. Annual meetings since then have been hosted by Departments of Surgery throughout the U.S., including Harvard (1991), University of California at Davis (1993), University of Texas Medical Branch at Galveston (1994), the University of North Carolina at Chapel Hill (1995), the University of Colorado at Denver (1996), SUNY Buffalo (1997), Howard University College of Medicine (1998, 2004), the University of Louisville (1999), Charles R. Drew University of Medicine and Science (2000), Harvard University (2001), Morehouse School of Medicine (2002), the University of Alabama at Birmingham (2003), the University of Pittsburgh (2005), the University of Cincinnati (2006), and the University of Chicago (2007).

SBAS is governed by an Executive Committee and has more than 200 members throughout the United States. Membership is not restricted by race; the criteria for membership requires that the prospective member be a "reputable surgeon or surgical investigator who occupies a faculty position in a university department of surgery or free-standing surgical residency program." In addition to its Annual Meeting, a website (www.SBAS.net) has been established to improve communication with its constituency and persons interested in the organization. The ***American Journal of Surgery*** is the official publication of SBAS.

Past Presidents of The Society of Black Academic Surgeons

1989-1991: Arthur Fleming, MD

1991-1993: Onye E. Akwari, MD

1993-1995: Eddie L. Hoover, MD

1995-1997: Claude H. Organ, Jr, MD

1997-1998: LaSalle D. Leffall, Jr, MD

1998-1999: Haile T. Debas, MD

1999-2001: L. D. Britt, MD, MPH

2001-2003: Clive O. Callender, MD

2003-2004: Edward Cornwell, III, MD

2004-2005: Robert L. McCauley, MD

2005-2006: Selwyn M. Vickers, MD

2006-2007: Michael T. Watkins, MD

Program Agenda

Thursday — April 17, 2008

1:00-5:00 pm	**SBAS Executive Council Business Meeting,** InterContinental Hotel (Room 203)
3:30-6:00 pm	**Advance Registration,** InterContinental Hotel (3rd Floor, A Side)
4:30-6:30 pm	**Women in Surgery Reception,** InterContinental Hotel (N. Foyer, 2nd Floor, Room 201)
6:30-8:30 pm	**Welcome Reception,** Crile Lobby (A Bldg.)

Friday — April 18, 2008

7:00 am	**Registration,** InterContinental Hotel (A Side)
7:00 am	**Continental Breakfast** (Bunts Auditorium)
8:00-10:50 am	**Local Program,** Bunts Auditorium
8:00-10:50 am	**Local Program,** Bunts Auditorium
11:00-11:25 am	**Visit Exhibitors Booths,** InterContinental Hotel (3rd Floor Foyer, A Side)
11:30-12:45 pm	**Luncheon and Panel Discussion,** InterContinental Hotel (A&B Ballroom)
12:45-2:00 pm	**Scientific Session I – Oral Presentations,** InterContinental Hotel (IC Conference Center)
2:00-2:45 pm	**Asa Yancy Lecture,** InterContinental Hotel
2:45-3:00 pm	**Refreshment Break/Exhibits,** InterContinental Hotel (3rd Floor Foyer, A Side)
3:00-4:15 pm	**Scientific Session II – Oral Presentations,** InterContinental Hotel (IC Conference Center)
4:30-6:30 pm	**Optional Workshops,** InterContinental Hotel (2nd Floor, Rooms 201, 204, 207)
7:30-10:30 pm	**The Cleveland Experience Reception,** Rock & Roll Hall of Fame and Museum

Program Agenda

(continued)

Saturday — April 19, 2008

6:30-7:00 am	**Continental Breakfast/Exhibits,** InterContinental Hotel (3rd Floor Foyer, A&B Sides)
7:00-8:00 am	**Poster Session,** InterContinental Hotel (3rd Floor Foyer, B Side)
8:00-9:15 am	**Scientific Session III – Oral Presentations,** InterContinental Hotel (IC Conference Center)
9:15-10:00 am	**State-of-the-Art Lecture,** InterContinental Hotel
10:00-10:30 am	**Refreshment Break/Exhibits,** InterContinental Hotel (3rd Floor Foyer, A Side)
10:30-11:45 am	**SBAS Business Meeting (SBAS members),** InterContinental Hotel Conference Center
10:30-11:45 am	**Visit Exhibitors Booths (Non-members),** InterContinental Hotel (3rd Floor Foyer, A Side)
12:00-1:15 pm	**Luncheon and Panel Discussion,** InterContinental Hotel (2nd floor Ballroom A&B)
1:15-2:30 pm	**Scientific Session IV – Oral Presentations,** InterContinental Hotel (IC Conference Center)
2:30-3:15 pm	**State-of-the-Art Lecture,** InterContinental Hotel
3:15-3:45 pm	**Refreshment Break/Exhibits,** InterContinental Hotel (3rd Floor Foyer, A Side)
3:45-4:45 pm	**Presidential Address,** InterContinental Hotel
4:45-5:45 pm	**Panel Discussion,** InterContinental Hotel
7:00-7:30 pm	**Presidential Reception,** InterContinental Hotel (2nd Floor Ballroom Foyer)
7:30-10:30 pm	**Presidential Dinner and Keynote Speaker,** InterContinental Hotel (2nd Floor Ballroom A&B)

SOCIETY OF BLACK ACADEMIC SURGEONS

SOCIAL PROGRAM

Social Program Committee:

Deborah Plummer, PhD
Anthony Stallion, MD
Amy Hochadel
Angie Williams
Alexandria Boone

THURSDAY — APRIL 17, 2008

6:30-8:30 pm — **Welcome Reception,** Crile Lobby (A Bldg.)

FRIDAY — APRIL 18, 2008

11:30-12:45 pm — **Luncheon and Panel Discussion,** InterContinental Hotel (A&B Ballroom)

7:30-10:30 pm — **The Cleveland Experience Reception,** Rock & Roll Hall of Fame and Museum

SATURDAY — APRIL 19, 2008

12:00-1:15 pm — **Luncheon and Panel Discussion,** InterContinental Hotel (2nd Floor Ballroom A&B)

3:45-4:45 pm — **Presidential Address,** InterContinental Hotel

7:00-7:30 pm — **Presidential Reception,** InterContinental Hotel (2nd Floor Ballroom Foyer)

7:30-10:30 pm — **Presidential Dinner and Keynote Speaker,** InterContinental Hotel (2nd Floor Ballroom A&B)

SUNDAY — APRIL 20, 2008

9:00-11:00 am — **Gospel Brunch,** InterContinental Hotel (Phillips Break Area, 2nd Floor)

LOCAL PROGRAM

SOCIETY OF BLACK ACADEMIC SURGEONS

LOCAL PROGRAM

THURSDAY — APRIL 17, 2008

1:00-5:00 pm — **SBAS Executive Council Business Meeting**
InterContinental Hotel (Room 203)

4:30-6:30 pm — **Women in Surgery Reception,** InterContinental Hotel (N. Foyer, 2nd Floor, Room 201)
Host: Linda Bradley, MD
Staff Physician, Obstetrics & Gynecology and Women's Health Institute, Director of Hysteroscopic Services, Cleveland Clinic

6:30-8:30 pm — **Welcome Reception,** Crile Lobby (A Bldg)

FRIDAY — APRIL 18, 2008

8:00-10:50 am — **Local Program,** Bunts Auditorium

8:00 am — **Introduction**
Anthony Stallion, MD
Executive Director of Professional Staff Diversity; Staff, Pediatric Surgery, Cleveland Clinic

8:00 am — **Welcome**

Delos "Toby" Cosgrove, MD
President & CEO, Cleveland Clinic

Andrew Fishleder, MD
Executive Dean, Lerner College of Medicine, Cleveland Clinic

Joseph Hahn, MD
Chief of Staff, Cleveland Clinic

John Fung, MD
Department Chairman, General Surgery, Cleveland Clinic

Deborah Plummer, PhD
Executive Director, Office of Diversity, Cleveland Clinic

LOCAL PROGRAM
(CONTINUED)

FRIDAY *(CONTINUED)* — APRIL 18, 2008

8:15-8:35 am — **Genetics-Directed Surgical Decision Making**
Charis Eng, MD, PhD

8:35-8:55 am — **Radio Frequency Ablation**
Eren Berber, MD

8:55-9:15 am — **Endovascular Innovations**
Roy Greenberg, MD

9:30-9:50 am — **Transcatheter Aortic Valve Replacement**
Lars Svensson, MD, PhD

9:50-10:10 am — **Laser Cryosurgery for Early Laryngeal Cancer Treatment**
Marshall Strome, MD

10:10-10:30 am — **eHealth**
C. Martin Harris, MD

10:30-10:50 am — **Global Medicine**
Paul Matsen

11:00-11:25 am — **Visit Exhibitors Booths,** InterContinental Hotel (3rd Floor Foyer, A Side)

11:30-12:45 pm — **Luncheon / Keynote Speaker Panel Discussion,** InterContinental Hotel (A&B Ballroom)

Cleveland Clinic Video (10-12 minute version)

"Health Care Institutions: Urban Economic Impact"

Introductions/Moderator — **Linda Bradley, MD** — Staff Physician, Obstetrics & Gynecology and Women's Health Institute, Director of Hysteroscopic Services, Cleveland Clinic

Chris Ronayne — President, University Circle Incorporated

Baiju R. Shah — President & CEO, BioEnterprise

Chris Coburn — Executive Director, CCF Innovations

Scientific Sessions

Scientific Sessions

Friday — April 18, 2008

7:00 am — **Registration,** InterContinental Hotel (A Side)

Scientific Sessions, InterContinental Hotel
(IC Conference Center)

12:45-2:00 pm — **SESSION I — Oral Presentations**

2:00-2:45 pm — **Asa Yancey Lecture**
"Swimming Against the Current:
Building Strength Through Adversity"
Carlos A. Pellegrini, MD
The Henry N. Harkins Professor and Chairman,
University of Washington Medical Center

3:00-4:15 pm — **SESSION II — Oral Presentations**

4:30-6:30 pm — **Optional Workshops**
InterContinental Hotel (2nd Floor)

"Advances in Surgical Simulation"

Philip R. Schauer, MD
Director, Bariatric and Metabolic Institute;
Director, Advanced Laparoscopic and Bariatric
Surgery Program, Cleveland Clinic
"Resident and Post Residency Training for the 21st Century"

Jihad Kaouk, MD
Associate Professor of Surgery;
Director, Robotic Urologic Surgery,
Cleveland Clinic
"Robotic Surgery"

Scientific Sessions

Saturday — April 19, 2008

7:00-8:00 am — **Poster Session, Continental Breakfast/Exhibits,** InterContinental Hotel (3rd Floor Foyer, B Side)

8:00-9:15 am — **SESSION III — Oral Presentations**

9:15-10:00 am — **State of the Art Lecture** – *John Fung, MD, PhD* Department Chairman, General Surgery; Cleveland Clinic
"Intestinal Transplantation: Progress & Problems"

10:30-11:45 am — **SBAS Business Meeting (SBAS members),** InterContinental Hotel (Conference Center)

10:30-11:45 am — **Visit Exhibitors Booths (Non-members),** InterContinental Hotel (3rd Floor Foyer, A Side)

12:00-1:15 pm — **Luncheon and Panel Discussion** InterContinental Hotel (2nd Floor Ballroom A&B)

Introduction/Moderator: **Teresa Dews, MD** — Director, Pain Service, Hillcrest Hospital; Staff Anesthesiologist, Cleveland Clinic

Resident Career Path Forum

LD Britt, MD, MPH — Professor and Chairman, Department of Surgery, Eastern Virginia Medical School, Norfolk, VA

Tommaso Falcone, MD — Associate Chief of Staff, Chairman, Women's Institute, Cleveland Clinic

Eddie E. Cornwell, III, MD — Lasalle D. Lefall Jr. Professor and Chair, Department of Surgery, Howard University College of Medicine, Washington, DC

1:15-2:30 pm — **SESSION IV — Oral Presentations**

2:30-3:15 pm — **State of the Art Lecture** – ***Jeffrey Ponsky, MD*** Professor and Chairman, Department of Surgery, Case Western Reserve University School of Medicine; Chairman, Department of Surgery, University Hospitals of Cleveland
"Natural Orifice Transluminal Endoscopic Surgery"

Scientific Sessions

Saturday *(continued)* — April 19, 2008

3:15-3:45 pm — **Refreshment Break/Exhibits,** InterContinental Hotel (3rd Floor Foyer, A Side)

3:45-4:45 pm — **Presidential Address,** InterContinental Hotel ***Steven Stain, MD*** — Professor and Chair, Department of Surgery, Albany Medical Center, Albany, NY

4:45-5:45 pm — **Panel Discussion,** InterContinental Hotel ***"Faculty Development"***

Moderator: **Karyn Butler, MD** — Associate Professor of Surgery, University of Cincinnati, Cincinnati, OH

Margaret McKenzie, MD — Staff Physician, Obstetrics & Gynecology and Women's Health Institute; Staff Physician, College of Medicine, Cleveland Clinic

Carlos A. Pellegrini, MD — The Henry N. Harkins Professor and Chairman, University of Washington Medical Center, Seattle, WA

Jeffrey Ponsky, MD — Professor and Chairman, Department of Surgery, Case Western Reserve University School of Medicine; Chairman, Department of Surgery, University Hospitals of Cleveland

Velma Scandibury, MD — Associate Professor of Surgery, University of Pittsburgh Medical Center's Transplantation Institute, Pittsburgh, PA

Steven C. Stain, MD — Professor and Chair, Department of Surgery, Albany Medical Center, Albany, NY

7:00-7:30 pm — **Presidential Reception,** InterContinental Hotel (2nd Floor Ballroom Foyer)

7:30-10:30 pm — **Presidential Dinner,** InterContinental Hotel (2nd Floor Ballroom A&B)
Introduction: **Tanya I. Edwards, MD, MEd,** Medical Director, Center for Integrative Medicine, Staff in the Department of Family Medicine, Cleveland Clinic

Keynote Speaker: Ian Smith, MD

SESSION I
ORAL PRESENTATIONS

FRIDAY, APRIL 18, 2008
12:45 P.M.-2:00 P.M.

Moderators: Malcom Brock, MD, and Julian Kim, MD

1. A NOVEL SMALL MOLECULE, SMIL-1, INHIBITS THE BIOLOGICAL EFFECTS OF VEGFR-3 AND INDUCES APOPTOSIS IN HUMAN BREAST CANCER CELLS
   DL Hunt, EV Kurenova, DA Ostrov, VM Golubovskaya, CA Garces, SN Hochwald, WG Cance
2. CLINICAL UTILITY OF BREAST SPECIFIC GAMMA IMAGING FOR EVALUATING DISEASE EXTENT IN NEWLY DIAGNOSED BREAST CANCER PATIENTS
   M Zhou, N Johnson, S Gruner, GW Ecklund, P Meunier, D Blanchard, G Green, M Glissmeyer, Kari Steinbock, S Bryn, T Delamelena
3. COMBINATION THERAPY USING DR4 AND DR5 ANTIBODIES AND CHEMOTHERAPY INHIBITS PANCREATIC CANCER GROWTH IN AN ANIMAL MODEL
   SM Smith, JP Arnoletti, DJ Buchsbaum, SM Vickers
4. COMBINED THERAPY WITH TRAIL AND TRIPTOLIDE INCREASES APOPTOSIS IN PANCREATIC CANCER CELLS
   D Borja-Cacho, P Zwolak, R Chugh, R Talukdar, V Dudeja, Y Yokoyama, M Antonoff, A Saluja, S Vickers
5. USE OF A NOVEL APOPTOTIC PEPTIDE (NEFM1) TO EXPLOIT CXCR-4 RECEPTORS ON HUMAN BREAST CANCERS
   HL Bumpers, MB Huang, W Harrington, M Powell, VC Bond

SOCIETY OF BLACK ACADEMIC SURGEONS
18TH ANNUAL SCIENTIFIC SESSION
SESSIONS AT A GLANCE

SESSION II
ORAL PRESENTATIONS

FRIDAY, APRIL 18, 2008
3:00 P.M.-4:15 P.M.

Moderators: Lynt Johnson, MD, and Bijan Eghtesad, MD

6. A COMPARISON OF HER 2 POSITIVITY IN AFRICAN AMERICAN WOMEN EVALUATED BY IMMUNOHISTOCHEMISTRY (IHC) AND FISH (FLUORESCENE IN SITU HYBRIDIZATION)
   AT Brown, L Thanasoulis, TG Frazier
7. A STRICT PROPHYLATIC AND PREEMPTIVE ANTIVIRAL PROTOCOL IS HIGHLY EFFECTIVE IN PREVENTING CYTOMEGALOVIRUS AND EPSTEIN BARR VIRUS-RELATED COMPLICATIONS IN INTESTINAL TRANSPLANT RECIPIENTS
   S Gordon Burroughs, RS Venick, L Candell, S McDiarmid, J Vargas, Y Esmailian, J Colangelo, A Zafar, D Winston, RW Busuttil, DG Farmer
8. OUTCOMES IN AFRICAN AMERICANS AFTER ORTHOTOPIC LIVER TRANSPLANTATION
   N Logan, JC Hong, S Gordon Burroughs, RW Busuttil
9. T REGULATORY CELLS (TREGS) AND TRAMP C1 RADIATION EXPOSURE: SUPPRESSOR OR STIMULATOR OF THE IMMUNE SYSTEM?
   EL Kachikwu, D Schaue, YP Liao, K Iwamoto, J Economou, H Bumpers, WH McBride
10. THE EFFECT OF A NOVEL ALPHA-FETOPROTEIN-DERIVED PEPTIDE AND TAMOXIFEN ON PROLIFERATION OF CULTURED HUMAN GLIOBLASTOMA CELLS
    FB Mesfin, AJ Popp, JA Bennett, TT Andersen

SESSION III
ORAL PRESENTATIONS

SATURDAY, APRIL 19, 2008
8:00 A.M.-9:15 A.M.

Moderators: Kimberly Joseph, MD, and Mark Malingoni, MD

11. CAN MID-LEVEL PROVIDERS HELP ADDRESS THE GAP IN SURGICAL DELIVERY IN AFRICA? PERSPECTIVES FROM TWO ANGOLAN HOSPITALS
    R Riviello, SO Rogers
12. CHARLSON COMORBIDITY INDEX IS A PREDICTOR OF INTENSIVE CARE UNIT LENGTH OF STAY AND MORTALITY IN THE ELDERLY TRAUMA PATIENT
    A Charles, S Schiro, R Stafford
13. EARLY FACTORS ASSOCIATED WITH THE NEED FOR MASSIVE TRANSFUSION
    K Huezo, J Johannigman, T Pritts, K Davis, P Muskat
14. IS THERE A BENEFIT TO MULTI-DISCIPLINARY ROUNDS IN AN "OPEN" TRAUMA ICU REGARDING VENTILATOR-ASSOCIATED PNEUMONIA?
    V Johnson, A Mangram, C Mitchell, M Lorenzo, D Howard, E Dunn
15. SEVERE TRAUMATIC BRAIN INJURY: IS THERE A GENDER DIFFERENCE IN MORTALITY?
    C Berry, A Salim, M Ottochian, M Wilson, D Margulies

SOCIETY OF BLACK ACADEMIC SURGEONS
18TH ANNUAL SCIENTIFIC SESSION
SESSIONS AT A GLANCE

SESSION IV
ORAL PRESENTATIONS

SATURDAY, APRIL 19, 2008
1:15 P.M.-2:30 P.M.

Moderators: Linda Graham, MD, and Michael Watkins, MD

16. APOLIPOPROTEIN $E^{-/-}$ MICE HAVE DELAYED SKELETAL MUSCLE HEALING FOLLOWING HIND LIMB ISCHEMIA REPERFUSION
    J Kang, H Albadawi, VI Patel, TA Abbruzzese, JH Yoo, WG Austen Jr, MT Watkins
17. CARDIAC SPECIFIC STAT-3 DELETION PREVENTS MYOCARDIAL DECOMPENSATION FOLLOWING PRESSURE-OVERLOAD
    MD Goodman, SE Koch, LA Friend, KL Butler
18. ESTROGEN RECEPTORS ARE INVOLVED IN THE 17-BETA ESTRADIOL MEDIATED PROTECTION AGAINST MICRO-VASCULAR ENDOTHELIAL CELL HYPERPERMEABILITY
    R Corprew, B Tharakan, JG Whaley, FA Hunter, EW Childs
19. IL-4 AND IL-13-INDUCED PROTECTION FROM COMPLEMENT-MEDIATED NECROSIS IN VASCULAR ENDOTHELIAL CELLS REQUIRES ACTIVATION OF AKT, SREBP, AND LIPID BIOSYTHESIS
    S Black, B Benson, A Dalmasso
20. OUTCOMES OF TIBIAL ARTERY ANGIOPLASTY FOR LIMB SALVAGE
    G Tefera, T Bayer

Posters

Poster Session 1: General Surgery

Moderators: Debra Ford, MD, and Alan Siperstein, MD

1. EARLY RESULTS OF PHARMACOMECHANICAL THROMBECTOMY FOR DEEP VENOUS THROMBOSIS IN POSTPARTUM PATIENTS
   KS Amankwah, K Sankhodor, MJ Costanza, V Gahtan
2. HEPARIN-INDUCED THROMBOCYTOPENIA: WHO GETS HIT?
   CN Clarke, SP Keegan, EW Mueller, NE Ernst, KL Butler
3. RACE BASED VARIATIONS IN OUTCOMES AFTER LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS: WEIGHT LOSS VERSUS COMORBIDITY RESOLUTION
   T Fullum, D Dexter, DC Chang, C Louisey, P Turner, EE Cornwell
4. IS THERE A ROLE FOR PARTIAL CHOLECYSTECTOMY IN THE SETTING OF SEVERE INFLAMMATION?
   AJ Mangram, CF Sharp, RZ Garza, K Jones, EL Dunn
5. WHERE IS THE AFRICAN AMERICAN SURGEON?
   GD McClain, DM Mahvi, R McDonald, R Smith, P Hatfield
6. NATIONAL TRENDS IN PARATHYROID SURGERY FROM 1997 TO 2007: A DECADE OF CHANGE
   M Milas, A Greene, J Mitchell, G Barbosa, M Tsinberg, E Berber, A Siperstein
7. AVOIDABLE REOPERATIONS FOR THYROID AND PARATHYROID SURGERY: EFFECT OF HOSPITAL VOLUME
   J Mitchell, M Milas, G Barbosa, J Sutton, E Berber, A Siperstein
8. A RETROSPECTIVE REVIEW OF THE TREATMENT ALGORITHM AND COMPLICATIONS IN THE BELT LIPECTOMY, PANNICULECTOMY AND ABDOMINOPLASTY PATIENT POPULATIONS AT ONE INSTITUTION
   LA Whitty, J Knoetgen III, P Petty
9. LAPAROSCOPIC VERSUS OPEN COMPONENT SEPARATION FOR COMPLEX ABDOMINAL WALL RECONSTRUCTIONS
   CP Williams, J Jin, MJ Rosen

Poster Session 2: Oncology

Moderators: Carl Jackson, MD, and John Jasper, MD

10. IDENTIFICATION OF A HUMAN HEPATOCELLULAR CANCER STEM PHENOTYPE WITH OCT4 AND TGF-BETA MEMBERS
R Amin, K Kitisin, W Jgunoori, T Blake, J Mendelson, L Mishra, L Johnson
11. DCIS: THE HARLEM EXPERIENCE
O Appresai, H DePaz, A Ramcharan, SF Oluwole
12. LOCAL RECURRENCE AFTER LAPAROSCOPIC RADIO-FREQUENCY ABLATION OF LIVER TUMORS: AN ANALYSIS OF 1032 TUMORS TREATED WITH THE 2ND GENERATION ABLATION TECHNOLOGY
E Berber, A Siperstein
13. ENHANCED EXPRESSION OF THE UNFOLDED PROTEIN RESPONSE IN KELOID FIBROBLASTS
PD Butler, Z Wang, MT Longaker, AC Koong, GP Yang
14. CYTOREDUCTIVE SURGERY AND CONTINOUS HYPERTHERMIC PERITONEAL PERFUSION (CHPP) IN CHILDREN: A PILOT STUDY
SD Moore-Olufemi, H Green, P Anderson, K Hunt, P Mansfield, A Hayes-Jordan
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SOCIETY OF BLACK ACADEMIC SURGEONS

18TH ANNUAL SCIENTIFIC SESSION

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Society of Black Academic Surgeons

18th Annual Scientific Session

Posters

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ASA Yancey Lecture

Carlos A. Pellegrini, MD
The Henry N. Harkins Professor and Chairman,
Department of Surgery, University of Washington Medical Center
"Swimming Against the Current: Building Strength Through Adversity"

State of the Art Lectures

John Fung, MD, PhD
Chairman, Department of General Surgery;
Director, Transplantation Center, Cleveland Clinic
"Intestinal Transplantation: Progress and Problems"

Jeffrey Ponsky, MD
Professor and Chairman, Department of Surgery,
Case Western Reserve University School of Medicine;
Chairman, Department of Surgery, University Hospitals of Cleveland
"Natural Orifice Transluminal Endoscopic Surgery"

Dr. Claude H. Organ, Jr. Resident Award Winners

2003	**Richard E. Redlinger, Jr, BS** Children's Hospital of Pittsburgh **Donn H. Spight, MD** University of Cincinnati
2004	**Zara R. Cooper, MD, MSc** Brigham and Women's Hospital
2005	**Sonya Walker, MD** University of Pittsburgh
2006	**Stephen H. Gray, MD** University of Alabama at Birmingham **Georgia Holder Haynes, MD** Texas A&M University
2007	**Sylvester Black, MD [1st Place]** University of Minnesota **ShaRon Jackson, MD [2nd Place]** University of Cincinnati

Session Moderators

Malcolm V. Brock, MD — Associate Professor, Division of Thoracic Surgery; Associate Professor, Division of Tumor Biology, Johns Hopkins Hospital, Baltimore, MD

Bijan Eghtesad, MD — Transplant Surgeon, Surgery Institute, Cleveland Clinic, Cleveland, OH

Linda Graham, MD — Staff Physician, Heart and Vascular Institute; Staff Physician, Lerner Research Institute, Cleveland Clinic, Cleveland, OH

Lynt B. Johnson, MD — Vice Chair and Professor, Department of Surgery; Chair, Transplantation and Hepatobiliary Surgery, Georgetown University Hospital, Washington, DC

Kimberly Joseph, MD — Director, Trauma Intensive Care Unit, Cook County Hospital, Chicago, IL

Julian Kim, MD — Professor and Chief, Division of Surgical Oncology, University Hospital, Cleveland, OH

Mark A. Malangoni, MD — Chair, Department of Surgery; Surgeon-in-Chief at MetroHealth Medical Center; Professor, Case Western Reserve University School of Medicine, Cleveland, OH

Michael T. Watkins, MD — Associate Professor of Surgery, Harvard Medical School; Director, Vascular Surgery Research Laboratory, Boston, MA

Poster Moderators

Dennis B. Dove, MD — Trauma Medical Director, Northwest Texas Hospital; Chairman, Department of Surgery/Texas Tech University School of Medicine – Amarillo, TX

Debra H. Ford, MD — Associate Professor and Vice-Chairman, Surgery; Head, Section of Colon and Rectal Surgery; Director, General Surgery Residency Program, Howard University Hospital, Washington, DC

John J. Jasper, MD — Assistant Professor of Surgery, Department of Surgery, Case Western Reserve University, University Hospitals of Cleveland, Cleveland VA Medical Center, Cleveland, OH

Burnett (Beau) S. Kelly, Jr, MD — Assistant Professor of Surgery; Director, Programs for Pediatric Liver and Adult Living Donor Transplantation, Vanderbilt University Medical Center, Nashville, TN

Cristiani Quintini, MD — Director, Intestinal Transplant Program, Digestive Disease Institute, Cleveland Clinic, Cleveland, OH

Alan Siperstein, MD — Chair, Surgery Institute, Cleveland Clinic, Cleveland, OH

Charles J. Yowler, MD — Associate Professor of Surgery; Director, Division of Trauma, Critical Care, Burns and Metro Life Flight; Director, Comprehensive Burn Care Center, Case Western Reserve University, Cleveland, OH

Local Program Lecturers

Eren Berber, MD — Associate Staff, General Surgery, Cleveland Clinic

Charis Eng, MD, PhD — Department Chairman, Genomic Medicine Institute, Cleveland Clinic

Roy Greenberg, MD — Staff, Vascular Surgery, Cleveland Clinic

C. Martin Harris, MD — Chief Information Officer, Cleveland Clinic

Paul Matsen — Chief Marketing Officer, Cleveland Clinic

Marshall Strome, MD — Former Chairman, Otolaryngology, Cleveland Clinic Hospital

Lars Svensson, MD, PhD — Staff, Cardiothoracic Surgery, Cleveland Clinic

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Dr. Claude H. Organ, Jr.
Resident Award

Dr. Claude H. Organ, Jr. (1926-2005) was a world renowned academic surgeon, a giant in the field of surgery and medicine, and a major force in shaping and supporting the lives and careers of thousands. In 1989 Dr. Organ and several other black academic surgeons founded SBAS and held its first meeting at Duke University. Throughout his career he oversaw the training of dozens of surgeons, including several African-American women. His lifelong dedication to mentoring young surgeons and encouraging diversity in the field of surgery is represented in the annual Claude H. Organ, Jr. MD, FACS Resident's Award.

Delos “Toby” Cosgrove, MD, President & CEO, Cleveland Clinic, is proud to announce the Cleveland Clinic’s sponsorship commitment of this prestigious award. Starting in 2008 and continuing into the coming years, Cleveland Clinic's sponsorship of the Dr. Claude H. Organ, Jr. Resident Award will help insure the success of future generations of surgeons.

Abstracts

Oral Presentations

ORAL PRESENTION #1

A NOVEL SMALL MOLECULE, SMIL-1, INHIBITS THE BIOLOGICAL EFFECTS OF VEGFR-3 AND INDUCES APOPTOSIS IN HUMAN BREAST CANCER CELLS

DL Hunt, EV Kurenova, DA Ostrov, VM Golubovskaya, CA Garces, SN Hochwald, WG Cance. University of Florida-Gainesville College of Medicine

Purpose: Vascular endothelial growth factor receptor-3 (VEGFR-3, flt-4) is a receptor tyrosine kinase that is overexpressed in a variety of human carcinomas and is associated with increased lymphatic metastasis. Sparse data is available regarding the effects of VEGFR-3 on human tumor proliferation and survival. Our goal was to determine the biological effects of VEGFR-3 overexpression and to test a novel small molecule inhibitor of VEGFR-3 (SMIL-1) in human breast cancer cells.

Methods: Using the NCI small molecule database with the docking program DOCK5.1, 240,000 small molecules were positioned in a structural pocket important for VEGFR-3 protein interactions. The effects of selected small molecule, SMIL-1, were evaluated in breast cancer cell lines BT474 (high endogenous VEGFR-3) and MCF7 stably transfected to overexpress VEGFR-3 (MCF7-VEGFR-3). The biological effects of VEGFR-3 and its inhibition with SMIL-1 were examined by MTT assay (viability), BrdU incorporation (proliferation), Boyden chamber (motility), and flow cytometry (apoptosis).

Results: MCF7-VEGFR-3 cells overexpress highly phosphorylated VEGFR-3 and demonstrated a 160% increase in cell proliferation and a three-fold increase in motility and invasiveness compared to an empty-vector transfectant of MCF7 ($p<0.001$). In addition, MCF7-VEGFR-3 cells were 147% more viable following treatment with staurosporine (100 nm, 24 h), measured by MTT assay ($p<0.001$) and confirmed by biochemical analysis.

Treatment of BT474 cells with SMIL-1 caused a dose-dependent dephosphorylation of VEGFR-3. Inhibition of VEGFR-3 with SMIL-1 (10 μM, 24 h) resulted in a 35% reduction in proliferation and inhibition of motility in 95% of BT474 cells. SMIL-1 treatment (10 μM, 48 h) induced apoptosis in 65% of BT474 cells measured by flow cytometry and confirmed by biochemical analysis.

Conclusions: VEGFR-3 overexpression promotes proliferation, motility and survival of breast cancer cells. Specific small molecule targeting of VEGFR-3 inhibits these biological effects and induces breast cancer cell death. These results are the first to validate VEGFR-3 as a molecular target for cancer therapy.

NOTES

ORAL PRESENTION #2

CLINICAL UTILITY OF BREAST SPECIFIC GAMMA IMAGING FOR EVALUATING DISEASE EXTENT IN NEWLY DIAGNOSED BREAST CANCER PATIENTS

M Zhou, N Johnson, S Gruner, GW Ecklund, P Meunier, D Blanchard, G Green, M Glissmeyer, Kari Steinbock, S Bryn, T Delamelena. Breast Health Center Legacy, Good Samaritan Hospital, and Oregon Health & Science University at Portland

Background: Breast specific Gamma Imaging (BSGI) is a functional imaging modality utilizing a sestamibi tracer which may result in fewer false positive studies than Magnetic Resonance Imaging (MRI) and thereby improve clinical management of the newly diagnosed breast cancer patient.

Patient and Methods: We conducted a retrospective chart and imaging review from two community based breast health centers of newly diagnosed breast cancer patients in whom BSGI was performed as part of the imaging work up. A total of 138 consecutive patients with biopsy proven cancer were reviewed. Changes in clinical management based on BSGI findings were evaluated.

Results: Complete clinical data were available for 138 consecutive patients (48 IDC, 23 ILC, 34 DCIS, and 33 mixtures of IDC, ILC or DCIS). Sixteen (11.6%) had a positive BSGI study at a site remote from their known cancer or more extensive disease than detected from previous imaging. Ten (7.2%) were positive for a synchronous or more extensive malignancy in the same or contralateral breast. Four patients had benign pathologic findings on biopsy, two benign cysts on ultrasound follow-up (false positive rate 4.3%). Nineteen (13.8%) patients had a negative BSGI study (6 with no residual tumor, 13 with small residual tumor). Findings converted 3 patients to mastectomy for multifocal disease. One patient converted back to lumpectomy after BSGI demonstrated only known lesion over MRI which showed multifocal enhancement.

Conclusion: Breast specific gamma imaging (BSGI) detected additional or more extensive malignancy in the same or contralateral breast in 7.2% of newly diagnosed breast cancer patients. Only 4.3% incurred an additional site biopsy or follow-up ultrasound that was benign. BSGI provides accurate evaluation of remaining breast tissue in newly diagnosed breast cancer patients with few false positive readings. With further study, it may prove to be the optimum imaging for patients needing further tissue imaging in this setting.

NOTES

ORAL PRESENTION #3

COMBINATION THERAPY USING DR4 AND DR5 ANTIBODIES AND CHEMOTHERAPY INHIBITS PANCREATIC CANCER GROWTH IN AN ANIMAL MODEL

SM Smith, JP Arnoletti, DJ Buchsbaum, SM Vickers. University of Minnesota

Background: TRA-8 is a monoclonal TRAIL agonistic antibody with specificity for the DR5 receptor, while 2E12 is an anti-DR4 antibody. Binding of TRA-8 and 2E12 to their respective receptors leads to activation of the death receptor pathway and apoptosis. Both TRA-8 and 2E12 have pro-apoptotic activity both in vitro and in vivo against pancreatic cancer cells. We hypothesized that TRA-8/2E12 combination therapy could significantly enhance induction of apoptosis in vitro and increase the efficacy of chemotherapy in a pancreatic cancer animal model.

Methods: MIA-PaCa2 and S2VP10 pancreatic cancer cells were treated with TRA-8, 2E12, and gemcitabine or CPT-11; cell viability was assessed using ATP-lite bioluminescence assay. The cells were treated with gemcitabine for 48 hours and TRA-8 + 2E12 for 24 hours prior to analysis. For Western blot analysis, cells were incubated in 6 well plates for 24 hours prior to treatment. SCID mice underwent intrapancreatic injection with MIA-PaCa2 pancreatic cancer cells. The animals were randomized into the following treatment groups: 1) Untreated, 2) TRA-8 + CPT-11, 3) TRA-8+2E12 + CPT-11, 4) TRA-8 + CPT-11, and 5) 2E12 + CPT-11. The endpoint was overall survival.

Results: Treatment of Mia-PaCa2 and S2VP10 cells with TRA-8, 2E12, and chemotherapy (either gemcitabine or CPT-11) led to increased cytotoxicity when compared to cells treated with either drug alone or antibody alone. Proliferation of Mia-PaCa2 cells was inhibited by TRA-8 and 2E12 therapy, while S2VP10 cells were resistant to both. The combination of TRA-8 + 2E12 + gemcitabine resulted in 80% cytotoxicity in MIA-PaCa2 cells. The combination of TRA-8 + 2E12 + gemcitabine resulted in synergistic cytotoxicity in MIA-PaCa2 cells (80% cell death) and S2VP10 cells (99% cell death).

This treatment effect of the TRA-8/ 2E12/gemcitabine combination was associated with the induction of apoptosis in both cell lines, evidenced by increased cleavage of caspases 3, 8, and 9. In the animal model, the median survival of the untreated group was 46 ± 8.1 days. There were no deaths among animals treated with TRA-8 + 2E12 + CPT-11.

Conclusion: Treatment with combined anti-DR4 and anti-DR5 antibodies plus chemotherapy resulted in synergistic pancreatic cancer cell cytotoxicity. Combination therapy with TRA-8, 2E12 and chemotherapy was most effective at inhibiting pancreatic cancer growth in vivo. TRA-8 and 2E12 in combination may be useful adjuncts to chemotherapy in the treatment of pancreatic cancer.

NOTES

ORAL PRESENTION #4

COMBINED THERAPY WITH TRAIL AND TRIPTOLIDE INCREASES APOPTOSIS IN PANCREATIC CANCER CELLS

D Borja-Cacho, P Zwolak, R Chugh, R Talukdar, V Dudeja, Y Yokoyama, M Antonoff, A Saluja, S Vickers. University of Minnesota

Background: The chemotherapeutic agents used as a standard of care in pancreatic cancer have minimal impact in tumor biology. This resistance has increased interest in alternative drugs that target small molecules present only in cancer cells. For example, Death-receptors 4 and 5, transmembrane proteins that are members of the TNF-α superfamily, trigger apoptosis after they bind to the ligand known as Tumor Necrosis Factor-Related Apoptosis Inducing Ligand (TRAIL) or to synthetic monoclonal antibodies directed against these receptors. This therapy is undergoing clinical evaluation for non-Hodgkins lymphoma and some solid tumors; however, pancreatic cancer cells are also resistant to this form of treatment because anti-apoptotic proteins have an increased presence in pancreatic cancer cells. Our group has demonstrated that Heat Shock Protein 70 (HSP70) is one of these proteins overexpressed in pancreatic tumors. We have also described therapy with siRNA or with triptolide, a drug that decreases the expression of HSP70 and increases apoptosis in pancreatic cancer cells. We formulated the hypothesis that decreasing HSP70 expression with triptolide will increase the number of cells that die after TRAIL therapy.

Materials and Methods: We exposed five different pancreatic cancer cell lines (MiaPaCa-2, Panc-1, S2013, S2VP10 and ASPC-1) to different concentrations of TRAIL (0-40 ng/ml) with or without triptolide (50 ng/ml). We measured cell viability after 24 and 48 hours with CCK-8. To determine the effect of both drugs on apoptosis, we used flow cytometry to measure the levels of annexin V, an early marker of apoptosis; we also measured caspase-3 and caspase-9 activity with TRAIL (1.25 ng/ml), Triptolide (50 ng/ml) or both.

Results: Pancreatic cancer cell lines have different susceptibilities to triptolide and TRAIL. Triptolide decreased cell viability in most cell lines; only ASPC-1 cell line was resistant. This effect was dose- and time-dependent. TRAIL therapy decreased cell viability only in Mia-PaCa-2, while the rest of the cells were resistant to high doses of TRAIL. However, triptolide and TRAIL in combination decreased cell viability both in sensitive and resistant cell lines. This decrease in cell viability correlated with an increase in early apoptosis and both caspase-3 and 9 activity. The increase in the number of cell lines when both drugs were used was statistically significant when compared to each drug alone (Table 1).

Conclusions: Pancreatic cancer cells are resistant to most chemotherapeutic agents because they overexpress antiapoptotic proteins. In this study, we show that triptolide, a drug known to inhibit the expression of HSP70, increases the effect of TRAIL in all pancreatic cancer cell lines tested. It is important to note that this effect was seen in cell lines both sensitive and resistant to each drug alone. The decrease in cell viability was mediated through an increase in the apoptotic pathway.

Table 1. Cells undergoing apoptosis after triptolide, TRAIL or both.

	% of cells undergoing apoptosis				
Cell line	Control	Triptolide 50 nM	TRAIL 1.25 ng/ml	TRAIL 1.25 ng/m + Triptolide 50 nM	p value
Mia-PaCa2	7.75 ± 0.97%	16.61 ± 5.6%	11.23 ± 2.35%	39.64 ± 6.78% *	*p < .01
Panc-1	4.86 ± 1.05%	18.64 ± 4.99%	15.23 ± 2.80%	65.93 ± 10.84% *	*p < .001
S2013	11.50 ± 5.11%	19.44 ± 6.63%	29.61 ± 9.53%	55.60 ± 2.63% *	*p < .001
S2VP10	3.27 ± 1.89%	6.90 ± 1.93%	6.50 ± 1.39%	67.44 ± 3.34% *	*p < .0001
ASPC-1	8.66 ± 1.48%	8.85 ± 1.00%	8.14 ± 1.11%	29.30 ± 3.78% *	*p < .001

* When compared to control, triptolide and TRAIL alone

ORAL PRESENTION #5

USE OF A NOVEL APOPTOTIC PEPTIDE (NEFM1) TO EXPLOIT CXCR-4 RECEPTORS ON HUMAN BREAST CANCERS

HL Bumpers, MB Huang, W Harrington, M Powell, VC Bond.
Morehouse School of Medicine

Introduction: The chemokine receptor/ligand, CXCR4/SDF-1α, is critically important to angiogenesis and vascular remodeling, and has been shown to be involved in tumorigenesis, proliferation and metastasis of human carcinomas. We have shown that a novel peptide from HIV-1 Nef (NefM1) induces apoptosis through the CXCR4 receptor. We would like to exploit this as a cancer therapeutic agent.

Methods: Breast cancer cell lines, MDA-MB231 (231), MDAMB468 (468), MCF-7, DU4475, and HMEC were each evaluated for their response to NefM1. Apoptosis was assessed using TUNEL staining and caspase-3 activation. The presence of CXCR4 receptors on the tumor cells was determined using immunohistochemistry and PCR analyses. Xenografts derived from CXCR4+ cells were propagated in SCID mice and evaluated for the persistence of the receptor and the effects of NefM1 on growth and metastasis. The growing tumors underwent volumetric measurements weekly and comparisons were made between those treated with NefM1 biweekly, by i.p. injections, and those untreated. Human breast cancer xenografts generated from fresh surgical specimens were studied for the effects of NefM1 on their growth and metastasis in SCID mice.

Results: Breast cell lines that were positive for CXCR4 receptors all underwent apoptosis when treated with Nef, as did CXCR4-negative cells that were transfected with CXCR4. The corresponding xenografts derived from CXCR4+ 231 cells demonstrated high levels of the receptor. Breast xenografts derived from 231 cells demonstrated smaller primaries and significantly smaller metastatic tumors in the Nef treated group.

Conclusion: NefM1 causes apoptotic reduction in *in vitro* and *in vivo* growth of breast cancer cells and tumor xenografts, respectively. Metastatic lesions were smaller in the treated group.

NOTES

ORAL PRESENTION #6

A COMPARISON OF HER 2 POSITIVITY IN AFRICAN AMERICAN WOMEN EVALUATED BY IMMUNOHISTOCHEMISTRY (IHC) AND FISH (FLUORESCENE IN SITU HYBRIDIZATION)

AT Brown, L Thanasoulis, TG Frazier. Comprehensive Breast Center, Bryn Mawr Hospital

Objective: The number of Her2+ invasive breast tumors has been estimated between 20-30% in women with breast cancer. African American women have a higher incidence of triple negative breast tumors (ER/PR/HER 2) which may account for the more aggressive disease. To see if there is racial inequity, patients with invasive breast cancer and immunohistochemistry (IHC) staining 2+ or 3+ positive were sent for further evaluation by fluorescence in situ hybridization (FISH). This modality is used as the gold standard for HER2 positivity. The purpose of our study is to evaluate the incidence of HER2 positivity in African American women compared to other racial groups.

Methods: In our study, 425 consecutive patients with known invasive breast cancer were evaluated; of these patients, 41 patients were African American. Estrogen and progesterone receptor status positivity (ER+, PR+) were examined, as well as Her2 positivity (HER2+) by IHC and by FISH.

Results: Forty-one of 425 patients were African American (9.65%). Of the 41 patients, IHC+ = 10 (24.4%) & HER2/FISH+ = 1 (2.4%); this was out of 55 FISH + patients in the total patient group (1.8%). Other characteristics within the 41 patients demonstrated ER+ = 28 (68.3%) and PR+ = 22 (53.7%) within the African American patients. As compared to the other 384 patients, ER+ = 98 (25.5%), PR+ = 49 (12.8%), IHC+ = 55 (14.3%), and FISH+ = 55 (14.3%).

Conclusion: FISH is the gold standard for determining HER2 neu positivity. In our experience, <2% of African American patients were positive. HER2+ invasive breast cancer does not appear to be as prevalent in African American patients as compared to other racial groups. In general, African American patients are less likely to be HER2+, and perhaps this mechanism is a different pathway from ER/PR receptor status. Based on our data, African American patients will be lesser candidates for trastuzumab treatment. Therefore, more aggressive screening modalities and early detection of invasive breast cancer at its early inception is needed for these patients.

NOTES

ORAL PRESENTION #7

A STRICT PROPHYLATIC AND PREEMPTIVE ANTIVIRAL PROTOCOL IS HIGHLY EFFECTIVE IN PREVENTING CYTOMEGALOVIRUS AND EPSTEIN BARR VIRUS-RELATED COMPLICATIONS IN INTESTINAL TRANSPLANT RECIPIENTS

S Gordon Burroughs, RS Venick, L Candell, S McDiarmid, J Vargas, Y Esmailian, J Colangelo, A Zafar, D Winston, RW Busuttil, DG Farmer. David Geffen School of Medicine/UCLA

Background: The incidence of cytomegalovirus (CMV) and Epstein Barr Virus (EBV)-related complications after intestinal transplant (ITx) exceeds 10%, the highest of all solid organ transplants. We have employed strict prophylactic and preemptive protocols to reduce these complications. The aim of this study was to review the results of these protocols.

Prophylaxis Protocol: 100d IV ganciclovir followed by PO acyclovir post-ITx (Table 1).

Table 1. Prophylaxis Protocol

0-14 days post ITx	15-100 days post ITx	>100 days post ITx
Ganciclovir *10 mg/kg/day in 2 divided doses	Ganciclovir* 6 mg/kg/day single dose	Oral acyclovir 40 mg/kg/day in four divided doses
*50% Ganciclovir dose reduction for renal impairment		

Pre-emptive Protocol: Serum EBV and CMV DNA PCR testing is performed from weekly to monthly post-ITx with aggressive therapy for viremia (Table 2).

Table 2. Preemptive Protocol

Weekly to Monthly PCR Monitoring	CMV<200 copies/ml or EBV<600 copies/ml	CMV>200 copies/ml or EBV>600 copies /ml	Persistently positive CMV or EBVPCR
Preemptive Therapy	None, continue monitoring	Conversion to 100 d IV Ganciclovir	Addition of 300 mg/kg CMV immune globulin in 2 divided doses

Methods: A retrospective, IRB-approved review of all ITx recipients managed with these protocols from 1997 to 2007 was conducted. Viremia was defined as above. Tissue invasive infection was defined as biopsy proven evidence of viral infection. PTLD was diagnosed based on clinical, radiographic, and pathologic findings. Cox regression was used to determine the impact of peri-ITx factors on risk for viremia. Actuarial survival is reported. Median follow up was 21 months.

Results: The study included 55 patients undergoing 59 ITx — 58% male, 67% children, and 57% liver-intestinal recipients. Overall 1- and 2-year patient survival was 81% and 72%. CMV: 29 patients had 51 viremias, median 8.7 months post-ITx; 3 had tissue invasive disease, median 29.6 months post-ITx. EBV: 8 patients had 17 viremias, median 13.8 months post-ITx; 2 cases of EBV-related PTLD, median 3 months post-ITx. No graft or patient was directly lost due to CMV/EBV. Risk of viremia was associated with retransplantation (p=0.0001), but not D:R combination, graft transplanted, or immunotherapy.

Conclusion: Using the prophylaxis protocol, CMV and EBV disease is nearly eliminated early after ITx. Using the preemptive protocol, very few viremia episodes progress to tissue invasive disease, and patient and graft losses are minimized. Therefore, we strongly recommend ongoing prophylactic and pre-emptive therapies for the prevention and treatment of CMV/EBV viremia and disease after ITx.

NOTES

ORAL PRESENTION #8

OUTCOMES IN AFRICAN AMERICANS AFTER ORTHOTOPIC LIVER TRANSPLANTATION

N Logan, JC Hong, S Gordon Burroughs, RW Busuttil. David Geffen School of Medicine/UCLA

Background: With advances in immunotherapy, long-term outcomes after orthotopic liver transplantation (OLT) have significantly improved during the past two decades. Limited data exist, however, regarding the influence of modern immunosuppressive therapy on survival in African Americans (AA) after OLT.

Objective: We sought to compare the long-term outcomes in AA after OLT between two subsets of patients receiving the primary immunosuppressive agents cyclosporine (CyA) and tacrolimus (TAC).

Methods: IRB-approved single-center retrospective analysis of adults undergoing primary OLT between February 1984 and February 2007 was performed. Median follow up was 4 years. Of the 2728 OLT, 111 (4%) were in AA recipients. The primary immunosuppressive agent was CyA for 27 recipients (Era I) and TAC for 84 recipients (Era II). Outcomes were compared for AA and Caucasian recipients.

Results: Mean ages (years) were comparable: 42 (Era I) vs. 47 (Era II). In Era I, common indications for OLT were cryptogenic cirrhosis (25.9%), fulminant liver failure (FLL) (18.5%), and hepatitis C cirrhosis (HCV) (14.8%). In Era II, HCV (32%), FLL (21.4%) and ETOH/HCV (17%) were most common. Although not statistically significant, there was a trend towards better 10-year patient and graft survival rates during Era II compared to Era I (65% and 56% vs. 61% and 49%, respectively). In contrast, AA 10-year patient and graft survival were 64.0% and 48.0% (Era II) and 49.7% and 40.7% (Era I), respectively.

Conclusion: Results of this single-center analysis suggest that modern immunosuppression with TAC may be associated with improved outcomes after OLT; however, graft and patient survival in African American OLT recipients remains inferior to Caucasian recipients in both eras. Further studies will need to be performed to identify existing social and biological barriers to successful OLT in African American recipients.

NOTES

ORAL PRESENTION #9

T REGULATORY CELLS (TREGS) AND TRAMP C1 RADIATION EXPOSURE: SUPPRESSOR OR STIMULATOR OF THE IMMUNE SYSTEM?

EL Kachikwu, D Schaue, YP Liao, K Iwamoto, J Economou, H Bumpers, WH McBride. Morehouse School of Medicine and UCLA

Introduction: The extensive tumor cell death associated with radiation rarely translates into the generation of sustained anti-tumor immunity, thought to be due to an array of immune suppressive mechanisms aimed at control of autoimmunity. We studied the effects of $CD4^{+}CD25^{+}Foxp3^{+}$ Tregs on modulation of the immune response post-irradiation.

Methods: Female 6-8 week old C57Bl/6 mice were injected on the outer right thigh with $1x10^{5}$ TRAMPC1 tumor cells. Mice were positioned in a Lucite jig with lead shielding the body, except the right leg, which was irradiated at a dose rate of approximately 67 cGy/min or sham irradiated.

For *in vitro* analyses, lymphocytes were harvested from spleens and draining inguinal lymph nodes, depleted of red blood cells and re-suspended. Cells were stained for Treg markers and analyzed by flow cytometry. Magnetic sorting was used to isolate the $CD4^{+}CD25^{+}$ fraction of Tregs from spleens and tumors. Aliquots were analyzed by flow cytometry to assess purity, then co-cultured with DC2.4 cells at a ratio of 10^{4}:10^{3} in triplicates for three days. Wells were then pulsed with 1mCi ^{3}H-Thymidine for the last 18 hours. Cells were harvested onto glass microfibre filters and beta-emission counted.

For *in vivo* assessment, two groups of mice received intraperitoneal injections of 200 µl mAb or PBS, and +/- 10Gy irradiation to the tumor site on day 0. Tumors were measured using vernier calipers.

Results: Tumor growth *in vivo* was accompanied by a decline in the proportion of splenic Tregs. Local irradiation resulted in effects outside the radiation field, with increase in splenic Tregs, which exhibited stronger immunosuppressive phenotype.

Conclusion: Radiation treatment of tumors alone resulted in increased Treg proliferation, activity and trafficking, and thus might exacerbate tumor immune evasion. Systemic elimination of Tregs greatly enhanced tumor regression following local irradiation; which could be of great clinical importance.

NOTES

ORAL PRESENTION #10

THE EFFECT OF A NOVEL ALPHA-FETOPROTEIN-DERIVED PEPTIDE AND TAMOXIFEN ON PROLIFERATION OF CULTURED HUMAN GLIOBLASTOMA CELLS

FB Mesfin, AJ Popp, JA Bennett, TT Andersen. Albany Medical College

Background: Glioblastomas are the most frequent tumors of the central nervous system (CNS). Patients with a diagnosis of glioblastomas have poor prognosis despite advances in cancer treatment and surgical techniques. Consequently, new therapeutic agents are in demand. At high doses, Tamoxifen has some benefit for patients with glioblastomas. The use of Tamoxifen, however, is limited by its toxicity at higher dose. Recently, we have developed a novel anti-cancer peptide (AFPep). AFPep is a cyclo (EKTOVNOGN) derived from alpha-fetoprotein and has been shown to interfere with the activation of c-kit in breast cancer cell line. We hypothesized that AFPep inhibits the growth of human glioblastoma and prevents the transformation of Neural precursor cells (NPC) to malignant glioblastoma through its inhibition of the tyrosine kinase growth factor receptor, c-kit. Here, the effect of a novel anti-estrogen, alpha-fetoprotein derived peptide, AFPep, on the inhibition of U87 human glioblastoma cell proliferation was evaluated and compared with activity of tamoxifen.

Methods: The U87 human glioblastoma cell line was obtained from ATCC. Cells were cultured as a monolayer in Modified Eagle's Medium (MEM) with 10% fetal bovine serum, 15 mmol/L L-gutamine, 100 units/ml penicillin, and 100 µg/ml streptomycin in a humidified 5% CO_2 atmosphere at 37°C. Cells were released from monolayer by trypsinization using 0.25% trypsin in 0.25% EDTA. To examine the effect of AFPep and tamoxifen on U87 cell proliferation, cells were seeded into 6-well plastic tissue culture plates at a density of 1 x 10^5 cells/well in 4 ml of medium. Cultures were allowed to stabilize for 24 hours before being exposed to the various treatments.

Various concentrations of AFPep and tamoxifen were added with medium changes every other day for 5 days. Cultures were then fixed with 10% acetic acid and stained with crystal violet solution. Unbound crystal violet was removed with multiple washes of the wells with tap water. Cell-bound rhodamine was extracted using acetic acid and measured by absorbance at 515 nm and plotted against drug concentration. Wells were set up in triplicate for each group. Mean absorbence plus/minus the standard error was calculated for each group.

Results: The results indicated that tamoxifen inhibits the proliferation of cultured human glioblastoma cells in dose-dependent manner with IC50 of 10 µM. AFPep also has dose-dependent inhibitory activity with the IC50 < 0.01 µM. Studies to establish the effect of AFPep on NPC transformation are in progress.

Conclusion: These data demonstrated that AFPep has a significant inhibitory effect in the proliferation of cultured U87 human glioblastoma cells. Like tamoxifen, the inhibitory effect of AFPep is dose-dependent. Unlike tamoxifen, however, AFPep is a peptide derived from a natural product, alpha-fetoprotein. As such, AFPep is well tolerated and may be used to treat malignant glioblastomas with minimal or no adverse side effects.

NOTES

ORAL PRESENTION #11

CAN MID-LEVEL PROVIDERS HELP ADDRESS THE GAP IN SURGICAL DELIVERY IN AFRICA? PERSPECTIVES FROM TWO ANGOLAN HOSPITALS

R Riviello, SO Rogers. Center for Surgery and Public Health, Brigham and Women's Hospital

Background: Surgical services delivery in sub-Saharan Africa is both grossly inadequate and grossly undocumented. Approximately 90% of the need remains unmet, and calculations of global surgical disease burden are hindered by a "near total lack of pertinent data." All estimates of surgical disability-adjusted life years (DALYs) in Africa are based on one study of a 90-bed hospital in Sierra Leone in 2003. It is unknown how many surgical providers are currently working in Africa. Also unmeasured is the extent and the societal costs of the so-called "Brain Drain" of surgeons from African countries; some authorities estimate only a 10% retention rate of national surgeons. Amidst this paucity of data, evidence exists that non-physician mid-level providers (MLPs) are important in addressing unmet surgical need. In rural Tanzania, Malawi, and Mozambique, MLPs perform an estimated 90% of operations.

Hypothesis: We hypothesize that appropriately trained MLPs can provide much needed surgical services at the district hospital level within a scope of practice that addresses the priorities outlined by the WHO Global Initiative for Essential and Emergency Surgical Care (GIEESC).

Methods: Ten months (October 2006 through August 2007) of surgical case-logs from two Angolan hospitals are reviewed for demographic data, case types, surgical specialties, anesthesia, and provider training. One hospital is an urban 40-bed referral center that is primarily physician-driven in Lubango, Angola. The other is a rural 180-bed district hospital with no on-site physician that is MLP-driven in Kalukembe, Angola.

Results: At the urban hospital in Lubango, 1295 operations were performed: 85% (1101) non-acute surgical, 15% (194) acute surgical; 8% (104) trauma, and 1% (2) emergency obstetric. The most common specialties were: general surgery (36%), urology (17%), orthopedics (12%), ob/gyn (9%), endoscopy (8%), and burn/plastic (8%); 89% (1158) were performed by surgeons while 11% (137) were performed by MLPs [*Figure 1*]. At the nurse-driven hospital in Kalukembe, 812 operations were performed: 63% (512) non-acute surgical, 37% (300) acute surgical; 43% (349) trauma, and 18% (146) emergency obstetric. The most common specialties were: general surgery (36%), orthopedics (30%), and ob/gyn (20%); 20% (162) were performed by surgeons while 80% (650) were performed by MLPs [*Figure 2*].

Conclusions: This study presents baseline surgical output data from two sites in Angola. It provides the only published Angolan surgical epidemiologic data available, may improve estimates of global surgical disease burden, and lays the groundwork for analyses of MLP surgical training in sub-Saharan Africa. It is evident that MLPs at this district hospital are providing a substantial surgical service, with a much more limited scope of practice in comparison with their urban, physician counterparts. This scope of practice is in line with the WHO GIEESC priorities. Future studies will need to focus on operative outcomes for assessment of the quality of care provided by MLPs in this context.

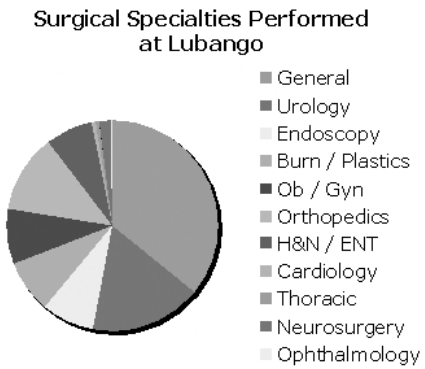

Figure 1

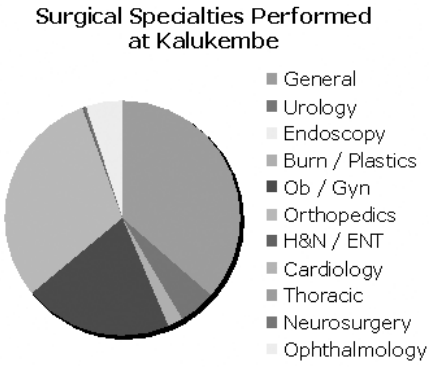

Figure 2

ORAL PRESENTION #12

CHARLSON COMORBIDITY INDEX IS A PREDICTOR OF INTENSIVE CARE UNIT LENGTH OF STAY AND MORTALITY IN THE ELDERLY TRAUMA PATIENT

A Charles, S Schiro, R Stafford. University of North Carolina at Chapel Hill

Background: Comorbid disease influences patient of outcomes, particularly in the elderly critically ill population. Charlson's Comorbidity Index (CCI) has been used to predict mortality in critically ill patients. However, there is little data on its use in surgical patients. While injury severity score (ISS) has been validated as a predictor of mortality in trauma patients, CCI has not been validated in the critically ill elderly trauma patient. We hypothesize that CCI is an independent predictor of intensive care unit (ICU) length of stay and mortality in the elderly trauma patient.

Patients and Methods: A six-year retrospective study of trauma patients using the North Carolina trauma registry from 2000-2005 was conducted after institutional review board approval. All patients 50 years and above were included in the study. Data collected included demographics, mechanism of injury, ISS, ICU length of stay and CCI. Multivariate logistic regression and linear logistic regression was used to model outcome (Lived/Died) and ICU length of stay, respectively.

Results: 21,104 patients met inclusion criteria of which 7.93% (n=1674) patients died; 45.47% (n=9595) were male, 86.10% (n=18,170) were white. The mean age of the patient population was 71 years (range 50-107). The mean ISS was 10.64. CCI is an independent predictor of mortality, with an Odds Ratio of 1.069 ($p<0.0002$, CI 1.033-1.107). Using a linear regression analysis, CCI independently predicted ICU length of stay ($p<0.001$, CI 0.088-0.195). The average ICU length of stay was 6.84 days. CCI was stratified into 3 groups, 1-3, 4-6 and >7. Increasing CCI was significantly associated with increasing ICU length of stay with 7.2 ($p<0.0001$), 8.16 ($p<0.0001$) and 11.5 ($p<0.0005$) days, respectively.

Conclusions: CCI is an independent predictor of ICU length of stay and mortality in the critically ill elderly trauma patient. CCI is a valuable adjunct to ISS in predicting mortality in the elderly trauma patient, and its use may help guide clinical management of the elderly trauma patient.

NOTES

ORAL PRESENTION #13

EARLY FACTORS ASSOCIATED WITH THE NEED FOR MASSIVE TRANSFUSION

K Huezo, J Johannigman, T Pritts, K Davis, P Muskat. University of Cincinnati

Background: Massive transfusion is defined as the need for 10 or more units of packed red blood cells (PRBC) within 24 hours of admission. An estimated 1-2% of admitted trauma patients will require a massive transfusion, with an associated mortality between 30-40%. Even though early and accurate identification of patients needing massive transfusion is necessary to ensure appropriate and expeditious resuscitation, few studies have attempted to identify parameters that predict need for massive transfusion.

Objective: The purpose of this study is to identify early clinical indicators associated with the need for massive transfusion.

Methods: This is a retrospective chart review of trauma patients receiving at least one unit of PRBC within 24 hours of admission to our Level I trauma center from July 1, 2005 to June 30, 2006. Patients were excluded if they were less than 16 years old, pregnant, or had received 5 or more minutes of CPR either prior to or upon ED arrival. Patients were divided into two groups based on number of PRBC units transfused in the first 24 hours of admission, with massive transfusion defined as 10 or more units of PRBC. Massively and non-massively transfused patients were compared with respect to their demographics and initial ED vital signs and laboratory values. Descriptive statistics were obtained. Continuous variables were compared with t-test; categorical variables were compared utilizing Chi square test. A p value of < 0.05 was considered significant.

Results: A total of 2,460 patients were identified in our trauma registry during the study period, with 323 receiving blood during their hospitalization. Of these, 47 (1.9%) received a massive transfusion.

Patients in the massively transfused group were more likely to have suffered a penetrating injury (55% vs 35%, $p<0.05$) and had a lower GCS score (mean GCS 10.6 ± 0.8 vs 12.2 ± 0.4, $p<0.05$). Systolic blood pressure was on average 10 points lower in the massively transfused group (102 ± 6 vs 115 ± 3, $p<0.05$). Mean hemoglobin and platelet values in the massively transfused group were less than in the non-massively transfused group (11.3 ± 0.4 vs 14.6 ± 1.7, $p = 0.06$) and (209 ± 11 vs 270 ± 9, $p<0.05$). Coagulation studies were significantly prolonged (PTT 46.7 ± 5.8 vs 30.9 ± 1.7, $p<0.05$) and base deficit was significantly higher (13 ± 1.3 vs 5 ± 0.6, $p<0.05$) in the massively transfused.

Conclusions: Massively transfused patients presented with statistically significant differences in systolic blood pressure (SBP), platelet count (PLT), base deficit (BD) and coagulation parameters (PTT). Our data suggest $BD \geq 6$, $PLT \leq 200$, $SBP \leq 105$, and $PTT \geq 45$ may be indicators of need for massive transfusion. Additional studies are necessary to prospectively analyze the utility of these parameters in predicting the need for massive transfusion.

NOTES

ORAL PRESENTION #14

IS THERE A BENEFIT TO MULTI-DISCIPLINARY ROUNDS IN AN "OPEN" TRAUMA ICU REGARDING VENTILATOR-ASSOCIATED PNEUMONIA?

V Johnson, A Mangram, C Mitchell, M Lorenzo, D Howard, E Dunn. Methodist Hospitals of Dallas

Introduction: Multi-disciplinary rounds (MDR's) have been instituted as a team approach to patient care in our hospital since June 2005. Prior to June 2005, all care in our intensive care units, which are open ICU's, was provided by individual, private practitioners. Our daily MDR's are led by a surgical intensivist and include a clinical pharmacist, a surgical resident, the patient's nurse, the case manager, a Chaplain, a nutritionist, and the respiratory therapist. The goal of this team approach is to co-operatively ensure the utilization of "best practices." One of the goals of "best practices" is reducing ventilator associated pneumonia (VAP). The purpose of our study was to examine the effect of MDR's on VAP in trauma patients in our open ICU's.

Methods: We performed a retrospective review of VAP over a four-year period divided into two groups. Group 1 included patients from June 2003 to May 2005 prior to the implementation of MDR's, and Group 2 included patients after the institution of MDR's from June 2005 to May 2007. Variables examined included blunt versus penetrating trauma, mean injury severity score (ISS), and mean abbreviated injury severity (AIS) score for chest and for head and neck. Using Chi squared statistical analysis, the number of pneumonia infections per 1000 ventilator days was calculated.

Results: In Group 1 there were 83 VAP's during 2414 total ventilator days. The ratio of blunt to penetrating trauma was 92.9:7.1, and the mean ISS was 30.0 with mean AIS for chest of 3.0 and mean AIS for head and neck of 4.3. In Group 2 there were 49 VAP's during 2094 total ventilator days. The ratio of blunt to penetrating trauma in this group was 93.9:6.1, and the mean ISS was 30.7 with a mean chest AIS of 3.1, and mean head and neck AIS of 4.5. The ratio of VAP's per 1000 ventilator days decreased from 34.4 in Group 1 to 23.4 in Group 2 after the institution of MDR's ($p=0.04$).

Conclusion: When comparing trauma patients in our open ICU with similar mean ISS and mean AIS for chest and for head and neck, implementing MDR's significantly decreased our incidence of VAP. This study demonstrates the improvement in ventilator care by a surgical care team making daily rounds in lieu of individual practitioners.

NOTES

ORAL PRESENTION #15

SEVERE TRAUMATIC BRAIN INJURY: IS THERE A GENDER DIFFERENCE IN MORTALITY?

C Berry, A Salim, M Ottochian, M Wilson, D Margulies. Cedars Sinai Medical Center

Background: Emerging evidence suggests that male and female nervous systems respond differently to nontraumatic head injury. Data regarding gender differences and traumatic brain injury (TBI) is limited. The objective of this study is to examine outcomes between genders after TBI.

Patients and Methods: A retrospective database of all adult trauma patients at an academic, county-based level I trauma center, admitted between 01/1998 and 12/2005, were reviewed. Demographic and clinical data were recorded. Isolated severe TBI was defined as head AIS>3 with AIS<3 for other anatomical regions. Stepwise logistic regression was utilized to identify independent predictors of mortality. The population was further stratified into age subgroups (<14 years, 14-44 years, 45-54 years, and >55 years).

Results: During the 8-year period, 33,803 patients (21.7% female and 78.3% male) were admitted. Overall mortality was lower for females (5.3% vs. 6.4%, p=0.001). After adjusting for significant confounding factors, however, female gender was independently associated with mortality (adjusted OR=1.33, 95% CI: 1.09-1.62). Among 1,807 patients with isolated severe TBI, mortality was higher for females (43.2% vs. 36.2%, p<0.01), adjusted OR=1.4 (95% CI: 1.1-1.9, p<0.05). After stratifying the isolated TBI population by age subgroups, only females aged >55 had a significant difference in mortality (OR=1.71, 95% CI: 1.11-2.62, p=0.02).

Conclusions: Female gender is independently associated with higher mortality in isolated severe TBI. Elderly (age >55) females have a significantly higher mortality risk. This increased mortality of post-menopausal females following isolated TBI may suggest a hormonal influence and warrants further investigation.

NOTES

ORAL PRESENTION #16

APOLIPOPROTEIN E$^{-/-}$ MICE HAVE DELAYED SKELETAL MUSCLE HEALING FOLLOWING HIND LIMB ISCHEMIA REPERFUSION

J Kang, H Albadawi, VI Patel, TA Abbruzzese, JH Yoo, WG Austen Jr, MT Watkins. Massachusetts General Hospital and Harvard Medical School

Introduction: Classic studies of limb ischemia reperfusion injury have been performed using young healthy mice. However, patients with peripheral vascular disease are older and exhibit metabolic derangements such as hypercholesterolemia and diabetes. Mice with genetic deletion of apolipoprotein E (ApoE$^{-/-}$) have been used as a model for studying the effects of hypercholesterolemia in various experimental scenarios such as intimal hyperplasia and angiogenesis.

Objective: These experiments were designed to evaluate the inflammatory response and changes in skeletal muscle morphology during the acute and chronic phases of limb ischemia reperfusion injury in aged ApoE$^{-/-}$ mice.

Methods: Age-matched ApoE$^{-/-}$ and wild type (Wt) mice were both subjected to 1.5 hours of unilateral hind limb ischemia followed by 1, 7, or 14 days of reperfusion (DR). Histologic analysis of skeletal muscle fiber injury was assessed at 1DR and morphologic evidence of muscular fiber maturation was assessed at 14DR. Levels of MyoD and myogenin, markers of skeletal muscle differentiation, were assessed at 7 and 14DR using Western blots. Markers of inflammation, including myeloperoxidase (MPO), macrophage inflammatory protein-2 (MIP-2), monocyte chemotactic protein-1 (MCP-1), and osteopontin (OPN), were assayed using ELISA at 1, 7, and 14DR. After 1DR, tissue Adenosine 5'-triphosphate (ATP) levels were measured to assess metabolic activity of the injured limbs. Unpaired t-test and Mann-Whitney test were used for comparisons.

Results: Histologic evaluation of skeletal muscle after 1DR showed no difference in the degree of injury between Wt and ApoE$^{-/-}$ mice. However, at 14DR, ApoE$^{-/-}$ mice had higher percentage of immature muscle fibers compared to Wt mice. Myogenin level was lower in the ApoE$^{-/-}$ mice at 7DR. Injured skeletal muscle of ApoE$^{-/-}$ mice had lower levels of MPO than Wt mice at 7 DR and higher levels of MCP-1 at 14DR. There was no difference in the levels of tissue ATP, MIP-2, or OPN at all experimental intervals.

Conclusions: Although there was no difference between the injured muscle of Wt and ApoE$^{-/-}$ mice during the acute phase of reperfusion, ApoE$^{-/-}$ mice showed delay in skeletal muscle healing during the chronic phase of reperfusion. This lag in muscle regeneration was associated with lower levels of myogenin at 7DR and increased level of MCP-1 at 14DR in the ApoE$^{-/-}$ mice. The delay in skeletal muscle healing in the ApoE$^{-/-}$ mice may have broader implications for poor tissue healing and functional recovery in elderly patients who have vascular risk factors such as hypercholesterolemia.

NOTES

ORAL PRESENTION #17

CARDIAC SPECIFIC STAT-3 DELETION PREVENTS MYOCARDIAL DECOMPENSATION FOLLOWING PRESSURE-OVERLOAD

MD Goodman, SE Koch, LA Friend, KL Butler. University of Cincinnati

Purpose: Myocardial hypertrophy is an adaptive response to pressure overload induced by transverse aortic constriction. Initially, hypertrophy allows the heart to maintain normal cardiac output despite mechanical loading. However, with unrelieved pressure overload, ventricular hypertrophy progresses to cardiac dilatation, decreased contractile function and irreversible cardiac failure. Activation of the JAK-STAT pathway via phosphorylation of STAT-3 can induce the hypertrophic response. We hypothesized that STAT-3 deletion (KO) would protect myocardial performance and remodeling following a pressure-overload stimulus in mice.

Methods: Male cardiomyocyte-specific STAT-3 KO mice were subjected to transverse aortic constriction (TAC). At 3 and 6 weeks following surgery, 2D echocardiographic evaluation (% fractional shortening) was performed followed by assessment of heart weight/body weight ratios and Langendorff perfusion to determine myocardial performance (dP/dt_{max}, mmHg/s). Separate groups of hearts were analyzed by Western immunoblotting for expression of pSTAT-5, pSTAT-6 and the pro-apoptotic protein Bax. Age-matched wild-type (WT) non-operated animals served as controls.

Results: Echocardiography revealed preserved performance in KO hearts at 3 weeks (45±10% vs. 21±6%, KO vs. WT) and 6 weeks (33±4% vs. 19±3%, KO vs. WT) following TAC compared to WT. After 3 or 6 weeks of TAC, hearts from WT mice had significantly ($P<0.001$) increased heart weight/body weight ratios compared to WT/no-TAC, KO/no-TAC and KO/TAC hearts (Figure 1). Ex vivo perfusion showed preserved dP/dt_{max} in WT TAC at 3 weeks but significantly ($*P<0.05$) reduced function 6 weeks after TAC (Figure 2).

Hearts from KO animals, however, had preserved myocardial performance 6 weeks after TAC compared to WT. pSTAT-5 and pSTAT-6 was increased in KO TAC hearts compared to WT. Bax expression was increased in all TAC hearts compared to sham.

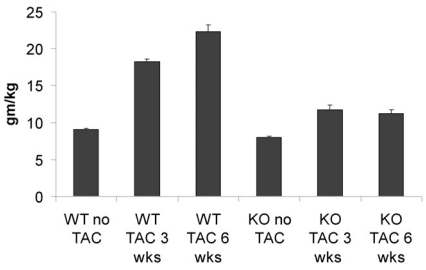

Figure 1

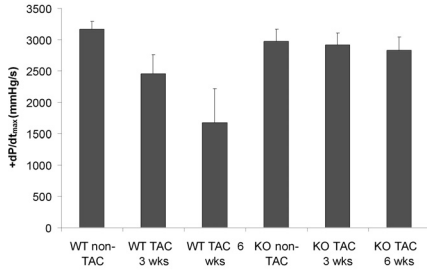

Figure 2

Conclusions: Cardiac specific STAT-3 deletion preserves myocardial performance following pressure-overload in mice. Activation of STAT-5 and STAT-6 subtypes may account for preserved cardiac performance following pressure-overload in STAT-3 KO animals.

NOTES

ORAL PRESENTION #18

ESTROGEN RECEPTORS ARE INVOLVED IN THE 17-BETA ESTRADIOL MEDIATED PROTECTION AGAINST MICROVASCULAR ENDOTHELIAL CELL HYPERPERMEABILITY

R Corprew, B Tharakan, JG Whaley, FA Hunter, EW Childs.
Texas A&M Health Science Center College of Medicine and Scott & White Memorial Hospital

Background: Recent studies from our laboratory demonstrated reactive oxygen species (ROS), and mitochondrial 'intrinsic' apoptotic signaling as mediators of vascular hyperpermeability following hemorrhagic shock. There is increasing evidence that females are more resistant to traumatic injury and hemorrhagic shock than males, and estrogens may provide protection against ischemia reperfusion injury. Recently, 17-beta estradiol, the major estrogen, has been shown to possess antioxidant and anti-apoptotic properties, and estrogen receptors have been localized in mitochondria of the cell. However, the effect of 17-beta estradiol on vascular hyperpermeability or its participation at the 'intrinsic' apoptotic signaling is not clearly known. We hypothesized that 17-beta estradiol would attenuate microvascular endothelial cell hyperpermeability by acting at the mitochondrial estrogen receptors. The objective of this study was to determine the involvement of estrogen receptors in hyperpermeability in rat lung microvascular endothelial cell (RLMEC) monolayers.

Methods: RLMEC grown as monolayers on Transwell membranes were transfected with BAK (BH3) peptide (5 μg/ml) with or without estradiol (1 or 10 nM) pre-treatment. Estrogen receptor antagonist IC 182780 was used to determine the involvement of estradiol receptors in hyperpermeability. The change in permeability was determined by FITC albumin-flux across the monolayer, measured as change in fluorescence intensity. RLMEC grown on chamber slides were transfected with BAK (BH3) peptide, and mitochondrial ROS formation was determined using dihydrorhodamine 123.

Results: In RLMEC, BAK (BH3) induced significant monolayer hyperpermeability ($p<0.05$). Estradiol pre-treatment (10 nM) attenuated BAK-induced monolayer hyperpermeability ($p<0.05$). The estrogen receptor antagonist IC 182780 inhibited the protective effect of estradiol. BAK (BH3) peptide transfection induced significant increase in intracellular ROS formation, which was inhibited by estradiol pre-treatment ($p<0.05$).

Conclusions: These findings demonstrate that estradiol, an antioxidant with anti-apoptotic properties, attenuates pro-apoptotic BAK-induced monolayer hyperpermeability. Inhibition of the mitochondrial estrogen receptors reversed the protective effects of estradiol, suggesting that the mitochondrial apoptotic signaling pathway is involved in the regulation of hyperpermeability.

NOTES

ORAL PRESENTION #19

IL-4 AND IL-13-INDUCED PROTECTION FROM COMPLEMENT-MEDIATED NECROSIS IN VASCULAR ENDOTHELIAL CELLS REQUIRES ACTIVATION OF AKT, SREBP, AND LIPID BIOSYTHESIS

S Black, B Benson, A Dalmasso. University of Minnesota

Objective: We have reported previously on the induction of significant protection from complement mediated cytotoxicity in vascular endothelial cells (ECs) treated with the Th2 cytokines IL-4 and IL-13 in vitro (J. Immunol. 2005, 175:1903) and in an artery perfusion model ex-vivo (J. Immunol. 2006, 177:7355). Now we delineate and further characterize the mechanisms of protection from complement-mediated necrosis induced by IL-4 and IL-13.

Methods: Early passage primary cultures of porcine aortic ECs were incubated with 10 ng/ml recombinant IL-4 or IL-13 for 48 hrs. Pharmacological inhibitors were used against the pathways that may participate in signaling elicited by IL-4 and IL-13: ERK/MEK, PI3K/Akt, p38/MAPK, NF-κB, and JAK/STAT. ECs were incubated for 2 hrs at 37°C with human serum, which was used as a source of complement, and cytotoxicity was then determined by neutral red vital dye uptake. Deposition of complement C3 and C9 on the plasma membrane was assessed by flow cytometry and ELISA. Intracellular lipid content was measured by proton nuclear magnetic resonance spectroscopy (pNMR) in cells treated with IL-4 or medium. Sterol receptor element binding protein (SREBP) activation was assessed by Western blot. SREBP and fatty acid synthase (FAS) activation were inhibited in IL-4 treated cells using 25 OH-cholesterol and either C75 or cerulenin, respectively.

Results: Inhibition of PI3K and Akt with wortmannin and Akt inhibitor XI prevented the induction of protection by IL-4 in a dose dependent manner. In contrast, JAK/STAT, ERK/MEK, NF-κB, and p38/MAPK inhibition had no effect on IL-4 or IL-13 induction of protection from complement.

Flow cytometry of ECs treated with IL-4 or medium alone revealed no difference in deposition of complement C3 or C9 (membrane attack complex). Complement regulatory proteins DAF, MCP, and CD59 were not upregulated by IL-4 treatment. pNMR demonstrated significant intracellular lipid synthesis in cells treated with IL-4. Western blot analysis further showed both phosphorylation of Akt and cleavage (activation) of the lipogenic transcription factor SREBP-1 but not SREBP-2 in cells treated with IL-4. Furthermore, inhibition of SREBP by 25 OH-cholesterol prevented the development of protection in IL-4 and IL-13-treated cells. Finally, FAS inhibition by C75 and cerulenin also prevented the induction of protection by IL-4.

Conclusions: In these studies we characterized the mechanisms of IL-4 and IL-13 induction of protection from complement in vascular ECs. We found that IL-4 and IL-13 protection occurs through PI3K/Akt signaling, with the corresponding activation of the lipogenic transcription factor SREBP-1. The activation of SREBP-1 leads to an increase in intracellular lipids. IL-4 and IL-13-induced lipid biosynthesis is thus critical for development of protection against complement mediated cytotoxicity. Delineation of this cytoprotective pathway may prove to be useful in developing approaches for preventing and treating and vascular injury associated with complement in disease processes such as ischemia-reperfusion, transplant graft rejection, and atherosclerosis.

NOTES

ORAL PRESENTION #20

OUTCOMES OF TIBIAL ARTERY ANGIOPLASTY FOR LIMB SALVAGE

G Tefera, T Bayer. University of Wisconsin School of Medicine and Public Health

Background: Advances in catheter and guide wire technology have led to renewed interest in infra-inguinal limb-salvage angioplasty. Femoral to tibial artery bypass is considered the gold standard; however, it carries a relatively high morbidity and mortality. The objective of this study is to evaluate long-term outcome of tibial artery angioplasty and assess the overall long-term survival of this patient population.

Patients and Methods: Eighty-five patients treated with tibial artery angioplasty for limb salvage from January 2001 to June 2004 were included in the study. All patients had clinical evidence of chronic critical lower extremity ischemia.

Results: There were 56 males and the average age was 67.3 years. Seventy-five percent of the patients were diabetic while renal dysfunction was present 45% of the time. Fourteen (16%) had a previous contralateral limb amputation and 21% of the patients had solid organ transplant. Most patients (50) presented with non-healing foot ulcers while 10 suffered from rest pain and 25 presented with gangrenous toes. On intent to treat basis, technical procedural success was achieved 80% of the time. Limb salvage rate was 75% at one year. During long-term follow up, 23 (27%) patients required a major amputation. Most (80%) of the amputations occurred during the first year. The presence of renal dysfunction and transplantation were associated with increased risk of amputation. 30-day mortality was 2.3%. Two patients died of myocardial infarction and two other patients had procedure related morbidity (hematoma and thrombosis). The overall 1, 3, and 5 year survival rates were 75, 50 and 26%, respectively.

Conclusions: Tibial artery angioplasty for limb salvage is an acceptable and effective treatment option with minimal morbidity and mortality when compared to historical distal bypass surgery results. In this group of patients with limited life expectancy, we recommend that limb salvage angioplasty be offered first prior to bypass surgery.

NOTES

Notes

Abstracts

Poster Presentations

POSTER #1

EARLY RESULTS OF PHARMACO-MECHANICAL THROMBECTOMY FOR DEEP VENOUS THROMBOSIS IN POST-PARTUM PATIENTS

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Background: Deep venous thrombosis (DVT) in the postpartum patient is a rare occurrence. The relative risk among postpartum women is 4.29 and the overall incidence of DVT (absolute risk) is 199.7/100,000 women-years. The utilization of thrombolytic therapy has been shown to be effective in reducing the sequela of post-thrombotic syndrome. However, during the postpartum period it remains a contentious issue due to concerns regarding uterine bleeding and insufficient prospective studies. Here we report our experience of pharmacomechanical thrombectomy followed by thrombolytic therapy in postpartum patients.

Methods: Retrospective review of our database found three postpartum patients who were evaluated for DVT. Each patient was diagnosed with DVT of less than 3 weeks duration within 30 days of childbirth. Treatment with pharmacomechanical thrombectomy (Angiojet, Possis Medical) and infusion of tPA (Alteplase, Genetech) concentration of 0.1 mg/cc was utilized. Post pharmacomechanical thrombectomy patients were treated with overnight thrombolytic therapy using either Fountain (Merit Medical, South Jordan, Utah) or EKOS Lysus (EKOS, Botthel, Washington) infusion catheters with tPA at a rate of 1 mg/hr. Venography was repeated within 20 hours of treatment and patients were angioplastied (+/– stenting) if stenosis was apparent. If there was still evidence of thrombus, lytic therapy was continued for another 12-20 hours. Treatment was considered successful if there was clinical improvement of symptoms and completion venography demonstrated no evidence of significant thrombus and resolution of stenosis. Post procedure patients were placed on coumadin and fitted with graduated compression stockings. Follow-up exams included office visits, ultrasound examinations, and a health assessment questionnaire.

Results: Three women with postpartum DVT (5 lower extremities (LE): 2 caval to popliteal, 3 iliofemoral) were treated with a combination of pharmacomechanical thrombectomy and thrombolytic infusion. Initial technical success and complete lysis was 100%. One patient (one LE) returned with partial thrombosis of the femoral-popliteal segment. Four limbs required placement of stents (80%) for areas of stenosis. There were no complications associated with the procedure. Follow-up examinations (1-12 months, mean of 7.6 months) revealed no clinical post thrombotic changes. Evaluation with ultrasound demonstrated no reflux. Health assessment questionnaire demonstrated no significant change in the health quality.

Conclusion: Our experience with utilization of pharmacomechanical thrombectomy during postpartum demonstrates it to be a viable option with minimal morbidity associated with its implementation. It may preserve valve function, prevent chronic venous insufficiency and maintain overall quality of life.

NOTES

POSTER #2

HEPARIN-INDUCED THROMBOCYTOPENIA: WHO GETS HIT?

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Background: Heparin-induced thrombocytopenia (HIT) is increasingly recognized as a potentially life-threatening complication of heparin therapy. It is classically described as a decreased platelet count of ≥50% from baseline, typically occurring 5-10 days after initiation of heparin therapy. Argatroban, a reversible inhibitor of thrombin, is the drug of choice for suspected or diagnosed HIT. The purpose of this study was to characterize the incidence of HIT in a large tertiary referral hospital.

Methods: A retrospective review of the medical records of all patients 16 years of age admitted to the University Hospital at the University of Cincinnati from January 2003 to December 2006 and started on argatroban therapy was performed. Data collected included age, gender, length of therapy, APACHE II score, ICU length of stay, mortality, and discharge disposition. Data are expressed as mean ± SEM. Statistical significance was determined by t-test; $P<0.05$ was considered significant.

Results: Eighty-six patients were started on argatroban for suspected HIT during this 4-year period and form the basis of this study. Demographics revealed an equal number of male and female patients with a mean APACHE II score of 15±1. The average platelet count on admission was significantly higher than the average platelet count on the first day of Argatroban therapy (214±14 x 10^3 vs. 109±11 x 10^3, P=<0.001), accounting for a 49% decrease in platelet count from baseline. Twelve patients were started on empiric argatroban therapy for a clinical suspicion or previous history of HIT. Of the remaining 74 patients, 40 (54%) had in vitro evidence of heparin-induced abnormal platelet aggregation (HIPA) ± positive ELISA for PF4-heparin antibody. Sixty-five (76%) patients were admitted to the intensive care unit. Of the critically ill patients, 29 (45%) patients were admitted to the surgical service and 36 (55%) patients were admitted to the medical service. The surgical group had a higher mortality rate (41% vs. 29%, surgical vs. medical) and longer ICU length of stay (19±3 days vs. 13±2 days, surgical vs. medical, P=0.06). Twenty-two (26%) patients died and 33 (38%) patients required transfer to a long term acute care, skilled nursing or inpatient hospice facility.

Conclusion: Heparin-induced thrombocytopenia is increasingly recognized as a complication of heparin therapy and is more common in critically ill patients. Clinical suspicion for HIT in at-risk patients should be based on the percent reduction in platelet numbers compared to admission levels. Objective evaluation for platelet antibodies may confirm the presence of HIT and minimize over-usage of Argatroban therapy in suspected patients.

NOTES

POSTER #3

RACE-BASED VARIATIONS IN OUTCOMES AFTER LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS: WEIGHT LOSS VERSUS COMORBIDITY RESOLUTION

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Background: Postoperative weight loss and comorbidity resolution after gastric bypass surgery vary greatly among individuals. Little is known about correlation of race, weight loss, and obesity-associated comorbidities.

Hypothesis: Outcomes following gastric bypass surgery differ significantly between white and black patients in terms of weight loss, resolution of comorbidities, and complication rates.

Methods: 764 patients from 8/2001 to 12/2005 underwent laparoscopic Roux-en-Y gastric bypass (LRYGB) by a single surgeon. We reviewed prospectively gathered data including height, weight, body mass index (BMI), race, and gender. End points were excess weight loss (EWL) at 1 and 2 years, presence of hypertension (HTN), diabetes mellitus (DM) and hyperlipidemia preoperatively and at 2 years postoperatively.

Results: There were 646 Black patients (85%) and 92 White patients. There were no significant preoperative differences in height, weight, BMI, HTN, DM, or hyperlipidemia between Black and White patients. At one year, there was no significant difference in EWL between Black and White patients (B 57%, W 61%, p=0.16). At 2 years, however, White patients demonstrated significantly more EWL (B 61%, W 72%, p=0.02). In contrast, Black patients had a greater cure rate of hyperlipidemia (B 70% W 57%, p=0.07), DM (B 91%, W 83%, p=0.17) and HTN (B 81%, W 74%, p=0.11), although these findings did not reach statistical significance. The overall complication rate was 4.7% with no significant difference between groups (p=0.225).

Conclusions: Black patients lost less long-term weight, but experienced improved though not statistically significant comorbidity resolution. LRYGB is equally safe in white and black patients. Comorbidity resolution may not be linearly correlated to EWL.

NOTES

POSTER #4

IS THERE A ROLE FOR PARTIAL CHOLECYSTECTOMY IN THE SETTING OF SEVERE INFLAMMATION?

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Background: Though once the standard of care, open cholecystectomy is now infrequently performed. For the general surgeon, open cholecystectomy is typically performed when a great degree of inflammation precludes safe laparoscopic removal. In those instances, the degree of inflammation can also lead to unacceptable risk of common bile duct injury during the dissection of the Triangle of Calot. In this situation the extent of dissection and amount of resection is not well established. We investigated whether the incomplete removal of a severely inflamed gallbladder can be an acceptable operation to relieve illness and symptoms, with minimal complications.

Methods: We undertook a retrospective review and follow-up telephone questionnaire of all partial cholecystectomies (PC) performed between Oct 1, 2005 and April 30, 2007. Partial cholecystectomy was defined as some portion of the gallbladder left in continuity with the cystic duct and not resected. Data on gender, age, co-morbid conditions, preoperative physical exam findings, radiologic findings, laboratory tests, preoperative antibiotics, pathology, post-surgical complications and symptoms were reviewed.

Results: A total of 828 cholecystectomies were performed by 6 attending surgeons over the 19 months of the study period. Of these, PC was performed in 26 cases. Twenty-one of the 26 PCs performed were begun laparoscopically and converted to open cholecystectomy. Four patients had PC during planned open cases, and 1 was done by laparoscopy. The portion of the gallbladder left unresected in these was a portion of the neck in 13 (50%), the infundibulum in 10 (38%), and the hepatic surface in 3 (12%). Postoperative complications occurred in 7 (27%) patients, with 3 (12%) experiencing more than one complication. These were

retained stones within the common bile duct in 4 (15%), bile leak in 3 (12%), sub-hepatic abscess in 3 (12%), and wound infection in 2 (8%). There were no common bile duct injuries and no deaths. With one exception, all complications were addressed on the initial hospitalization without re-operation. Average length of hospital stay was 6 days (range 3-14 days). Telephone interviews were conducted with 19 (73%) of the 26 patients. Average length of follow-up was 314 days (range 3-666 days). At the time of last contact, mild non-interfering pain was the only ongoing complaint from one patient.

Conclusions: Severe inflammation can preclude safe laparoscopic removal of the entire gallbladder. In these instances, the risk of common bile duct injury and the long-term consequences associated with such an injury do not justify complete dissection of the Triangle of Calot. Our data suggest that PC in the setting of severe inflammation is a reasonable operation with good clinical results and satisfactory symptom relief.

NOTES

POSTER #5

WHERE IS THE AFRICAN AMERICAN SURGEON?

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Background: While studies have looked at historical changes in the number of African American physicians, there have been few studies that examine the rates of African Americans going into surgery. Our study examines the number of African Americans graduating from general surgery residency, internal medicine and family practice programs, and compares it with their non-African American counterparts for the period 2001-2005.

Methods: Our Department of Surgery and Center for Disparities in Health Care (CDH) purchased data from the American Medical Association regarding general surgery residents graduating from 2001-2005. The data set included ethnicity of resident as voluntarily reported by residency programs. We verified this information by asking program directors from 133 of 140 general surgery residency programs to identify African American graduates of their program. Subsequently, we obtained from the AMA similar data for family and internal medicine residents and compared the annual data sets regarding graduation numbers, ethnicity, and sex.

Results: AMA data significantly over-represents the number of African Americans who graduated from residency programs from 2001-2005. Based on follow-up with general surgery programs and former graduates, we identified 206 African American graduates compared to the 337 reported by the AMA. During this time period, the total number of African American general surgery graduates has been in the range of 38-48 per year (3.79-4.59%), while the number of African Americans completing family practice residency is 181-218/year (5.90-6.90%) and internal medicine 340-404/year (4.20-5.05%).

Conclusions: Since the 1970's, the lack of under-represented minority groups in medicine in the US has been understood. Governmental programs along with multiple enrollment initiatives were initiated to increase these numbers. Programs such as Project 3000 by 2000 and affirmative action helped increase the overall numbers of African Americans in medical school; however, the numbers of African Americans in general surgery training are dismal. For over 30 years, leaders in medicine have tried to develop plans to address this problem with little success. There are less than 210 African American who completed general surgery residency between the years of 2001-2005, while over 500 each year pursue either family practice or internal medicine. After reviewing the literature and studying the data, we conclude that major institutional protocols need to be reviewed if change is to occur. For instance: (a) the ethnicity of residents needs to be more reliably collected to have accurate data on which to base future studies; (b) ascertain whether the increased number of foreign medical graduates entering general surgery programs affects African American enrollment; (c) identify African American medical students interested in surgery to ensure proper exposure to general surgery; and (d) identify academic surgical mentors for increased exposure in basic science research.

NOTES

POSTER #6

NATIONAL TRENDS IN PARATHYROID SURGERY FROM 1997 TO 2007: A DECADE OF CHANGE

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Background: The introduction of limited parathyroid exploration (LE) broadened management possibilities for hyperparathyroidism. We sought to document how LE has influenced surgical practice with respect to techniques, use of adjunctive tests, and the factors guiding a surgeon's choice of parathyroidectomy.

Patients and Methods: Members of the American Association of Endocrine Surgeons (AAES) and the American College of Surgeons (ACS) were sent a 49-question survey, and 190 completed questionnaires from 85 endocrine surgeons (26% response rate) and 105 general surgeons who perform parathyroidectomy were analyzed. Below, we present the most relevant trends attaining statistical significance ($p<0.05$).

Results: Currently, 13% of surgeons practice bilateral neck exploration (BE), 68% practice LE, and 20% have a mixed practice. Five years ago, these percentages were, respectively, 30%, 43%, and 27%; and 10 years ago, 72%, 12%, and 16%. This change varied by surgeon type and annual caseload. The shift to LE was greater among endocrine surgeons (ES) and those with LE mentors, compared to general surgeons (GS). High-volume surgeons were more likely to perform LE 5 years ago, but now, surgical methodology is independent of operative volumes. Among surgeons currently practicing LE, 68% employ focal/single-gland (FP) and 32% unilateral explorations. 14 surgeons (13 are academic ES) use videoscopic techniques. 70% of patients are considered LE candidates, 14% LE convert to BE intraoperatively, >90% choose general anesthesia, with most patients undergoing 23-hour observation. Half of all GS, in contrast to 9% ES, never monitor PTH intraoperatively, even with FP. GS and ES also differed dramatically in surgical volumes, indications for BE, incision size, follow-up care, and ultrasound and sestamibi scan expertise. Self-reported outcomes were similar across techniques, although most agreed that BE best identified neck structures. Evidence-based literature and guidance from surgical societies most influenced LE choice, outweighing surgical training, costs, or patient preference.

Conclusions: This survey formally documents the evolution of practice patterns in parathyroid surgery over the last decade. Although LE has achieved wide acceptance, surgical management of hyperparathyroidism has become increasingly disparate. This trend may highlight a need to define best practice guidelines.

NOTES

POSTER #7

AVOIDABLE REOPERATIONS FOR THYROID AND PARATHYROID SURGERY: EFFECT OF HOSPITAL VOLUME

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Background: Hospital volume for thyroid and parathyroid surgery inversely correlates with perioperative complications, most of which are self-limited. This correlation has not been made regarding the need for re-operative surgery that may have greater cost and long-term morbidity for the patient.

Methods: 351 patients undergoing reoperative thyroid (TR) and parathyroid (PR) surgery at a tertiary care hospital from 1999-2007 were retrospectively analyzed. Using objective criteria based on currently accepted standards of care, reoperations were classified as avoidable vs. unavoidable. Publicly-available discharge data was used to classify hospitals as low volume centers (LVC <20 cases/year) and high volume centers (HVC ≥20 cases/year). Chi-square analysis determined statistical significance.

Results: Of 351 re-operations, 129 (37%) were categorized as avoidable and 222 (63%) as unavoidable. Hyperparathyroidism (HPT), thyroid cancer, and recurrent goiter each accounted for a third of reoperations. Of avoidable cases, 60% were parathyroid, while of unavoidable cases, 68% were thyroid. For 237 cases (67%) with available hospital data, 112 (47%) were avoidable and 125 (53%) unavoidable. 78% of PR from LVC were avoidable vs. 62% from HVC ($p<0.001$). 54% of TR from LVC were avoidable vs. 13% from HVC ($p<0.001$). Operations for both HPT and thyroid cancer led to avoidable re-operations more frequently if performed at LVC ($p<0.001$). Operative volume at LVC averaged 2 cases/year and generated 2 referrals over the study period; for HVC, this was 86 cases/year and 3 referrals. LVC had 86% true-positive sestamibi scans, with most glands removed from a normal anatomic location; in contrast, 11% rates from HVC suggest higher patient complexity.

Conclusions: By objective criteria, a significant number of thyroid and parathyroid reoperations are avoidable. Most originate from LVC. Except for cancer, thyroid reoperations tend to be unavoidable. Most parathyroid reoperations are avoidable at all centers, although those from HCV may be more complex. In addition to decreasing complication rates, thyroid and parathyroid surgery performed at HVC would also decrease the need for patients to undergo reoperative procedures.

NOTES

POSTER #8

A RETROSPECTIVE REVIEW OF THE TREATMENT ALGORITHM AND COMPLICATIONS IN THE BELT LIPECTOMY, PANNICULECTOMY AND ABDOMINOPLASTY PATIENT POPULATIONS AT ONE INSTITUTION

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Purpose and Methods: We reviewed the charts of 276 patients who underwent abdominoplasty, panniculectomy or belt lipectomy at Mayo Clinic Rochester, MN between January 2003 and December 2005. The purpose of the review was to evaluate the minor and major complications and determine whether our current treatment algorithm affected outcome, when compared to the current literature. Here we present our current treatment algorithm for drain placement, the criteria for removal, and their effect on short-term outcome (initial 12 postoperative months). Our criterion for drain removal is less than 30 cc/drain per 24 hour period. The overall seroma rate was 7.6%. In patients who had removal of the drain with greater than 30 cc in a 24 hour period, the seroma rate was 26%, versus 6% of patients who had their drains removed if the output was less than 30 cc/24 hour period.

Results: Superficial skin necrosis or dehiscence occurred in 12% of patients. 66% of patients who developed skin necrosis/dehiscence underwent combination procedures including ventral hernia repair, TAH/BSO, radical prostatectomy and ileostomy takedown. Minor complications (skin necrosis, cellulitis, hypertrophic scar, neuropraxia and dermatitis) occurred in 23.5% of the total patient population; moderate (seroma, umbilical ischemia) 9.4% and major (death, DVT, PE, hematoma and return to OR) 17.3%. When combined with GU and/or general surgery procedures, the following complication rates were observed: minor 26%, moderate 8.4% and major 20.6%.

Conclusion: The findings support our current treatment algorithm for drain removal. The complication rates of the combination cases are comparable to the current literature, and reinforce the necessity to educate this patient population on the short and long term expectations of these procedures.

NOTES

POSTER #9

LAPAROSCOPIC VERSUS OPEN COMPONENT SEPARATION FOR COMPLEX ABDOMINAL WALL RECONSTRUCTIONS

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Background: Traditional open component separation involves elevation of large lipocutaneous flaps predisposing to significant postoperative wound morbidity. We have developed a minimally invasive component separation technique to theoretically reduce these wound complications while providing adequate myofascial advancement. In this study we compare perioperative outcomes and hernia recurrence rates between open and laparoscopic component separation techniques during complex ventral hernia repairs.

Patients and Methods: We retrospectively identified all patients undergoing component separation procedures between August 2005 and August 2007. Information collected included patient demographics, technique of component separation, and postoperative outcomes. Hernia recurrence was determined by physical exam or abdominal imaging.

Results: Eleven patients underwent open component separation (5 males), and 11 patients underwent laparoscopic component separation (4 males) during the study period. There was no significant difference between the groups in terms of age (open 66±13 years and lap 56±14 years, p=0.09), albumin prior to surgery (open 3.1±0.8 and lap 3.38±0.8, p=0.45), size of the defect (open 325±194 cm^2 and lap 424±328 cm^2, p= 0.39), number of prior hernia repairs (open 1.0±0.9 and lap 1.55±1.3, p= 0.2), or presence of infection/bowel resection during surgery (open 6/11 and lap 8/11, p= 0.66). All patients underwent biologic mesh reinforcement of the component separation. The laparoscopic component separation resulted in significantly fewer postoperative wound complications when compared with the open approach (18% vs 82%; p=0.03). Average length of stay was shorter in the laparoscopic group (6 days vs 14 days). One patient in each group developed hernia recurrence during follow-up.

Conclusions: Laparoscopic component separation results in significantly less postoperative morbidity and earlier hospital discharge. Given these advantages along with the comparable myofascial advancement and equivalent hernia recurrence rates, laparoscopic component separation may be the procedure of choice for myofascial advancement in complex ventral hernia repair.

NOTES

POSTER #10

IDENTIFICATION OF A HUMAN HEPATO-CELLULAR CANCER STEM PHENOTYPE WITH OCT4 AND TGF-β MEMBERS

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Background: Internationally, hepatocellular carcinoma (HCC) remains one of the most common malignancies, and a steady rate of increase has been reported in the United States over the past several decades. Development of HCC occurs through progression of liver injury caused by chronic hepatitis, extensive alcohol intake, or toxins, sequentially resulting in liver cirrhosis, dysplastic lesions, and finally invasive liver carcinoma. Recent studies suggest that these agents can target liver stem/progenitor cells leading to their expansion and transformation into cancer stem cells (CSCs). Exploration of the difference between CSCs from normal stem cells is crucial not only for the understanding of tumor biology, but also for the development of specific therapies that effectively target these cells in patients. Yet, the identification of cancer stem cells and mechanisms by which they arise remain elusive. Among the multiple signaling networks that orchestrate the differentiation of somatic stem cells into functional lineages, the TGF-β family proteins have emerged as bifunctional regulators of the maturation of cells and as suppressors of carcinogenesis. In order to determine the role of the TGF-β pathway identifying human hepatocellular cancer stem cells, we first utilized a broad microarray and proteomic analysis of ELF HCC's, and then applied this information to human tissues focusing on a signature of 5 proteins Oct4, lL-6/STAT3, Nanog, TBRII, and ELF to identify normal and cancer stem cells. Interestingly, TBRII mice were more susceptible to HCC, and over 40% of $Elf^{+/-}$ mice spontaneously developed HCC.

Aims: 1) To identify TGF-β regulated liver stem/progenitor cell population; 2) To investigate whether the TGF-β phenotype is altered in human HCCs.

Methods and Results: 1) Immunohistochemical labeling (IHC) was performed in post living donor liver transplanted tissues taken from 5 different recipients at 3 months after surgery. 2-4 cells out of 30,000-50,000 cells were identified which express embryonic stem cell markers Oct4 and Nanog localized around portal tract areas. These cells also stained positively for ELF and TBRII. 2) Confocal triple labeling confirms co-localization of Oct4 and ELF in these cells along with a proliferative marker p-Histone and another important embryonic stem cell marker Stat3. 3) The $Oct4^{+}$ cells express both cholangiocytic cell lineage marker CK19 and hepatocytic cell lineage marker albumin. 4) IHC labeling of 17 human HCC specimens revealed a distinct cluster of $Oct4^{+}$ cells. Interestingly, these regions no longer expressed TBRII and ELF in 15 out of 17 samples. 5) IHC labeling of Elf in 5 human HCC specimens demonstrated a dramatic decrease in expression versus 5 normal human liver specimens.

Conclusions: We report that in regenerating human liver, 2 to 4 cells per 30,000-50,000 cells express stem cell proteins Stat3, Oct4, and Nanog, along with the pro-differentiation proteins TGF-β receptor type II (TBRII) and embryonic liver fodrin (ELF). Examination of human hepatocellular cancer (HCC) reveals cells which label with stem cell markers that have unexpectedly lost TBRII and ELF. The identification of $Oct4^{+}$ cells in human HCC specimens coupled with absence of TGF-β proteins in those areas suggests that the liver progenitor/stem cells with altered TGF-β phenotype could develop into cancer progenitor/stem cells. Understanding of this regulation could provide a potential novel therapeutic approach in treating this cancer.

NOTES

POSTER #11

DCIS: THE HARLEM EXPERIENCE

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Background: There has been a surge in detection of ductal carcinoma in situ (DCIS) following breast cancer screening with mammography. We hypothesize that breast screening in our hospital caring for under- and un-insured predominantly African-American and Hispanic patients has increased the detection of early stage breast cancer.

Patients and Methods: The Harlem Hospital Cancer Registry was examined for cases of DCIS without microinvasive or invasive ductal carcinoma seen between January 1996, and December 2005. The medical records for these cases were reviewed with attention to patient age at presentation, family history of cancer, clinical presentation, mammographic findings, location of breast lesions, treatment, tumor recurrences, histologic type and grade.

Results: Thirty-three cases of DCIS treated over a 10-year period were analyzed. Table 1 shows the age distribution for these cases. The median age at presentation was 51 years. Six patients (18.2%) had family history of breast cancer in first or second degree relatives. A patient's mother had ovarian cancer. Nine patients (27.3%) had a family history of other cancers (one each of prostate, thyroid, renal, liver, oropharynx and brain cancers, and 3 unknown cancers). Twenty-six lesions (78.2%) were detected mammographically as clusters of microcalcifications while 6 (18.2%) were non-palpable mammographic masses. One case presented as nipple discharge. Median tumor size was 7 mm. The upper outer quadrant was the commonest tumor location (Tables 2 & 3). In the tables, total numbers exceed 33 histologically reported tumors because radiographic reports included at least 12 patients with multifocal and 5 with multicentric tumors.

Table 1: Distribution of cases within age groups

Age range (years)	Number of cases
31-40	4
41-50	11
51-60	7
61-70	4
71-80	4
≥ 81	3
Total	**33**

Table 2: Laterality of tumors

	N	%
Right	23	60.5
Left	15	39.5
Total	38	100

Table 3: Location of tumors by quadrant

Quadrant	Inner	Outer
Upper	8	20
Lower	6	4
Total	14	24

Table 4 shows that 22 tumors were treated with wide local excision while mastectomy was performed for 11 tumors. Table 5 lists the indications for mastectomy. Three of the 11 mastectomies were performed for tumor at excision margin or within 5 mm of excision margin on at least 2 excisions.

Table 4: Management of DCIS

Procedures	Alone (%)	+XRT (%)	+ALND (%)	+ALND +XRT (%)	+SLNB (%)	N (%)
Wide local excision	10 (30.3)	7 (21.2)	—	5 (15.2)	—	22 (66.7)
Mastectomy	2 (6.1)	1 (3)	6 (18.2)	1 (3)	1 (3)	11 (33.3)
Total	12 (36.4)	8 (24.2)	6 (18.2)	6 (18.2)	1 (3)	33 (100)

Table 5: Indications for mastectomy in DCIS

Clinical/pathologic feature	Number	% of 11 cases
Positive margins	3	27.3
DCIS subtype		
Comedo (high grade)	1	9.1
Low-intermediate grade	2	18.2
Multicentric disease	5	45.4
Recurrent DCIS	1	9.1
Patient/surgeon preference	2	18.2
Total	11	100

Two local recurrences were observed in patients treated by wide local excision. One had high-grade comedo DCIS that was treated by simple mastectomy, while the second had modified radical mastectomy for recurrence as invasive carcinoma. Only 3 (9.1%) patients received Tamoxifen therapy.

Table 6 shows the distribution of tumor histologic grade within age groups. Of note is that 4 of 7 high grade DCIS cases occurred in the 41-50 years age group. In Table 7, 5 of 12 multifocal DCIS cases occurred in the 41-50 years age group while 2 of 4 comedo histology cases occurred in the youngest age group of 31-40 years. There were 5 cases of multicentric DCIS.

Table 6: Distribution of histopathologic grade by age group

	Age group (years)						
Tumor Grade	31 - 40	41 - 50	51 - 60	61 - 70	71 - 80	>80	Total
High grade	2	4	1	0	0	0	7
Intermediate grade	1	2	4	2	1	2	12
Low grade	0	2	0	0	1	1	4
Undocumented	1	4	1	0	2	2	10
Total	4	12	6	2	4	4	33

Table 7: Distribution of extent and comedo histology by age group

	Age group (years)						
Tumor characteristic	31 - 40	41 - 50	51 - 60	61 - 70	71 - 80	>80	Total
Multifocality	1	5	2	2	1	1	12
Multicentricity	0	2	1	2	0	0	5
Comedo type	2	1	1	0	0	0	4

Conclusion: DCIS occurring without microinvasive or invasive ductal carcinoma is not a common presentation of breast cancer in the Harlem community. Mammographic microcalcification suspicious for malignancy is the commonest presentation of DCIS. Of interest is that one-third of patients with DCIS had mastectomy due to high incidence of multicentricity. This review further confirms that DCIS, like invasive carcinoma, has a higher incidence in young African-American and Hispanic women less than 50 years of age compared to white women.

NOTES

POSTER #12

LOCAL RECURRENCE AFTER LAPAROSCOPIC RADIOFREQUENCY ABLATION OF LIVER TUMORS: AN ANALYSIS OF 1032 TUMORS TREATED WITH THE 2ND GENERATION ABLATION TECHNOLOGY

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Introduction: Most of the local recurrence data in the literature after radiofrequency thermal ablation (RFA) have been reported using first generation ablation technology in retrospective fashion without a detailed multivariate or Kaplan Meier analysis. The aim of this prospective study is to determine the local recurrence rate of the current second generation ablation technology and identify independent factors that predict local recurrence.

Methods: Three-hundred thirty-five patients with 1032 unresectable liver tumors underwent laparoscopic RFA using a 5-cm thermal ablation catheter and a 150-W generator between November 1999 and August 2005. All lesions were assessed prospectively regarding tumor type, size, segmental and parenchymal locations, and blood vessel proximity in the operating room and size of ablation zone at 1 week CT scans. Lesions that recurred in follow-up CT scans were identified prospectively. Univariate Kaplan Meier and Cox Proportional Hazards Model were used for statistical analysis.

Results: Of a total of 1032 tumors, local recurrence was identified in 231 (21.7%) on CT scans with a mean follow-up of 17 months (median 12, range 3-68 months). The local recurrence was definite in 170 tumors (74%) and suspicious in 61 (26%). Most local recurrences were evident by 15 months, although recurrences up to 64 months were detected in some lesions. Based on tumor type, local recurrence rate per tumor was highest for colorectal metastasis (34%, n=161), followed by non-colorectal non-neuroendocrine metastasis (22%, n=22), HCC (18%, n=23) and neuroendocrine metastasis (6%, n=19).

On univariate analysis, tumor type and size, ablation margin, liver segmental location, blood vessel proximity and type of ablation (first time vs repeat) effected local recurrence survival per lesion. Cox Proportional Hazards model identified tumor type, tumor size, ablation margin, and blood vessel proximity to be independent predictors of local recurrence. Locally recurrent tumors were amenable to repeat RFA 73% of the time for neuroendocrine liver metastases, 44% of the time for HCC, 28% of the time for colorectal, and 18% of the time for non-neuroendocrine non-colorectal liver metastases.

Conclusions: The local recurrence rate after RFA is higher than the rates reported in the literature. It is a function of multiple factors and time. This study provides an insight into reporting and interpretation of local recurrence data. This information can be used to identify those tumors at a higher risk for failure to be more aggressive in obtaining a larger margin of ablation at the time of RFA.

NOTES

POSTER #13

ENHANCED EXPRESSION OF THE UNFOLDED PROTEIN RESPONSE IN KELOID FIBROBLASTS

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Introduction: Keloids are a common form of pathologic wound healing, and represent a major burden to our health care system. We have previously demonstrated that increased response to cellular stresses results in production of more pro-fibrotic factors in keloid cells and are looking for a common mechanism linking these cellular responses. Since keloid fibroblasts (KFs) are known to be secretory cells, we hypothesized that the unfolded protein response (UPR) could be deranged in KFs leading to increased activation of these cellular stress pathways.

Methods: Normal fibroblasts (NF) and KFs were exposed to two known inducers of the UPR. Cells were treated with 4 μg/ml of tunicamycin for 6, 12, or 24 hours, or hypoxia (2% O_2) for 24 or 48 hours, and total protein was harvested. UPR activation was measured by immunoblotting with specific antibody for the activated Xbp-1 protein.

Results: There is increased activation of Xbp-1 in KFs compared to NFs following exposure to hypoxia. In contrast, exposure to tunicamycin leads to a divergent response where NFs have increased activation of Xbp-1 compared to NFs.

Conclusion: NFs and KFs have differences in UPR activation. In addition, we have found that NFs and KFs have divergent responses to tunicamycin and hypoxia. The UPR is known to upregulate stress response signaling pathways, and we are examining specific changes in the UPR and their impact on the stress response.

NOTES

POSTER #14

CYTOREDUCTIVE SURGERY AND CONTINOUS HYPERTHERMIC PERITONEAL PERFUSION (CHPP) IN CHILDREN: A PILOT STUDY

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Background: The delivery of regional hyperthermic chemotherapy using CHPP has been well established in adults with carcinomatosis. This approach has not previously been used in children. Here we describe our initial experience using CHPP after extensive cytoreductive surgery for pediatric patients with abdominal carcinomatosis.

Methods: This pilot study includes 7 patients age 6 to 18 years who underwent cytoreductive surgery followed by CHPP using Cisplatin at a single institution by a single surgeon, from January 2006 to September 2007. Patients diagnosed with desmoplastic small round cell tumor (DSRCT), rhabdomyosarcoma (RMS), malignant peripheral nerve sheath tumor and mesothelioma who had refractory and extensive abdominal disease were included. Extent of tumor resected, operative morbidity and mortality and tumor response are reported.

Results: Peritoneal cancer index scores ranged from 3 to 17. Nodules removed ranged from 5 to 402. Operations included bilateral diaphragm stripping, partial peritonectomy, small bowel resection and tumor resection of the liver and spleen. There was no operative mortality. Hospital stay ranged from 5 to 11 days. One patient required readmission for non-operative management of a bowel obstruction and 1 patient experienced temporary renal insufficiency. The two sarcoma patients died at 2 months and 3 months post CHPP. The median disease free interval for patients followed more than 6 months is 13.5 months.

Conclusion: In our initial evaluation of CHPP in children, minimal morbidity was identified. We are continuing to do CHPP for pediatric patients, now in a phase 1 trial with escalating doses of Cisplatin.

NOTES

POSTER #15

THERAPEUTIC RESISTANCE IN BREAST CANCER: POTENTIAL ROLE OF NF-κB

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Background: Anti-estrogen therapy is the mainstay of non-chemotherapeutic treatment in estrogen receptor positive breast cancer, a subgroup which accounts for 70% of all breast cancer diagnoses. Unfortunately, 50% of this population exhibits de novo resistance. Nuclear factor kappa B (NF-κB), a nuclear transcription factor key in determining cell survival, has been associated with tumorigenesis in estrogen receptor negative breast cancer. In addition an inverse relationship has been observed between estrogen receptor signaling and NF-κB activity. Therefore we proposed that resistance to anti-estrogen therapy could be mediated by the removal of estrogen receptor driven repression of NF-κB resulting in unchecked cell survival.

Materials and Methods: To investigate de novo resistance, we introduced a constitutively active NF-κB subunit (p65) into MCF-7 cells and assessed these cells for resistance to tamoxifen and fulvestrant. Controls included the parent and vector control cell lines. In addition we cultured MCF-7 cells for 2 months in the following conditions: estrogen deprived media, deprived media + tamoxifen, deprived media + fulvestrant, and assessed NF-κB activity in the cells that continued to proliferate after estrogen deprivation or drug treatment. NF-κB activity was examined by Electrophoretic Mobility Shift Assay (EMSA), and confirmed by supershifting complexes with specific antibodies.

Results: Constitutively active p65 does not confer de novo resistance to antiestrogen therapy in MCF-7 cells. These cells remain sensitive to the inhibitory effects of estrogen withdrawal and antiestrogen drug treatment. Neither short-term exposure to antiestrogens nor estrogen deprivation appreciably increase NF-κB activity in MCF-7 cells. However, long-term estrogen deprivation and antiestrogen drug treatment dramatically increases NF-κB activity measured by EMSA.

Conclusion: Classical NF-κB activation may not be the mechanism for de novo resistance in estrogen receptor positive breast cancer, but it may play a role in acquired resistance. NF-κB may be a therapeutic target, whose inhibition may be exploited in conjunction with standard anti-estrogen treatment of estrogen receptor positive breast cancer.

NOTES

POSTER #16

CHARACTERIZATION OF RECTAL CANCER IN HEREDITARY NON-POLYPOSIS COLORECTAL CANCER

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MD Anderson Cancer Center and Wayne State University

Introduction: Hereditary non-polyposis colorectal cancer (HNPCC) accounts for 2-5% of all colorectal cancers. Most patients that develop colon cancer are treated with segmental or subtotal colectomies, which leave a risk of rectal cancer. The rectal component of HNPCC remains relatively unknown. Therefore, we intended to characterize the natural history of rectal cancer in patients with HNPCC.

Methods: An HNPCC registry was created from 137 patients treated at the University of Texas – MD Anderson Cancer Center from February 1996 to December 2006. Patients qualified for entry into this registry based on prior genetic counseling and/or tumors tested for microsatellite instability. HNPCC diagnosis was assigned to patients that met Bethesda and/or Amsterdam I or II criteria. Group A consisted of patients diagnosed with rectal cancer as the index malignancy. Group B consisted of patients with rectal cancer as a metachronous malignancy.

Results: Fifteen of 137 (11%) HNPCC patients in our registry developed rectal cancer. Patient gender was 40% (6/15) male and 60% (9/15) female. There were 8 patients in Group A with a median age at diagnosis of rectal cancer of 38 years (range 20-76). The 7 patients in Group B had a median age of rectal cancer diagnosis of 57 years (range 41-71). None of the 8 patients in Group A developed metachronous colon or extracolonic cancers. Rectal cancer in Group B was diagnosed at a median of 190 months from index colon or extracolonic cancer. Overall, 1-year, 2-year, and 5-year survival was 93%, 92.8%, and 80%, respectively, for all HNPCC patients that developed rectal cancer.

Conclusions: Rectal cancer is a common outcome for patients with HNPCC. Surveillance of HNPCC should be considered for any patient with rectal and extracolonic cancers.

NOTES

POSTER #17

COMPARISON OF LAPAROSCOPIC VERSUS OPEN LIVER TUMOR RESECTION: A CASE-CONTROLLED STUDY

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Background: Although there is data in the literature about the safety and efficacy of laparoscopic liver resections, there are not many studies comparing laparoscopic versus open approaches in a case-matched design. The purpose of this study is to compare the perioperative outcome of laparoscopic versus open liver resections from a single institution.

Methods: Twenty-two patients underwent laparoscopic liver resection between April 1997 and August 2007, with a prospective laparoscopic program started in April 2006 (n=16). This group of patients was compared to 22 consecutive patients undergoing open resection who were matched by size of the lesion (≤5 cm for malignant and ≤8 cm for benign), anatomical location (segments 2, 3, 4b, 5, 6), and type of resection (wedge resection, segmentectomy, partial liver resection). Data was obtained from medical records as well as from a prospective database. Statistical analysis was performed using t-test and Chi square. All data are expressed as mean ± SEM.

Results: The mean age in the laparoscopic group was 54.9 ± 3.5 years vs 63.6 ± 2.7 years in the open group (p=0.97). There was no difference between the groups regarding gender. There were more patients with malignant lesions in the open group (68%) versus the laparoscopic group (32%) (p=0.01). Seven patients underwent partial, 1 patient segmental and 14 patients wedge liver resection in the laparoscopic group versus 8 patients who underwent partial, 8 patients segmental and 6 patients wedge liver resection in the open group (p=NS). The mean tumor size was 4.7 ± 0.6 cm in the laparoscopic group versus 4.2 ± 0.3 cm in the open group (p=0.25). Seven (32%) out of 22 cases in the laparoscopic group were hand-assisted. Inflow occlusion was used in 1 case (5%) in the laparoscopic group versus 9 (41%) in the open group.

The mean operating time was 164.6 ± 13.0 min for the laparoscopic group and 129.9 ± 9.5 min for the open group (p=0.02). The mean estimated blood loss during the procedure was 120.0 ± 42.3 cc for the laparoscopic group and 263.0 ± 41.3 cc for the open group (p=0.02). The mean weight of the resection specimen was 106.9 ± 19.8 g for the laparoscopic group and 132.8 ± 21.9 g for the open group (p=0.4). Surgical margin was less than 5 mm in 57% of the malignant tumors in the laparoscopic group and in 33% in the open group. The mean hospital stay was 3.7 ± 0.4 days for the laparoscopic group and 6.0 ± 0.4 days for the open group (p<0.0001). The incidence of postoperative complications was 18% in both groups.

Conclusion: This study shows that with a longer operative time, the laparoscopic approach, despite the learning curve, offers advantages regarding less blood loss and hospital stay compared to the open approach for minor liver resections.

NOTES

POSTER #18

DRAMATIC RACIAL DISPARITY IN GERM CELL TUMOR SURVIVAL FOR ADOLESCENTS AND YOUNG ADULTS, CHILDREN UNAFFECTED

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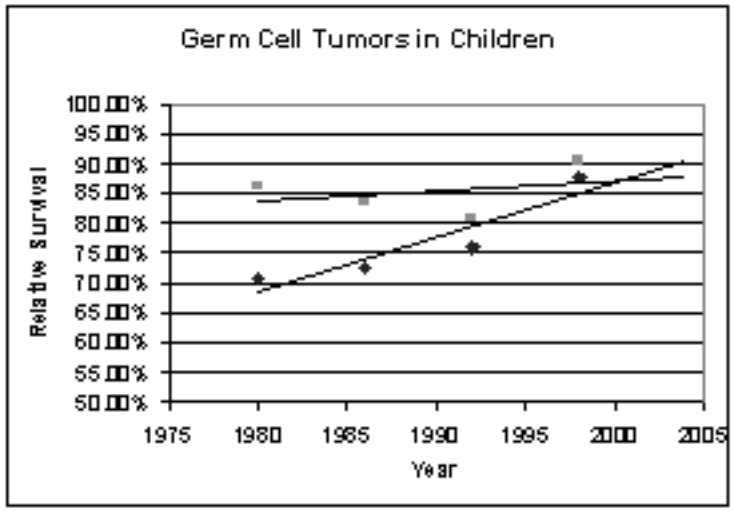
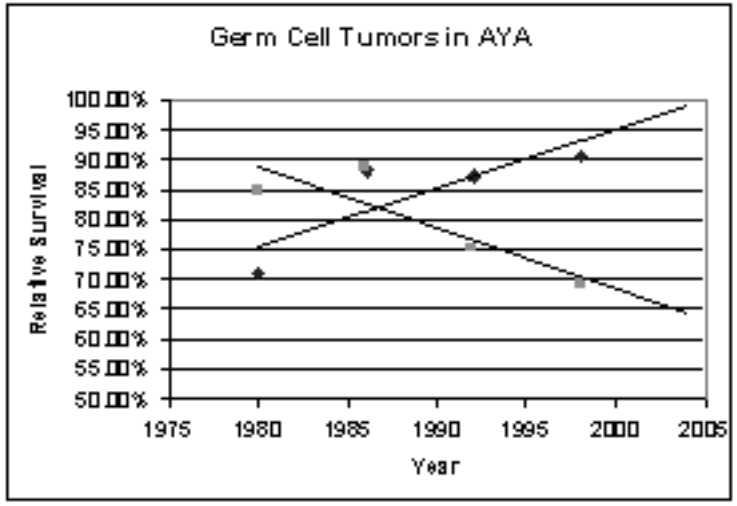
Introduction: Overcoming disparities in the successful treatment of minority cancer patients has been a major challenge. In particular, blacks/African Americans face a higher likelihood of developing and dying from each of the four most common malignancies in the U.S. (breast, prostate, colon, and lung cancer) as well as from other cancers. Among children, leukemia and lymphoma have also shown a worse outcome in black patients vs. whites, although our unpublished results show that this disparity is decreasing and has likely been eliminated.

Method: Given the success of the Children's Oncology Group (COG) in reducing the racial deficit in leukemia and lymphoma, we examined national survival data from the U.S. Surveillance, Epidemiology and End Results (SEER) program for trends in 10-year survival difference between white and blacks with germ cell tumors, as a function of age at diagnosis. Children vs Adolescent and Young Adult (AYA)

Results: Surprisingly, we found that black children have had greater 10-year survival than white patients over the last 25 years; however, white patients have now equaled the survival rate of their black counterparts. In comparison, in the AYA population, 10-year survival has dramatically decreased in the black population by nearly 25% over the last quarter century while white patients have continued to improve.

Conclusion: Although biology of the disease may play a minor role, it is more likely that poor access to healthcare, late diagnosis, and poor patient compliance play major socioeconomic roles in these findings for AYA. A major solution would be access to clinical trials through COG or other similarly structured clinical trials for the next older age group as recommended by the current National Cancer Institute Program Review Group relevant to disparate outcomes.





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POSTER #19

BE BLESSED: A BIOPSYCHOSOCIAL MODEL FOR REDUCING HEALTH DISPARITIES

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Background: Most biopsychosocial models contend that health and wellness are determined by biological, psychological, and social factors. The present study introduces a health model that broadens the biopsychosocial view to include a spiritual factor that also influences health-related physiological processes. The BE BLESSED Health Model™, as it is called, is a biopsychosocial-spiritual model of health that has been primarily derived from findings in an empirical study of psychosocial stress and health that our research group has been conducting with a community-based sample of adult African Americans. This conceptual model recognizes that health outcomes are determined by the dynamic interplay of activities across nine biopsychosocial-spiritual sub-domains expressed by the acrostic BE BLESSED.

Objective: The current study examines the socioeconomic gradient in health and discusses its implications in relation to objective biomarkers of health, health perception, and elements of racism.

Methods: Participants in our study include 125 African American (males=60 and females=65) between the ages of 18 to 85. Each participant in the study provided a blood and urine sample to determine the levels of immune, endocrine, cardiovascular, and metabolic functions. Participants were also given a battery of neuropsychological tests, psychosocial measures, and a health-related quality-of-life survey.

Results: The present study focuses on those findings that involve measures of metabolic activity (HDL, triglycerides, waist-to-hip ratio), cardiovascular functions (blood pressure), health-related quality of life, and perceived racism. As expected, socioeconomic status (SES) was inversely related to HDL levels and directly related to triglyceride levels, waist-to-hip ratio, and systolic blood pressure. Regression analyses show that in addition to SES, perceived racism accounted for a significant proportion of the variance in general (physical) health perception and mental health.

Conclusions: These findings suggest that in addition to social class, elements of racism are independently related to subjective impressions of physical and mental health. They are also consistent with other studies which show a greater proportion of sub-clinical markers of disease risk and chronic health conditions among lower SES persons. These findings are examined in the context of the BE BLESSED model and its potential for identifying the underlying mechanisms that link biological, psychological, social, and spiritual factors 1) to the onset and progression of disease processes, 2) to physical healing and recovery, and 3) to health disparities among ethnic and racial minorities.

NOTES

POSTER #20

HEPATIC ARTERY (HA) VASOSPASM IN THE SMALL-FOR-SIZE (SFS) LIVER GRAFT IS INDEPENDENT OF NOREPINEPHRINE (NE)

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Introduction: Elevated levels of NE are reported in SFS liver grafts compared to full-size grafts. The aim of the study is to evaluate the impact of elevated NE on the HA vasospasm associated with the SFS graft.

Materials and Methods: Experiments were carried out in accordance with Guiding Principles in the Care and Use of Animals. 23 female pigs, 18-64 kg, received liver grafts of 60% liver volume (LV), G1 (n=8), 30% LV, G2 (n=7) and 20% LV, G3 (n=8) and followed for 5-7 days. Portal vein and hepatic artery blood flow (PVF, HAF) and systemic hemodynamics were measured at T0, 10min T1, 60min T2 and 90min T3, post reperfusion and POD 3, 5 and 7. Serum epinephrine (Ep) and NE were estimated using HPLC at the time points above and at 3hrs, 6hrs, 12hrs and POD 1, 3, 5 and 7.

Results: SFSS ranging from moderate to severe was observed in G2 and G3 animals, respectively. Baseline PVF and HAF (ml/100g/min) were 748 (meanSD) and 2912. PVF peaked at T1 with the greatest increase in G3: 14255 in G1, 22396 in G2 and 28578 in G3 ($p<.002$). On POD 5/7 PVF decreased close to baseline in all grafts. HAF decreased in all groups at T1 in response to increased PVF, 2916 in G1, 2412 in G2 and 218 in G3. HAF continued to decrease and on POD 7 the percentage of total liver blood flow supplied by the HA had decreased from 25% (T0) to 6% in G3, 9% in G2 and 17% in G1 ($p<.03$). Baseline serum NE levels (pg/ml) were 3612 in G1, 3614 in G2 and 5331 in G3. Levels peaked in all groups at 6 hrs with the greatest increase in G3, 9481218 in G3, 754892 in G2 and 378126 in G1. NE remained increased in all groups up to POD 7, 515430 in G1, 815153 in G2 and 425229 in G3. Epinephrine peaked at 6 hrs in all groups with the greatest increase in the smallest grafts, 14756 in G1, 829457 in G2 and 8111212 in G3.

By POD 7 levels were trending towards baseline, 5439 in G1, 14576 in G2 and 6529 in G3. HA infusion of the α-adrenergic blocker, phentolamine, administered in gradually increasing doses, did not reverse the reduced HA low observed in G3 animals.

Conclusion: Elevated serum NE in the SFS liver graft occurs for many complex reasons, but it is not the primary factor mediating the HA vasospasm associated with the SFSS.

Notes

POSTER #21

RACE INFLUENCES ACCESS TO LIVER TRANSPLANTATION AND MORTALITY ON THE WAITING-LIST

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Background: While African-Americans (AA) are believed to have reduced access to various medical therapies, race-specific objective data relating to liver transplantation (LT) are sparse. We therefore undertook this study with the following specific aims: (1) To compare AA and Caucasians with regard to (a) the severity of liver disease at the time of listing for LT, as measured by the Model for End-stage Liver Disease (MELD) score and (b) waiting list mortality; and (2) To define predictors of mortality while awaiting OLT.

Methods: This was a retrospective analysis of the United Network for Organ Sharing (UNOS) database on OLT registrants from 1997 to 2001, aged between 18 and 70 years. Variables examined included race, age at listing, gender, biochemical liver tests, and outcome following transplant registration. Individuals lacking information on the variables essential to calculation of the MELD score were excluded. We also excluded those listed as being Hispanic, as this criterion is poorly defined by UNOS and may be inaccurate. Mann-Whitney t-test was used to compare continuous variables, and the log-rank test to compare means. The Kaplan-Meier method was used to compute transplant-free survivals on the waiting list.

Results: A total of 4853 patients were included; over 85% of these were Caucasian, and 60% were male. African-Americans accounted for 7.5% of those listed. The overall rate of deceased donor transplantation was 28.5%, and the mortality rate on the waiting list was 23.3%. The mean MELD score among AA at the time of listing was 28 compared to 22 in Caucasians, p=0.034. The rate of transplantation at 4 years from the time of listing was similar among AA and Caucasians, 29% vs 28% (p=NS), as was time to transplantation. Mortality on the waiting list was significantly higher among AA than among Caucasians (28.5% vs 21.7%, p=0.02). This data is summarized in Table 1. Predictors of mortality on the waiting list were: age > 55 yrs, AA race, MELD score.

Table 1

	All Races	African-Americans	Caucasians	p Value
MELD score at listing	17	23	16	0.03*
Mortality on Waiting-List (%)	23.3	28.5	21.7	0.02*
Time to OLT (days)	307	282	314	NS
Rate of OLT within 4 years (%)	28.5	28	29.4	NS

Conclusions: (1) African Americans have a lower rate of registration on the LT waiting list than would be expected from their representation in the US population; (2) AA are listed at a more advanced stage of disease severity, i.e., higher MELD scores, than are Caucasians, presumably due to delayed diagnosis and referral for transplantation; (3) the mortality of AA on the waiting list is significantly higher than that of Caucasians; and (4) once listed for OLT, AA have similar rates of transplantation and waiting times. Our data suggest a marked disparity in referral patterns and access to LT among different racial groups, resulting in greater mortality without benefit of transplantation in African-Americans.

NOTES

POSTER #22

THE ECONOMIC IMPACT OF THE FOREIGN BORN POPULATION ON U.S. COUNTIES: THE HEALTHY MIGRANT EFFECT

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Background: Immigration has recently been depicted as a drain on U.S. economic resources. This sentiment has been fueled by an ongoing influx of undocumented immigrants. The perception that immigrants, undocumented or otherwise, are disproportionately large consumers of welfare, health resources and catalysts of economic decay is largely without empirical evidence. Indeed, it is counterintuitive on the consideration that the "Healthy Migrant Effect" tends to itself disproportionately select the most capable. There is growing evidence that immigrants may not be a drain on the economy.

Hypotheses: We sought to determine whether the presence of foreign born nationals resulted in a decreased economic value of a county as determined by household income and mortgage value, and whether the presence of immigrants contributed to the percentage of people living in poverty within that county.

Methods: We performed a retrospective analysis of the 2004 version of the Area Resource File (ARF), a collection from more than 50 sources, including the American Medical Association, American Hospital Association, U.S. Census Bureau, Centers for Medicare and Medicaid Services, Bureau of Labor Statistics, and National Center for Health Statistics. Outcomes of interests were various measures of community income and wealth, including median household income, household per capita income, median home value, and percent of population living in poverty. The primary independent variable was the percentage of population in each county that is foreign born. Single and multiple linear regression analyses were performed.

Results: The mean (and median) percentage of population that is foreign born is 3.42% (1.70%) per county. In terms of income, on single linear regression analyses, every one percentage point increase in foreign born population in a county was associated with an increase of US $598 in median household income in that county ($p<0.0001$, 95 CI 525.80 to 671.07) and an increase of US $432 in per capita income in that county ($p<0.0001$, 95 CI 384.36 to 479.86). In terms of wealth, every one percentage point increase in foreign born population in a county was associated with an increase in median home value by US $4340.08 in that county ($p<0.0001$, 95 CI $4036.38 to 4643.78). There was no significant association between the degree of poverty in a county, as measured by percentage of population living in poverty, and the percentage of foreign born population resident in that county (regression coefficient 0.032, $p=0.111$, 95 CI -0.007 to 0.072). In contradistinction, however, health-care utilization indices revealed that the total number of hospitals decreased with the increasing percentage of foreign born population ($p<0.0001$, -0.183 to -0.068). Additionally, the number of primary care physicians also tended to decrease ($p = 0.63$, 95 CI -.0011 to 0.0007) with increased foreign born population.

Conclusions: In this large sample, the percentage of foreign born nationals was not found to be associated with economic decline of the community at a county level. Indeed, increasing percentage of foreign born population was found to be significantly associated with increased income and wealth, an observation consistent with the Healthy Migrant Effect. The decreased access to primary care and hospitals may explain the phenomenon by which immigrants initially of better health regress to the site-specific health status of the receiving community. Overall, these findings contradict widely held misconceptions about the deleterious economic effect of foreign born residents and their utilization of health-care resources, and thus raise important policy issues concerning immigration reform ahead of the 110th U.S. Congress.

NOTES

POSTER #23

CURRENT STATUS OF HEART TRANSPLANTATION AS THERAPY FOR ADVANCED HEART FAILURE IN AFRICAN AMERICANS

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Background: While therapies to treat advanced congestive heart failure have significantly improved outcomes, little is known about the survival benefit accrued by African American patients (AA) who undergo orthotopic heart transplantation (OHTx). Therefore, we evaluated pre-transplant patient characteristics and post-transplant survival of AA patients compared to other groups using registry data.

Methods: We evaluated heart transplant waiting list characteristics including ethnicity, status at time of transplant, diagnosis at listing, median waiting time, insurance status, as well as 30-day, one- and three-year survival from the Organ Procurement and Transplantation Network (OPTN) database for listings and transplants between 1995 and 2005.

Results: Between 1995 and 2005, 38,076 patients were listed for transplantation (75% Caucasian, 15% African American, 7% Hispanic, 2% Asian). During the same time period, 24,198 OHTx were performed. AA waiting list candidates and transplant recipients were more likely to have a diagnosis of dilated cardiomyopathy; AA candidates were more likely to be status 1A (most urgent status) at listing; and AA candidates were less likely to have had prior cardiac surgery. AA patients were less likely to have private insurance and more likely to have Medicare or some other form of public assistance. Left ventricular assist device (LVAD) utilization, waiting list mortality, and probability of receiving a transplant were similar between ethnic groups. Post-transplant survival at 30 days was similar between groups; however, AA patients had significantly worse survival at 1 year (83.5% vs. 86.1%, $p=0.03$) and 3 years (72.0% vs. 79.6%, $p<.0001$).

Conclusions: AA patients are more likely to be listed at and transplanted from more urgent status than other groups. While early outcomes are similar, intermediate post-transplant outcomes in AA patients are worse relative to other groups. The reasons underlying these disparities are unknown; further study is needed to determine the degree to which other factors (i.e., donor recipient ethnicity mismatch, insurance/payor status, severity of pre-transplant co-morbid conditions) may influence pre-transplant management decisions and post-transplant care.

NOTES

POSTER #24

ACETAMINOPHEN TOXICITY AFTER LIVER TRANSPLANT

B Kelly, K Mukherjee. Vanderbilt University

Background: The natural history of acetaminophen toxicity has been well described in patients presenting with acute liver failure prior to liver transplant. Acetaminophen toxicity after liver transplant leading to acute liver failure, however, has not been characterized. Herein, we describe the clinical course of a patient who underwent an uneventful liver transplant and later presented in fulminant liver failure secondary to excessive acetaminophen ingestion.

Case Presentation: The patient was a 56-year-old male with end-stage liver disease secondary to ethanol abuse. His comorbidities included type II diabetes mellitus, hypertension, depression, and seizures secondary to ethanol withdrawal. His MELD score at the time of transplant was 19. The patient underwent an uneventful orthotopic liver transplant. The organ donor was a teenager who suffered a closed head injury in an automobile accident. An uneventful multivisceral organ recovery was performed using a donation after cardiac death protocol; cold ischemic time was 5 hours. The patient's liver and renal function laboratory studies had normalized by postoperative day #6 and he was discharged home. He returned to our outpatient clinic on postoperative day #8, and demonstrated continued improvement. On postoperative day #9, the patient reported low-grade fever and malaise that continued through the next day. His fevers improved after self-medication with over 2000 mg of acetaminophen. The patient presented to an outside clinic on postoperative day #11 and was found to be somnolent, hypotensive, and hypoglycemic. His liver function tests were elevated to an AST of 4000, an ALT of 2500, a total bilirubin of 7.0, and an INR of 4.0. After emergent transfer to our facility, the patient underwent CT angiography that indicated patent hepatic vasculature. A transjugular liver biopsy was performed demonstrating extensive coagulative necrosis consistent with acetaminophen toxicity. Three days after discontinuing ingestion, his acetaminophen level was still 9.9 µg/mL. The patient was re-listed as a status 1A recipient and supportive ICU therapy including intubation and ultrafiltration was initiated. The patient continued to deteriorate with worsening encephalopathy, hemodynamic instability, acute lung injury, and acute renal failure. No suitable organ became available. On hospital day #10, the patient expired, and an autopsy was declined. On further questioning of the patient's family, he had heavily ingested acetaminophen in various preparations for complaints of incision tenderness and an inability to sleep.

Conclusion: Acetaminophen toxicity is a well-described cause of acute liver failure leading to liver transplantation. Herein we have described the deleterious effects of over-ingestion of acetaminophen during a potentially highly susceptible recovery period post-liver transplant. Patients and care givers should be adequately counseled in the use of acetaminophen products after liver transplant to avoid the potentially fatal outcome that occurred in this patient.

NOTES

POSTER #25

ETHYLENE GLYCOL TOXICITY IN AN ORGAN DONOR

B Kelly, L Rolls. Vanderbilt University Medical Center

Background: Ethylene glycol toxicity is a rare but recognized cause of unremitting metabolic acidosis and central nervous system depression that may culminate in brain death. The clinical presentation and interval to definitive therapy results in calcium oxalate tissue deposition in the intestinal mucosa, liver, brain, heart, lung and kidney that may contra-indicate consideration for multivisceral organ donation. Herein, we report a case of ethylene glycol ingestion where prompt medical treatment did not prevent the progression to brain death, but did result in the successful transplantation of the liver, both kidneys, and the pancreas. Thus, ethylene glycol toxicity is not an absolute contraindication to organ donation and subsequent transplantation.

Case Presentation: A 28-year-old male was admitted to the hospital 7 hours after the ingestion of 270 cc of ethylene glycol. Specific therapy included hemodialysis; however, the patient did not improve and was declared brain dead 47 hours after ingestion. He was referred for organ donation. The liver, kidneys, and pancreas were procured as part of a standard multi-visceral organ recovery. All organs were successfully transplanted. The liver was exported to a center within the region and transplanted with 5 hours of cold ischemic time. The liver recipient was discharged on POD#7. The right kidney was transplanted at a local center with 12 hours of cold ischemic time. The left kidney and pancreas were exported to a transplant center within the region and transplanted with 16 hours of cold ischemia time. After one year of follow-up, all grafts continue to function well.

Conclusions: Ethylene glycol toxicity, due to its presentation and successful clinical management, rarely results in progression to brain death and consideration for organ donation. In this current era of organ disparity, however, all potential organ donors should be considered, and thus it is important to understand the sequelae of ethylene glycol toxicity. Herein we describe an unfortunate victim of ethylene glycol toxicity, who with proper hospital care, progressed to brain death and became an organ donor for three patients. From this experience, ethylene glycol toxicity is NOT an absolute contraindication to solid organ donation and transplantation.

NOTES

POSTER #26

MITOCHONDRIAL MEMBRANE POTENTIAL CAN PREDICT DELAYED GRAFT FUNCTION AFTER RENAL TRANSPLANTATION

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Background: Mitochondria play a critical role in ischemia-reperfusion injury after renal transplantation. Ischemia-reperfusion injury causes depletion of phosphates necessary for energy production via electron chain transportation. Mitochondrial membrane potential (MMP) reflects performance of the electron transport chain, and can indicate a pathologic disorder of the system. Measurement of MMP at an early time after reperfusion may predict renal function following transplantation.

Methods: To determine mitochondrial membrane potential (MMP), isolated mitochondria from kidney biopsies were resuspended (final protein concentration 0.1 µg/ul) in 50 µL of storage buffer. Mitochondria were incubated with 1 µg/ml JC-1 probe (Invitrogen, T-3168) for 10 min at 37^{o}C according to the manufacturer's instruction. The electrical potential across the inner mitochondrial membrane was detected in the Spectrofluorometer (Flexstation II, Molecular Devices Corporation, California) by monitoring of fluorescence of JC-1 at the following fluorescence settings: excitation at 485 nm or at 544 nm and emission at 538 nm or at 590 nm.

Results: We have obtained post-perfusion renal biopsies of 18 adult renal transplant patients and measured the MMP. We segregated our responses into very low (<1.4), low (1.5-2.0) and high (>2.0). Of the 8 patients that had low or very low MMP readings, 4 had delayed graft function necessitating at least two hemodialysis treatments after transplantation. Of the 10 patients that had high MMP readings, only 1 patient developed delayed graft function.

Conclusion: MMP measurements may be useful in determining which renal transplants are destined to develop delayed graft function. In the future, pharmacologic interventions could be utilized that might maximize MMP levels and diminish post-transplant graft dysfunction.

NOTES

POSTER #27

INCIDENCE AND PATTERNS OF PERMANENT PACING FOLLOWING BICAVAL AND BIATRIAL ORTHOTOPIC HEART TRANSPLANTATION

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Background: Over 600 heart transplants have been performed at our institution since 1978. Before 2001, the standard biatrial technique was employed almost exclusively for all cases. After 2001, the bicaval technique was introduced. Differences in postoperative pacing requirements were studied between both groups of transplant patients.

Objective: The etiology of postoperative heart block in cardiac transplant patients remains uncertain. We studied the incidence and patterns of permanent pacemaker (PM) insertion in 217 consecutive cardiac transplant recipients beyond 2001.

Methods: Prospective systematic review of all orthotopic heart transplant cases from January 1, 2001 to October 31, 2007 was done. Data was collected from 217 consecutive patients, and the incidence of postoperative need for permanent pacing devices was determined.

Results: The standard biatrial technique (Group I) was used in 144 patients, and the bicaval technique (Group II) was used in 73 patients. In Group I, 18 of 144, (12.5%) required permanent pacing within the first postoperative month, while in Group II, 5 of 73 (6.8%) required permanent pacing. The incidence of permanent pacing was also studied beyond the first postoperative month. In Group I, 3.4% required permanent pacing beyond the first month up to the 5th postoperative year, vs. only 1.3% in Group II.

	Total	Patients with Pacemaker 1st month post-op	Patients with Pacemaker 1 month-to-5 years post-op
Group I	144	18 (12.5%)	5 (3.4%)
Group II	73	5 (6.8%)	1 (1.3%)
P value*		p=0.20	p=0.33
* Calculated using chi-square test with Yates' correction			

Conclusions: The standard biatrial technique was associated with a higher incidence of atrioventricular conduction abnormalities, with consequent need for permanent pacing compared with the bicaval group. In both groups, it was observed that the need for permanent pacing was highest within the first postoperative month. The bicaval technique may be superior to the biatrial technique to decrease the incidence of atrioventricular conduction dysfunction and in preventing the need for short term and long term permanent pacing in orthotopic heart transplantation.

NOTES

POSTER #28

AN EFFECTIVE TOOL TO PROMOTE/INCREASE ORGAN DONOR'S REGISTRY REGISTRATION RATES: A CULTURALLY COMPETENT EDUCATIONAL OUTREACH PROGRAM IN THE MINORITY COMMUNITY: USING THE VENUES OF COMMUNITY BUREAU OF MOTOR VEHICLES (BMV)

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Cleveland Clinic and LifeBanc

Background: The multiplicity of the United States' population is one of society's greatest assets, but the richness of this feature is many times overshadowed by the disproportionate burden of disease and illness that exists in some of America's racial and ethnic minority populations. Compelling evidence of the disparate health status minority populations is documented in the form of shorter life expectancies, higher rates of cancer, birth defects, infant mortality, asthma, diabetes, and cardio-vascular disease, as well as a plethora of other diseases that necessitate organ transplantation. These circumstances, however, can be alleviated with the public disclosure to the necessary life-saving awareness and practice of organ transplantation. In this particular research circumstance we have concentrated our focus on improving some of the particular limitations of organ transplantation. The development of a very "unique" collaborative outreach curriculum that increases organ donation awareness, education, willingness, and most notably "on site registries/ issuance" has occurred at specific Ohio Bureau of Motor Vehicles Deputy Registrar License Agencies® (BMV or DVM).

Methodology and Interventions: We have used a practical outreach approach with selective aspects of cultural competency which in this analysis indicates "how well minority's culture has the ability to strongly influence the amount and type of culturally sensitive communication between individuals and attitudes" (i.e., doctor-patient relationship). This outreach contest was strategically targeted towards 28 Northeastern Ohio's BMVs between March 1st 2007 to June 30th, 2007 to promote, encourage, and assist in an outreach educational programs regarding organ donation and registry/issuance.

Results: The overall consequence of the "OutReach Organ Donation Registry Contest" and collaborative has resulted in a mean increase of 3.425% in all the functional BMVs. One particular BMV, being a pre-dominantly minority attended BMV, won 1st place for the number of donations registries: ([*6.425%, $p < 0.05$] Wade Park in Cleveland, Ohio © 2007).

Conclusions: To maintain these organ donor registry increases in awareness, education, promotion and issuance, we will continue in the construction of these vital programs of outreach along with proper incentive for encouragements (i.e. "BMV contest"). In addition, it is practical to maintain and elaborate on as many culturally sensitive programs as possible, to assist health care providers, medical facilitators, physicians, nurses, community personnel and students in promotional donor programs that reach such a suitable population at the nation's Bureau of Motor Vehicles © 2007.

NOTES

POSTER #29

RACIAL DISPARITIES IN OUTCOMES AFTER TRAUMA: ANALYSIS OF THE NATIONAL TRAUMA DATABANK

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Introduction: Minorities have been reported to have worse outcomes than Whites in many diseases, including cancer and cardiovascular diseases. There is little available data evaluating outcomes amongst minorities, including Hispanics (H) and African Americans (AA), compared to Whites (W) after trauma.

Methods: Data was extracted from the National Trauma Databank, version 5 (1994-2004). We included all trauma patients with an injury severity score (ISS)>15 and age>55. Outcomes included mortality and hospital length of stay (LOS).

Results: A total of 42,113 patients matched these criteria and were included for analysis. The large majority were W (75.2%), followed by AA (7.2%), H (4.7%), and others (12.9%). The mean ISS was similar for all groups (23.7, 24.2, 24.6 respectively, P=NS). Mortality rate was similar for W and AA (24%), but significantly higher for H (28.4%, P<0.001). Blunt trauma was more frequent in W and H (96%) when compared to AA (90.1%, P<0.001). Whites were older than H and AA (71 vs. 67 and 67, respectively, P<0.001). Hospital LOS was higher for H (11.7 days) when compared to AA (10.5 days) and W (9.8 days), P=NS. A logistic regression model (including race, age and ISS) revealed that Hispanics had 1.5 times greater chance of mortality when compared to W (CI: 1.3-1.8, P<0.001). A difference between AA and W was not detected by the model.

Conclusions: Significant racial disparities exist in severely injured trauma patients, especially among Hispanics. Further research is warranted to uncover the reasons of our findings and ways to eliminate these disparities in trauma outcomes.

NOTES

POSTER #30

PERIPHERAL ARTERIAL CATHETERIZATION IN THE INTENSIVE CARE SETTING: IS A TEMPORAL FACTOR ALONE AN INDICATION FOR DISCONTINUATION?

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Introduction: Better care techniques in association with new catheters for peripheral arterial catheterization (PAC) question the traditional practice of removing arterial lines after 72 hours. The purpose of our study was to evaluate the complications associated with prolonged use of PAC, with particular emphasis on distal ischemia.

Methods: We conducted a retrospective 18-month review of all patients requiring PAC while in our medical/surgical intensive care units. Our study comprised all patients who had an arterial line for a period greater than 72 hours.

Results: A total of 385 cases were reviewed. Thirty-seven percent (143) of these cases met our inclusion criteria, recognizing only the patients with indwelling arterial catheters in place greater than 72 hours. The average length of PAC in this group was 8.27 days (range 4-34 days). The admitting diagnoses included patients with sepsis, trauma, neoplasms, and/or end organ compromise (i.e., cardiovascular, respiratory, neurologic, etc.). During this time, over 40% (58) of the patients were on pressors (i.e., phenylephrine, dopamine, etc.) and less than 3% (4) were on anticoagulation drips (i.e., heparin). All patients were seen daily in the ICU as well as on the medical/surgical wards until discharge. From the inclusion group, only two patients (1.39%) were found to have long-term complications — permanent distal ischemia. One patient, while on pressor support, had distal ischemia on arterial line day 6. The other patient, without the adjunct of pressors, was found to have distal ischemia on day 8. The rate of ischemia in the pressor versus non-pressor subgroup was 1.1% to 1.7%, respectively.

Conclusion: The duration of cannulation is an important factor in regard to arterial occlusion. Prior studies report a higher incidence of occlusion when cannulation surpasses the 48-72 hour time frame. Despite historical references, our study indicates that prolonged arterial cannulation may be acceptable with minimal long-term complications.

NOTES

POSTER #31

VIOLENT RECIDIVISM CAN BE REDUCED

C Cooper. University of Maryland

Background: We previously published the first randomized prospective study of a hospital-based violence intervention program (VIP). It revealed that a hospital-based violence intervention program is an effective means of reducing violence-related trauma recidivism. Our initial study evaluated only repeat victims of violence. We subsequently instituted the program for all victims of violence, hypothesizing that VIP can result in a reduction in violent recidivism at our level I Trauma Center. To determine if the recidivism rate changed, we conducted a data review of all patients admitted with violence-related trauma from 2000 through 2007. In 2001, we completed our recidivism study and restructured our program so that we see every patient admitted to our hospital because of a violent act including first-time victims.

Methods: Data from the trauma center registry data from 2000 through 2007 was reviewed by zip code and injury type.

Results: An evaluation of first-time victims of violence reveal an overall increase in the number of admissions from 2000 through 2007. The violent recidivism rate of patients outside of Baltimore and consequently not eligible for VIP remained fairly constant, with a slight downward trend. However, evaluation of the violent recidivism rate of patients from the two most common zip codes of our clients eligible for VIP (21201 and 21217) reveals a significant downward trend.

Conclusion: This is the first study to show that a hospital-based violence intervention program can reduce the violent recidivism rate at a Level I Trauma Center.

NOTES

POSTER #32

HYBRID PROCEDURE THAT COMBINES OPEN AND ENDOVASCULAR APPROACH AS AN ALTERNATIVE TECHNIQUE TO EFFECTIVELY DEBRANCH THE AORTIC ARCH IN DISSECTIONS

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Background: Hybrid repairs of Type A aortic dissections are not currently considered the treatment of choice, primarily because the long-term durability of these repairs remains uncertain. Conventional open repair of dissections involving the arch is complex and is associated with significant morbidity and mortality. We present our experience of hybrid open and endovascular treatment of Type A aortic dissections.

Methods: Aortic dissection was treated with a combined endovascular and open surgical approach. The patient received revascularization of the innominate artery and the left common carotid artery using a "Y" graft with 10 mm and 8 mm limbs fashioned between the proximal aorta and the neck vessels. The left subclavian artery was oversewn due to extensive dissection. Dissection aneurysmal exclusion was then performed by stent-graft deployment under the guidance of an IVUS catheter.

Results: The patient had a successful outcome and was discharged home 7 days after the operation. Postoperative studies revealed the patency of the "Y" graft and the endostent properly seated distally with no evidence of endoleak or graft migration. The patient will remain on an antiplatelet agent for 6 months. CTA scans will be obtained at 3 months, 6 months and then yearly, barring any aneurysm expansion, endoleak, or device migration.

Conclusion: Endovascular stenting, although not considered the treatment of choice, is an attractive alternative to open repair in patients with conditions that increase the risk of mortality and morbidity from open repair. Hybrid procedures that combine open and endovascular techniques can be used to effectively debranch the arch and thus allow these vessels to be covered by the stent graft.

NOTES

POSTER #33

RISK FACTORS FOR DEEP VENOUS THROMBOSIS FOLLOWING MODERATE AND SEVERELY BRAIN INJURY

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Wright State University

Background: Trauma patients possess a high risk of developing deep venous thrombosis (DVT); thus the need for surveillance and prophylaxis. Head injured patients pose a challenge due to limitations in the use of anticoagulant prophylaxis. We sought to identify the incidence of DVT in moderately to severely head injured patients and recognize potential risk factors.

Patients & Methods: Over a 6-year period, all brain injured patients with admission Glasgow Coma score $\leq$13 and hospital stay $\geq$7 days admitted to a Level I trauma center were identified. Demographic data and lower extremity venous duplex scan results were obtained. DVT prophylaxis with Sequential Compression Devices was routinely used during the study period. Anticoagulation with low molecular weight heparin was not used.

Results: A total of 939 patients met inclusion criteria. Duplex scans were performed in only 677 patients who are the basis of this analysis. Of this total, 32% had isolated brain injuries, while 68% had brain and extracranial injuries. There was an overall DVT rate of 32%. In patients with isolated brain injuries, 26% had DVT compared with 34% of patients with combined head and extracranial injuries (and is statistically significant, p=.026). Independent predictors for DVT identified by multiple logistic regression included male gender (p=.006), age > 55 years (p<.001), ISS > 15 (p=.014), subarachnoid hemorrhage (p=.006) and lower extremity injury (p=.001).

Conclusion: DVTs are present in a third of all moderately to severely head injured patients. Isolated head injuries have a lower incidence. Older age, male gender, higher ISS scores and the presence of a lower extremity injury are strong predictors for the likelihood of developing a DVT. The use of prophylactic IVC filters should be strongly considered in head injured patients with these risk factors.

NOTES

POSTER #34

DELAYED/MISSED INJURY: IMPACT ON OUTCOME

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Introduction: Delayed diagnoses of injuries and missed injuries have been shown to occur in 0-57.6% of patients. The negative impact on survival of such injuries varies from 0 to 23%. As prompt diagnosis and proper management have been shown to impact patient outcome, avoidance of such errors is essential to provide optimal patient care. The purpose of our study was to evaluate the incidence and type of missed and delayed injuries in our institution and determine the impact on patient outcome.

Methods: Permission was obtained from the Institutional Review Board to review patients in the trauma database from January 1, 2000 to May 30, 2007. Factors evaluated included trauma code status, intubation status, average length of stay, the total number of patients with delayed/missed injuries, and the percentage of delayed/missed diagnoses in the trauma code population versus the non-code population. The hospitals were arbitrarily designated as hospital A and Hospital B. Both hospitals are level 2 trauma centers. There was more surgical resident involvement with trauma care at hospital B than Hospital A.

Results: There were 5945 total trauma patients from Hospital A and 4264 total trauma patients from hospital B. At hospital A, the average annual percentage of delayed/missed injuries among the trauma code patient was 1.9% (range 0-4.6), whereas in the non-code trauma patients it was 0.77 (range 0.34-1). Chi-square analysis, revealed a statistical significance, p=0.009. At Hospital B, the average annual percentage of delayed/missed injuries among the trauma code population was 4.99 (range 1.38-7.4), whereas in the non-code trauma population it was 2.34 (range 0.28-7.1). Again, chi square analysis revealed a statistical significance between both groups, p=0.001.

Being intubated or comatose at time of admission did not significantly impact the incidence of delayed/missed diagnosis of injury at either hospital. Hospital B was found to have a higher percentage of delayed/missed injuries (one way ANOVA, p 0.031). Extremity injuries were the most common missed/delayed diagnosis. No deaths or significant comorbidities were attributed to the delayed/missed diagnoses.

Conclusions: The incidence of delayed diagnosis is higher in the trauma code population than the non-code population. The incidence of delayed diagnosis tended to be greater in patients that are intubated or in coma (GCS < 8), although this did not achieve statistical significance. No significant comorbidities or deaths were attributed to the missed/delayed diagnoses. Institutional reviews of this type are essential to ensure optimal patient care.

Results–Delayed/Missed Injuries–Hospital A

	2000	2001	2002	2003	2004	2005	2006	2007 (1st half)
Total Traumas	867	681	750	762	878	811	876	320
Trauma Codes (%)	32	42.5	46	36	33.5	44.5	51.6	45.3
Coma on admit (%)	8.4	11.2	9.7	11.2	9.5	12.2	3.1	7.8
Intubated on admit (%)	7.6	10.3	9.1	8.8	8.4	10	5.6	8.4
Delay range (days)	1-40	1-17	1-53	2-31	9-139	2-21	1-23	1-23
Average delay (days)	7.6	3.9	8.9	6.6	74	7	9.6	11.3
Average length of stay (days)	15.5	8.9	13.6	13	11	14.3	19.25	26.7
Delayed Dx in Trauma Code population (%)	4	1.4	2	1.1	0	4.2	4.6	2.9
Delayed Dx in Non-code Trauma population (%)	1	1	0.75	1.0	0.34	0.66	0.7	0
Total # of pts w/ DDI	16	9	10	8	2	18	24	3

Results–Delayed/Missed Injuries–Hospital B								
	2000	2001	2002	2003	2004	2005	2006	2007 (1st half)
Total Traumas	573	562	530	611	543	644	647	154
Trauma Codes (%)	50	69	76	55	47	46	44	41
Coma on admit (%)	3.0	3.2	3.2	2.1	3.7	3.6	2.9	3.8
Intubated on admit (%)	3.0	3.2	5.1	2.9	5.7	4.5	4.6	3.2
Delay range (days)	0-13	0-15	0-9	0-5	0-4	0-4	1-7	6-10
Average delay (days)	3	3	1.75	1.77	1.47	1.6	3	8
Average length of stay (days)	8.8	6.8	7.7	6.07	6	12.7	13	6
Delayed Dx in Trauma Code population (%)	4	7.4	6.5	7.14	5.49	3.02	1.38	1.59
Delayed Dx in Non-code Trauma population (%)	3.6	3	7.1	1.45	0.69	0.29	0.28	1.10
Total # of pts w/ DDI	22	29	35	23	16	10	5	2

Is there a difference between Hospital A and Hospital B in terms of percentage of patients with DDI? Yes; Hospital B has a higher percentage. [One-way ANOVA; F (1, 14) = 5.74, p = .031]

Between-Subjects Factors

		Value Label	N
HOSP Hospital	1	Hospital A	8
	2	Hospital B	8

Descriptive Statistics

Dependent Variable: DDI % of Pts. with DDI

HOSP Hospital	Mean	Std. Deviation	N
1 Hospital A	1.4225	.78618	8
2 Hospital B	3.2500	2.00998	8
Total	2.3363	1.75053	16

Levene's Test of Equality of Error Variances[a]

Dependent Variable: DDI % of Pts. with DDI

F	df1	df2	Sig.
6.009	1	14	.028

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept+HOSP

Tests of Between-Subjects Effects

Dependent Variable: DDI % of Pts. with DDI

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	13.359[a]	1	13.359	5.736	.031	.291	.606
Intercept	87.329	1	87.329	37.496	.000	.728	1.000
HOSP	13.359	1	13.359	5.736	.031	.291	.606
Error	32.607	14	2.329				
Total	133.296	16					
Corrected Total	45.966	15					

a. Computed using alpha = .05

b. R Squared = .291 (Adjusted R Squared = .240)

Delayed/Missed Injuries-Deaths-Hospital A						
	2000	2001	2002	2005	2006	2007
Total# Pts	867	681	750	811	876	320
Total deaths	23	31	32	38	26	12
Pts with DDI	16	9	10	18	24	3
Death among pts with DDI	0	0	0	1 (death not related)	1 (death not related)	0

Delayed/Missed Injuries-Deaths-Hospital B								
	2000	2001	2002	2003	2004	2005	2006	2007
Total# Pts	573	562	530	611	543	644	647	154
Total deaths	14	17	10	8	14	8	18	1
Pts with DDI	22	29	35	28	16	10	5	2
Death among pts with DDI	0	1 (death not related)	0	2 (deaths not related)	1 (death not related)	0	0	0

Delayed/Missed Injuries-Injury Severity Scores-Hospital A vs Hospital B								
	2000	2001	2002	2003	2004	2005	2006	2007 (1st 1/4)
Pts with DDI-ISS Range-Hospital A	2-41	5-29	5-29	9-38	9-18	5-45	4-35	12-29
Pts with DDI-ISS Range-Hospital B	4-34	4-33	2-54	1-33	4-38	5-36	9-24	10-24
Pts with DDI-Average ISS-Hospital A	18	15	12	23	14	20	16	20
Pts with DDI-Average ISS-Hospital B	15.32	12.66	15.97	13.79	14.0	20.3	18.8	17

POSTER #35

SEVERITY OF HEAD CT SCAN FINDINGS FAIL TO EXPLAIN RACIAL DIFFERENCES IN MORTALITY FOLLOWING CHILD ABUSE

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Introduction: It is unclear why there are marked disparities in racially-based mortality rates following child abuse. Differences in structural severity of traumatic brain injuries is one hypothesis. The purpose of this study was to determine if differential findings by head CT scan could explain the previously observed differential outcome by race.

Methods: The trauma registry at our Level 1 Pediatric Trauma Center was queried to identify all abuse patients with an injury severity score (ISS) $\geq$ 15 who had a head CT performed. The initial head CT scans of these patients were reviewed with a neuroradiololgist and each scan was graded from 1-4 (normal to severe). Statistical analysis was performed to asses the correlation between race, head CT grade, and mortality.

Results: One hundred and sixty four patients met inclusion criteria. Overall mortality was 17%, 11% for white children, 32% for African-American (AA) children, and 11% for others ($p<0.05$). In review of the head CT scans, there was no difference by race in types of injuries or head CT grade (average 2.5). Over 75% of all deaths had a head CT grade of 3 or 4. The mortality rate for white children with a grade 3 or 4 scan was 25% compared to 53% for AA children ($p<0.05$). Utilizing a multi-variate regression model, AA race remains an independent risk factor for mortality with an odd ratio of 4.3 (95% CI, 1.6, 11.5).

Conclusion: In our cohort, African-American children had a significantly higher mortality rate despite similar findings on initial head CT scans. These findings further support the need to look beyond the severity of injury as the etiology for observed disparities in traumatic brain injury outcomes.

NOTES

POSTER #36

IMPROVING ANTIBIOTIC DE-ESCALATION PRACTICES FOR VENTILATOR-ASSOCIATED PNEUMONIA IN THE SURGICAL INTENSIVE CARE UNIT

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Background: Ventilator-associated pneumonia (VAP) is one of the most common indications for antibiotic therapy in the intensive care unit. Without a "gold-standard" test for VAP, broad-spectrum antibiotics are often given to patients unnecessarily. As overuse of antibiotics can lead to resistant infections, increased cost, and worse patient outcomes, interventions to reduce the use of unnecessary antibiotics in intensive care units are critical. De-escalation therapy is a strategy that strives to limit the use of unnecessarily broad-spectrum antibiotics and shorten the duration of therapy in patients with suspected VAP. The strategy encourages the tailoring of antibiotic therapy to microbiological data and the discontinuation of antibiotics in low-risk patients after an initial observation period.

Objective: We have begun the observational phase of a study designed to improve antibiotic de-escalation practices in four surgical intensive care units at our institution. We plan to: 1) Measure baseline adherence to recommended antibiotic de-escalation practices in patients with suspected VAP; 2) Design and deploy an antibiotic de-escalation "advisory service;" and 3) Measure de-escalation practices after implementation of the service.

Hypothesis: Clinicians are reluctant to narrow antibiotic coverage in patients being treated for suspected VAP despite microbiological data suggesting it is safe. Clinicians also fail to stop antibiotics in patients unlikely to have true infection.

Methods: Four surgical intensive care units (general, trauma/burns, neurological, and cardiac surgery) are screened daily for patients beginning treatment for suspected VAP. Patients meeting inclusion criteria have the following data collected on days #1 and #3: Clinical Pulmonary Infection Score (CPIS), antibiotics administered for VAP, and gram stain and culture results from sputum specimens. Patients are followed prospectively to see if antibiotic coverage is narrowed based on microbiological results, and if antibiotics are stopped in patients at low-risk of true VAP (CPIS <6).

Results: To date we have collected data over two months and identified 25 patients meeting inclusion criteria. In only 13 of 25 (52%) episodes of suspected VAP were antibiotics tailored correctly to sputum culture results. As for patients with low risk of true pneumonia (patients with CPIS scores <6 on day #1 and day #3), in only 3 of 16 (19%) episodes were antibiotics discontinued after three days of treatment.

Conclusions: The rate of appropriate antibiotic de-escalation therapy for suspected VAP in surgical intensive care units is poor. Antibiotics are often not tailored to microbiological data and are continued unnecessarily in low-risk patients. Interventions directed at improving antibiotic de-escalation practices need to be studied.

NOTES

POSTER #37

CURRENT EVALUATION OF THE CLINICAL EFFECTIVENESS OF INHALED NITRIC OXIDE IN CARDIAC SURGERY: IS THERE A BENEFICIAL ROLE?

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L Kistler, P Theiss, S Hughey, RSD Higgins.
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and Rush University Medical Center

Introduction: Inhaled nitric oxide (iNO) has been used to empirically treat patients with respiratory distress, pulmonary hypertension, and right ventricular dysfunction. We evaluated the clinical effectiveness of iNO in our cardiac surgery practice to determine potential benefits.

Methods: Retrospective chart reviews were done on adult cardiac patients who received perioperative iNO treatment from 2005 to 2007 (n=20). Cardiac procedures included: CABG (n=2), CABG & Valve Replace/Repair (n=1), CABG & Other (n=3), Valve Replace/Repair (n=7), Other (n=4), Valve Replace/Repair & Other (n=3). Statistical analyses using the Mann-Whitney test were performed to assess differences that contributed to observed outcomes, with statistical significance achieved at $p<0.05$.

Results: Hemodynamics of patients receiving iNO therapy were compared before and after NO therapy (Table 1a and 1b). Cardiac output increased by 47.05% (4.57 L/min before iNO; 6.72 L/min after) and cardiac index increased by 43.28% (2.38 L/min/m^2 before, 3.41 L/min/m^2 after) with significant differences detected between before and after results. Although there was a 17.23% increase in systolic pulmonary blood pressure after iNO therapy (47.60 mmHg before; 55.80 mmHg after), there were no significant differences in peak pulmonary pressures after iNO therapy. 70% (14/20) patients survived after a mean of 5.85 hrs of support. Non-survivors were supported for 2.83 hrs (mean). The most common causes of death in patients treated with NO were multi-organ failure, sepsis, acidosis, and congestive heart failure.

Conclusions: Nitric oxide therapy in the cardiac surgery patient may provide significant hemodynamic improvements. However, given the severity and acuity of illness in patients requiring this extraordinary support, hemodynamic improvements alone may not favorably impact outcome and mortality. iNO therapy remains an important adjunct in the acutely ill cardiac patient, and its application should be reserved for patients with profound secondary pulmonary hypertension and primary cardiogenic shock.

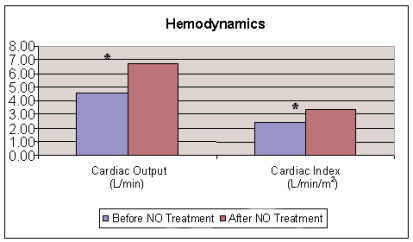

Table 1a. Hemodynamics within NO treatment group (*statistical significance at $p<.05$).

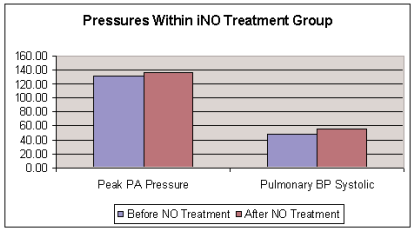

Table 1b. Pressures within NO treatment group.

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POSTER #38

DEVELOPING A SUCCESSFUL VTE RISK ASSESSMENT PROCEDURE: ONE HOSPITAL'S STRATEGY

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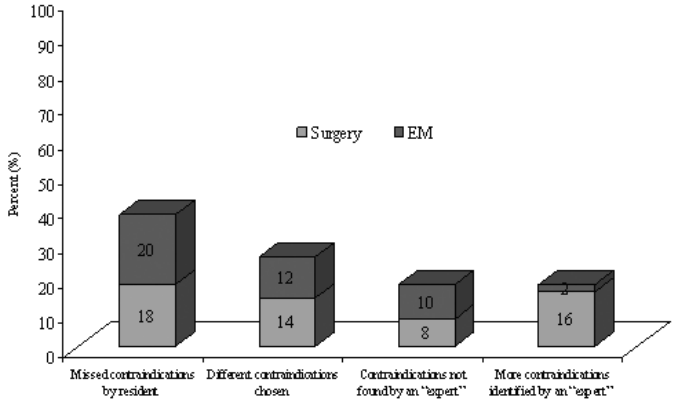
Introduction: In 2006, the Joint Commission and the National Quality Forum published the National Consensus Standards for Prevention and Care of Venous Thromboembolism. The standards included a provision that all hospitals conduct VTE Risk Assessment within 24 hours of hospital admission and/or transfer to an intensive care unit (ICU). The Critical Care Committee (CCC) of Stroger Cook County Hospital (SCCH) developed a pilot program for its ICU's. The purpose of this study is to describe the development/ implementation of this program and the problems encountered during the process.

Materials and Methods: The CCC developed a computer-based VTE Risk Assessment form in March 2007. From April through December 2007, 204 patients admitted to the Trauma ICU at SCCH were evaluated prospectively with regard to VTE risk assessment. Each patient had the computer form completed by his/her primary resident; simultaneously, an identical paper form was completed by a single "expert" attending who was blinded to the resident form. The forms were then compared with regard to assessment of VTE risk (low, moderate, high, highest) and how accurately the resident identified contraindications to chemical and/or mechanical VTE prophylaxis relative to the attending assessment. Other data collected included time from admission to completion of the form, time to initiation of prophylaxis, and resident specialty (Surgery, Emergency Medicine (EM). Educational programs outlining VTE risk assessment and a tutorial specific to the form were presented prior to the initiation of the protocol and at regular intervals during implementation.

Results: Of 204 patients evaluated, 195 were included in the study. The median age was 33±17.7; 91.8% were male. Mechanisms of injury were: GSW 33.9%, MVC 26.2%, Fall 13.3%, MBT 9.2%, BHT 8.2%, Stab wound 4.6%, and other 4.6%. The computer-based VTE form was completed in 93.8% of included patients; 59% were completed within 24 hours of admission, 17% within 24-48 hours, and 24.1% after 48 hours. There were no significant differences between resident specialties with regard to time of form completion. Risk stratification breakdown was: highest risk 89.6%; high risk 3.3%; moderate risk 3.3%; and low risk 3.8%. Resident assessments did not match the "expert" assessment in 9.3% of patients (6.6% EM residents, 2.7% Surgery residents). Mismatch was observed in 27.3% of contraindication assessments (12% EM residents, 15.3% Surgery residents). The most common areas of disagreement in risk stratification/contraindication assessment are shown in Figure 1. EM residents had an increased trend towards missing intracranial process and coagulopathy as contraindications. Surgery residents had an increased trend toward missing solid organ injuries. Appropriate prophylaxis was initiated within 24 hours for 27.2% of patients; within 24-48 hours for 13.8% of patients, and more than 48 hours in 25.1% of patients. Chemical prophylaxis was contraindicated in 27.3% of patients; 6.8% of patients received neither chemical nor mechanical prophylaxis.

Conclusions: The implementation of the VTE risk assessment protocol was largely successful as measured by form completion. However, several issues potentially impacting care were identified. Based on the results of the study, additional educational programs are planned for the residents regarding contraindications to chemical prophylaxis.

Figure 1. Risk/Assessment Contraindications



Notes

Constitution

Constitution of the Society of Black Academic Surgeons

ARTICLE I: Designation

The name of the organization shall be the Society of Black Academic Surgeons (SBAS). It shall be incorporated as a non-profit organization and have no capital stock or shareholders. The address of the President will be the official address of the Society.

ARTICLE II: Objective

The paramount objectives of the Society of Black Academic Surgeons shall be supportive of and consistent with the enhancement of the academic surgical community both nationally and internationally. The specific objectives are as follows:

A. Identify and promote professional and intellectual exchange among surgeons and scientists involved in their related fields.

B. Promote the participation of minority surgeons and scientists in the activities of all academic surgical organizations.

C. Stimulate and assist government, private industry and voluntary organizations to develop and promote programs to increase the participation of minority surgeons in the academic community.

D. Encourage and assist minority surgeons to conduct original research in both the basic and clinical sciences.

E. Support and strengthen the surgical section programs of the National Medical Association.

ARTICLE III: Members

Active members will be designated as Fellows of the Society of Black Academic Surgeons and will be comprised of reputable surgeons. All Fellows will be elected to membership according to the Constitution and Bylaws. Termination of a member by resignation, death, or any other manner will end all rights and privileges in the Society. None of the assets or privileges will be transferable to any representative of a member's estate.

ARTICLE IV: Officers/Council

The Officers of the Society shall be President, President-Elect, Secretary and Treasurer. The President and President-Elect shall be elected for a one-year term; the President-Elect shall automatically become President. The Secretary and the Treasurer shall be elected for three-year terms. This slate of officers, along with two Fellows (appointed by the President) will be designated as the Executive Council.

ARTICLE V: Organization Structure

A. The Society's organizational structure will consist of General Membership, Officers, Executive Council, and Standing Committees. The span of authority, rights and privileges shall be based on the Constitution and Bylaws.

B. The duties, powers and regulations governing the Society's organizational structure shall be defined and delineated in the Society's Bylaws.

ARTICLE VI: Meetings

A. The Society shall hold an annual scientific and business meeting, the time and place determined by the Executive Council at least two years in advance of the meeting. Only members of the Society may attend the business meeting.

ARTICLE VII: Rules

The conduct of all Society meetings including those of the Executive Council shall be governed by the Bylaws of the Society and Robert's Rules of Order.

ARTICLE VIII: Governance

Section 1 The Society shall be governed by this Constitution and Bylaws, the latter document to provide specific direction for the organization, administration and services of the Society.

CONSTITUTION OF THE SOCIETY OF BLACK ACADEMIC SURGEONS

(CONTINUED)

Section 2 The Society's Constitution and Bylaws shall be consistent with provisions and content of any organizational charter or certificate of incorporation the Society may propose and/or execute.

ARTICLE IX: Certificate of Incorporation

Section 1 The Society may propose and execute an organizational charter or certificate of incorporation in accordance with all local, state and federal (U.S.) regulations, codes and laws.

Section 2 The certificate of incorporation shall not vitiate any provision of this Constitution or the Society's Bylaws, unless a court of competent jurisdiction expressly rules, orders or directs otherwise. If any such provision or the certificate, in whole or part, is held to be unlawful, only the unlawful provision or certificate will be null and void. The remaining provisions and/or certificate, in whole or part, will continue in effect as valid.

Section 3 The certificate of incorporation shall not govern the application and administration of the Constitution or the Society's Bylaws.

Section 4 Notwithstanding any other provisions of these articles, the organization is organized exclusively for one or more of the purposes as specified in Section 501C (3) of the Internal Revenue Code of 1954, and shall not carry on any activities not permitted to be carried on by an organization exempt from Federal income tax under IRC 501C(3) or corresponding provisions of any subsequent Federal tax laws.

Section 5 No part of the net earnings of the organization shall inure to the benefit of a member or any private individual (except that reasonable compensation may be paid for services rendered to or for the organization), and no member of the organization or any private individual shall be entitled to share in the distribution of any of the organization's assets on dissolution of the organization.

Section 6 No substantial part of the activities of the organization shall be carrying on propaganda, or otherwise attempting to influence legislation (except as otherwise provided by IRC 501C(h) and does not participate in, or intervene in (including the publication or distribution of statements), and political campaign on behalf of any candidate for public office.

Section 7 In the event of dissolution, all of the remaining assets and property of the organization shall after payment of necessary expenses thereof be distributed to such organizations as shall qualify under section 501(c)(3) of the Internal Revenue Code of 1986 and approved by the Executive Committee.

Section 8 In any taxable year in which the corporation is a private foundation as described in IRC 509(a), the organization shall distribute its income for said period at such time and manner as not to subject it to tax under IRC 4942, and the organization shall not (a) engage in any act of self-dealing as defined in IRC 4941(d), retain any excess business holdings as defined in IRC 4943(c), (b) make any investments in such a manner as to subject the organization to tax under IRC 4944, or C, make any taxable expenditures as defined in IRC 4945(d) or corresponding provisions of any subsequent Federal tax laws.

ARTICLE X: Funds and Expense

Funds for the Society may be raised by approved dues and/or in any manner approved initially by the Executive Committee and the organization. Funds may be appropriated by the Executive Council to

CONSTITUTION OF THE SOCIETY OF BLACK ACADEMIC SURGEONS

(CONTINUED)

defray the expense of the Society to carry out the necessary functions, and for any other purpose approved by the Council; provided, however, that no funds or assets shall be used to inappropriately benefit one member of the unit.

ARTICLE XI: Amendments

This Society, at any annual business meeting of the Fellows, may amend any Article of this Constitution by a two-thirds majority of the Fellows present, provided that a copy of the proposed Amendment has been furnished to each active Fellow at least thirty days in advance of the meeting.

ARTICLE XII: Effective Date

These revised Bylaws shall take effect immediately upon acceptance by a simple majority of the membership and extend indefinitely, subject to alteration, amendment or repeal in whole or part, as specifically provided in the Constitution.

BYLAWS: SOCIETY OF BLACK ACADEMIC SURGEONS

Section 1 Annual Meeting

The Society of Black Academic Surgeons shall meet annually at such time and place as designated by the Executive Council.

Section 2 Quorum

The Fellows present shall constitute a quorum for business. All questions before the Society shall be determined by the vote of the majority of those present at any regular business meeting.

Section 3 Fiscal Year

The fiscal year shall begin on January first. The annual dues of each member shall be determined by the Executive Council with approval of the membership, payable on January first of each year. Each member of the Society who reaches the age of sixty-five years shall automatically have his dues rescinded.

Section 4 Parliamentary Procedure

Robert's Rules of Order shall govern the sessions of the Society.

Section 5 Membership

A. Eligibility

1. An individual who occupies a faculty position in a university department of surgery or its affiliated hospitals.
2. An individual who occupies a faculty position in a free-standing surgical residency program.
3. An investigator or teacher in an academic department of surgery or an ACGME-approved surgery program.
4. An individual in a surgical specialty (Neurosurgery, Orthopedics, Urology, Otorhinolaryngology, Plastic and Reconstructive) shall be eligible for membership.

B. Membership Certification

Membership in the Society shall include the following categories: Active, Senior, Associate and Honorary.

1. Active Fellow: Any person who is a Doctor of Medicine (M.D.) or the equivalent, a Doctor of Philosophy (Ph.D.) Degree or the equivalent who shares an interest in the purpose of the Society and is approved by the Fellowship Committee. Only active members have the right to vote and hold office.
2. Senior Fellow: Any active Fellow upon reaching the age of seventy years shall become a Senior Fellow. Senior Fellows are exempt from paying dues, and shall continue to vote, but shall not have the privilege of holding office.

CONSTITUTION OF THE SOCIETY OF BLACK ACADEMIC SURGEONS

(CONTINUED)

3. Associate Fellow: Any surgical resident in good standing in an ACGME-approved residency program who desires to pursue an academic surgical career.

4. Honorary Fellow: Any person who is a Doctor of Medicine (M.D.) (or equivalent) or Doctor of Philosophy (Ph.D.) degree (or equivalent) and has distinguished himself/herself by outstanding achievement and dedication to the objectives of the Society. Honorary Fellows shall pay no due or initiation fees and may not vote or hold elected office.

Section 6 Responsibilities of the Officers

A. It shall be the duty of the President to (1) preside at all meetings of the Society, (2) give the deciding vote, (3) ensure that Robert's Rules of Order and decorum are properly enforced in all deliberations of the Society, and (4) sign the approved proceedings of each meeting.

B. In the absence of the President, the President-Elect shall preside, and in his absence the Secretary.

C. It shall be the duty of the Secretary to (1) keep a true and correct record of the proceedings of the Meetings, (2) preserve all books, papers, and articles belonging to the Society, (3) keep an account of the Society with its Fellows, and (4) keep a register of the Fellows with the dates of their admission and places of residence. The Secretary shall report unfinished business at previous meetings requiring action, and attend to such other business as the Society may direct. The Secretary shall assist with the correspondence of the Society.

D. It shall be the duty of the Treasurer to collect the dues of the Society and make disbursements for expenses. The Treasurer shall present an annual report of the financial condition of the Society. The accounts of the Treasurer shall be audited once yearly by a committee appointed by the President.

Section 7 Vacancies, Resignations and Removal from Membership

A. Vacancies

Vacancies occurring in the offices of the Society, other than that of the President, shall be filled by appointment by the President until the next meeting. The President shall appoint members to all Committees.

B. Resignations

Any Fellow may resign from the Society by delivering a written resignation to the President or Secretary.

C. Expulsions

The removal of a Fellow from the society shall be based on gross negligence or poor character as determined by the Executive Council and a majority of the full membership.

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Special Appreciation

SBAS and The Cleveland Clinic Foundation Center for Continuing Education acknowledge educational grants for partial support of this activity from:

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1997	State University of New York, Buffalo, NY
1998	Howard University College of Medicine, Washington, DC
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2000	Charles R. Drew University, Los Angeles, CA
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2002	Morehouse School of Medicine, Atlanta, GA
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