Presentations - Conjoint Meeting - April 29, 2015

"Comparison of Management Strategies for Asymptomatic Carotid Artery Stenosis"

Alok Aggarwal, MD, Dhiren Patel, MD, Amy Maselli, MD, Donald Rissuci, PhD, Michael Shapiro, MD, Anthony Tortolani, MD, Marcus D'Ayala, MD
New York Methodist Hospital

"Outcomes of Kidney Transplants From Donor With Rhabdomyolysis"

Ravi N. Kapadia, MD, Liise K. Kayler, MD, MS
Montefiore Medical Center, Einstein College of Medicine

"Primary Hyperparathyroidism in Teenagers and Young Adults has More Dramatic Initial Presentation With an Emergency Room Admission due to a Very High Hypercalcemia and Also Diagnosed in Advanced Stage"

Michele Fischer, BS, Alexander Shifrin, MD, FACS, FACE
Jersey Shore University Medical Center, Neptune, NJ

"Watchful eye or Ineffective Nuisance - do Automated MEWS Systems Incorporating end-tidal Capnography Provide Effective Extended Coverage or More False Alarms?"

J. Blankush, MD, R. Freeman, MD, J. McIlvane, MD, T. Tran, MD, S. Nassani, MD, C. Sullivan, MD, IM Leitman, MD,
Mount Sinai Beth Israel and Icahn School of Medicine at Mount Sinai

"Predicting 30-Day Postoperative Mortality for Emergent Ventral Hernia Repairs Using the American College of Surgeons National Surgical Quality Improvement Program Database"

Paul J. Chung, MD, Sophia Tam, BS, Alexander Schwartzman, MD FACS, Michael O Bernstein, MD FACS, Antonio Alfonso, MD FACS, Gainosuke Sugiyama MD FACS
State University of New York Downstate Medical Center, Brooklyn, NY

Comparison of Management Strategies for Asymptomatic Carotid Artery Stenosis

Alok Aggaral,MD, Dhiren Patel, MD, Amy Maselli, MD, Donald Rissuci, MD, Michael Shapiro, MD, Anthony Tortolani, MD, Marcus D'Ayala, MD

New York Methodist Hospital, Brooklyn, NY

INTRODUCTION: Previous studies suggest an increased incidence of stroke following carotid angioplasty and stenting (CAS) compared to carotid endarterectomy (CEA) in management of asymptomatic carotid artery stenosis (ACAS), particularly in the elderly.

METHODS: The 2012 Nationwide Inpatient Sample (NIS) was queried for data on admissions with a primary diagnosis of ACAS and primary procedure of CEA or CAS. Stepwise multivariable regression analyses were used to identify the independent significance of type of surgery in prediction of outcomes.

RESULTS: We identified 17344 admissions with asymptomatic carotid artery stenosis during the study period that underwent either CEA (14722, 84.8%) or CAS (2679, 15.2%). No difference in age was seen (70.9 vs. 71.2 years, P= 0.20). Caucasian race (88.8% vs. 85.3%, P<0.001) and female gender (42.4% vs. 38.5%, P<0.001) were more common in the CEA group. Cardiac (11.2% vs. 6.6%, P<0.001) and renal (13% vs. 9.6%, P<0.001) co-morbidities were more common in the CAS group. There was no difference in postoperative MI (1.4% vs. 1.6%, P=0.48) or in-hospital mortality (0.2% vs. 0.2%, P=0.65). Postoperative stroke was significantly higher in the CAS group (2.4% vs. 1.2%, P <0.001), as was the major adverse event rate (3.9% vs. 2.7%, P<0.001). Median hospital charges were greater for the CAS group $44363 vs. $27047, P<0.001). Multivariable regression analysis identified CAS as an independent predictor of stroke (Odds Ratio; 95% CI: 1.95; 1.45, 2.62) and hospital charges (B = 16496.24; p < 0.001).

CONCLUSION: CAS for ACAS is associated with higher stroke risk and hospital charges t

OUTCOMES OF KIDNEY TRANSPLANTS FROM DONOR WITH RHABDOMYOLYSIS

Ravi N. Kapadia MD[1,*], Liise K. Kayler MD, MS[1,2]

1. *Montefiore Medical Center, Albert Einstein College of Medicine, Department of Surgery*
2. *Montefiore Einstein Center for Transplantation*

**Corresponding author: Ravi N. Kapadia MD,*

Background: Rhabdomyolysis is a common cause of acute renal failure affecting nearly 10-15% of hospitalized patients, with most restoring renal function within 10-14 days. Given the current shortage of donors, means to expand donor criteria are constantly being examined. Donors with rhabdomyolysis have been utilized; however there is a paucity of empiric data on outcomes.

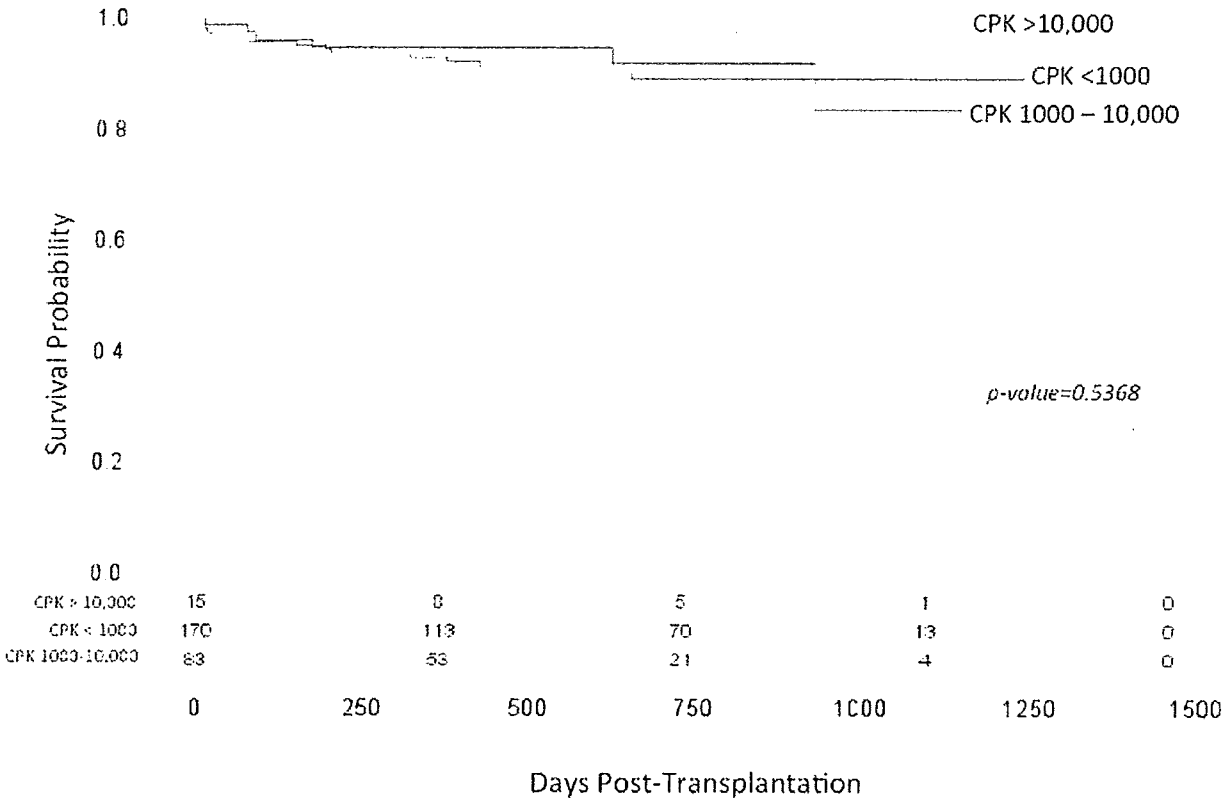
Methods: A retrospective cohort study of consecutive adult kidney-only deceased-donor transplants at a single institution between October 2011-December 2014 was conducted to evaluate overall graft survival and delayed graft function of recipients receiving kidneys with donor creatine phosphokinase (CPK) levels < 1000 (n=170) vs. ≥1000 (n=98). A separate analysis was also conducted to examine outcomes with extremes of CPK including < 1000 (n=170) vs. 1000-10,000 (n=83) vs >10,000 (n=15). Exclusions were recipients with missing donor CPK.

Results: 37% received a kidney from a donor with CPK > 1000. On Kaplan-Meier analysis, overall graft survival (p=0.54) and delayed graft function (61.5% vs. 51.5%, p=0.1179) were similar between the two groups. A separate analysis analyzing three CPK strata was performed in order to examine the magnitude of a potential effect with higher levels of CPK. In this analysis there were no differences in overall graft survival (Figure 1) or delayed graft function (51.5%, 61.5%, 66.7%, p=0.2671) between the CPK <1000, CPK 1000-10,000, and CPK > 10,000 groups.

Conclusion: Kidney transplantation from donors with elevated pre-recovery CPK is not a risk factor for poor graft outcomes, suggesting that donor CPK should not be a contraindication to kidney utilization.

Table 1			
Characteristic (mean ± SD or %)	CPK <1000 (n=170)	CPK >1000 (n=98)	*p-value*
Recipient			
Age (years)	53.5 ± 15.3	50.6 ± 17.6	0.1576
Race - black	42.1	46.9	0.4420
Male gender	63.7	57.1	0.2848
Diabetes Mellitus	42.1	36.8	0.4079
Thymoglobulin Induction	48.5	49	0.9444
Prior solid organ transplant	16.4	11.2	0.2483
Body mass index >35 (kg/m^2)	9.5	8.3	0.7382
Cardiac disease	29.7	30	0.9597
Donor			
Age (years)	46.1 ± 16.8	37.3 ± 16.8	<0.0001
Race - black	17	20.4	0.4806
Male gender	55.6	60.2	0.4583
Expanded Criteria Donor (ECD)	30.4	17.4	0.0182
Donor peak serum creatinine (mg/dL)	1.6 ± 0.9	2.7 ± 1.6	<0.0001
Delayed Graft Function	51.5	61.5	0.1179
Post Op Follow-Up (Days)	598 ± 383	507 ± 332	0.0508

Figure 1


1.0
0.8
0.6
0.4
0.2
0.0
Survival Probability
CPK >10,000
CPK <1000
CPK 1000 – 10,000
p-value=0.5368
CPK > 10,000 15 8 5 1 0
CPK < 1000 170 113 70 13 0
CPK 1000-10,000 83 53 21 4 0
0 250 500 750 1000 1250 1500
Days Post-Transplantation

Primary hyperparathyroidism in teenagers and young adults has more dramatic initial presentation with an emergency room admission due to a very high hypercalcemia and also diagnosed in advanced stage

Michele Fischer, BS (1) , Alexander Shifrin, MD, FACS, FACE (1)

Jersey Shore University Medical Center, Neptune, NJ

Primary hyperparathyroidism (PHPT) is uncommonly diagnosed in teenagers and young adults. They often present with more severe symptoms associated with hypercalcemia than do those patients diagnosed later in life. We have retrospectively reviewed a single surgeon experience of 392 consecutive parathyroidectomies in patients with PHPT. Of those, nine (2.2%) were thirty years of age and younger (mean age:20; range:14-29). Serum calcium concentrations, intact parathyroid hormone (PTH), creatinine, and 24 hour urinary calcium levels were reviewed in all patients. Teenagers and younger patients presented with more advanced disease. The mean calcium level was 12.6mg/dL(10.6-16mg/dL), PTH was 244 pg/mL(67-800 pg/mL). Four (44%) were admitted into the emergency room due to severe hypercalcemia during initial presentation of disease, with symptoms of severe abdominal pain, nausea, vomiting, severe weakness and fatigue; one patient had pancreatitis. Bone density was measured in 5 patients: two had osteoporosis (40%), one osteopenia (20%). No nephrolithiasis was detected in any patients. Multiple endocrine neoplasia (MEN) syndromes were ruled out in all patients. Ultrasonography and sestamibi localized single parathyroid glands in 88% and 75% of patients respectively. All nine patients underwent parathyroidectomy with findings of a single parathyroid adenoma (mean volume: 5.3 cm^3; range: 0.6-21 cm^3). Pathology in all cases were consistent with a single, and usually large, parathyroid adenoma, and there were no evidence of MEN syndromes. Conclusion: Teenagers and young adults with PHPT, compared to adults, more often presented with severe hypercalcemia, more often required hospitalization, and have a greater likelihood of end organ damage if left undiagnosed.

Watchful eye or ineffective nuisance - do automated MEWS systems incorporating end-tidal capnography provide effective extended coverage or more false alarms?

J Blankush, R Freeman, J McIlvane, T Tran, S Nassani, C Sullivan, IM Leitman
Mount Sinai Beth Israel and Icahn School of Medicine at Mount Sinai.

Introduction: Modified Early Warning Scores (MEWS) provide real-time vital signs (VS) trending and reduce ICU admissions but produce false alarms and increased workload when physiologic data is incorrectly measured. This study investigates whether automated MEWS devices, including end-tidal CO_2 (EtCO2) monitoring and its inclusion in MEWS, accurately identify at-risk post-operative patients or produce too many false alarms to be efficacious.

Methods: Starting July 2014, post-operative patients meeting inclusion criteria (BMI > 30, OSA history, PCA or epidural narcotics) were monitored using automated MEWS and $EtCO_2$ capnography systems. Automated pages resulted for elevated MEWS, abnormal $EtCO_2$, and $SpO_2 < 85\%$. Other alarms (i.e. technical, abnormal VS, etc.) sounded at bedside. Data, including alarm and page details, from the first 133 patients were recorded and analyzed.

Results: Device-only VS alarms and warning pages occurred 2.0 times/hr of monitoring (70% false alarms) and 0.6/hr (75% false), respectively. Pages for abnormal EtCO2 occurred 0.4/hr (82% false). 143 times (0.1 pages/hr), devices calculated an elevated MEWS (62% false). 29% of elevated MEWS included an abnormal EtCO2 value, but 50% included falsely abnormal $EtCO_2$ values. Automated MEWS showed more utility in patients with history of hypertension ($p = 0.072$) and/or renal disease ($p = 0.084$). EtCO2 monitoring showed utility in patients with histories of DMII, CAD, and/or OSA ($p < 0.05$), and those on PCA post-operatively ($p < 0.05$). To date, no adverse events have occurred.

Conclusion: Automated MEWS and $EtCO_2$ monitoring result in a high number of false alarms but may be useful in providing extended coverage of select postoperative patients.

Title
Predicting 30-Day Postoperative Mortality for Emergent Ventral Hernia Repairs Using the American College of Surgeons National Surgical Quality Improvement Program Database

Authors
Paul J. Chung MD, Sophia Tam BS, Alexander Schwartzman MD FACS, Michael O. Bernstein MD FACS, Antonio Alfonso MD FACS, Gainosuke Sugiyama MD FACS

Affiliation
Department of Surgery, State University of New York Downstate Medical Center, Brooklyn NY, 11203

Introduction
We seek to elucidate risks factors predicting 30-day postoperative mortality following emergent ventral hernia repair in the setting of incarcerated, strangulated, or necrotic bowel.

Method
Patients with primary or acquired ventral, epigastric, or umbilical hernias with incarcerated, strangulated, or necrotic bowel (ICD9 codes 551.2, 551.20, 551.21, 551.29, 552.1, 552.2, 552.20, 552.21, 552.29) that underwent emergent repair (CPT codes 49561, 49566, 49572, 49582, 49587, 49590) were selected from the 2005-2010 American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database. Multivariate logistic regression analysis was performed to create a risk model. The C-statistic and Bootstrap-validated C-statistic and Hosmer-Lemeshow goodness-of-fit test were used to evaluate the model. A risk score was created using the beta-coefficients from the model.

Results
3,466 cases met selection criteria, with 61 deaths (1.8%). On multivariate analysis six independent variables predicted mortality, including age, preoperative white blood cell count, blood urea nitrogen, hematocrit, platelet count, and presence of ascites. The C-statistic and Bootstrap-validated C-statistic was 0.877 and 0.835, respectively, suggesting excellent discriminative ability. The Hosmer-Lemeshow test had a p-value of 0.355, suggesting the model does not overfit the data. A risk score was created using the beta-coefficients.

Conclusion
We present the largest retrospective analysis of emergent ventral hernia repairs to date. The ACS-NSQIP model has six independent risk factors and excellent discriminative ability to predict 30-day mortality following emergent ventral hernia repair. A risk score was created, enabling clinicians to educate patients and family by providing a prognosis for these grave conditions.