

Augusta - Clinical Oncology - Hosted by the CT Commission on Cancer

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Alexander Frey MD	Yale School of Medicine
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Tomasz Kasprzycki MD	Frank H Netter Quinnipiac School of Medicine - WH
Richard Maduka MD	Yale School of Medicine
Sean Ramras MD	Frank H Netter Quinnipiac School of Medicine - WH

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Sean Ramras MD	Frank H Netter Quinnipiac School of Medicine - WH
Leah Aakjar MD	University of Connecticut
Nicholas Druar MD, MPH	Saint Mary's Hospital
Suraj Panjwani MD	St. Mary's Hospital
Santosh Swaminathan MD	Saint Mary's Hospital

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Shayan Ahmed MD	Saint Mary's Hospital
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Tiahna Spencer MD	UConn Health

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Blake Acquarulo MPH	Frank H. Netter MD School of Medicine at QU
Olohirere Ezomo MPH	Frank H. Netter MD School of Medicine at QU
Ian Whittall BA	University of Connecticut School of Medicine
Shashwat Kala BA	Yale School of Medicine

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Providence - Metabolic & Bariatric Surgery - Hosted by CT Chapter ASMBS

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Santosh Swaminathan MD	Saint Mary's Hospital
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Chelsea Paterson MD	Saint Mary's Hospital

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Tyler Glaspy MD	Danbury Hospital

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Concord - Surgical Subspecialties- Hosted by the CTACSPA

Austin Alecxih BS	Frank H. Netter MD School of Medicine at QU
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Minha Kim MD	Danbury Hospital
Nicolle Burgwardt MD	Stamford Hospital
Sue Ting Lim MD	Saint Mary's Hospital
Olohirere Ezomo MPH	Frank H. Netter MD School of Medicine at QU

BIOMECHANICS OF THE PROXIMAL TIBIOFIBULAR JOINT: QUANTIFYING NORMAI
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John MacArthur Trauma/Critical Care - Hosted by the CT Committee on Trauma

The Effect of the COVID-19 Pandemic on Community Violence: Minority Communities Are Hit the Hardest

Kathleen M O'Neill

Yale School of Medicine

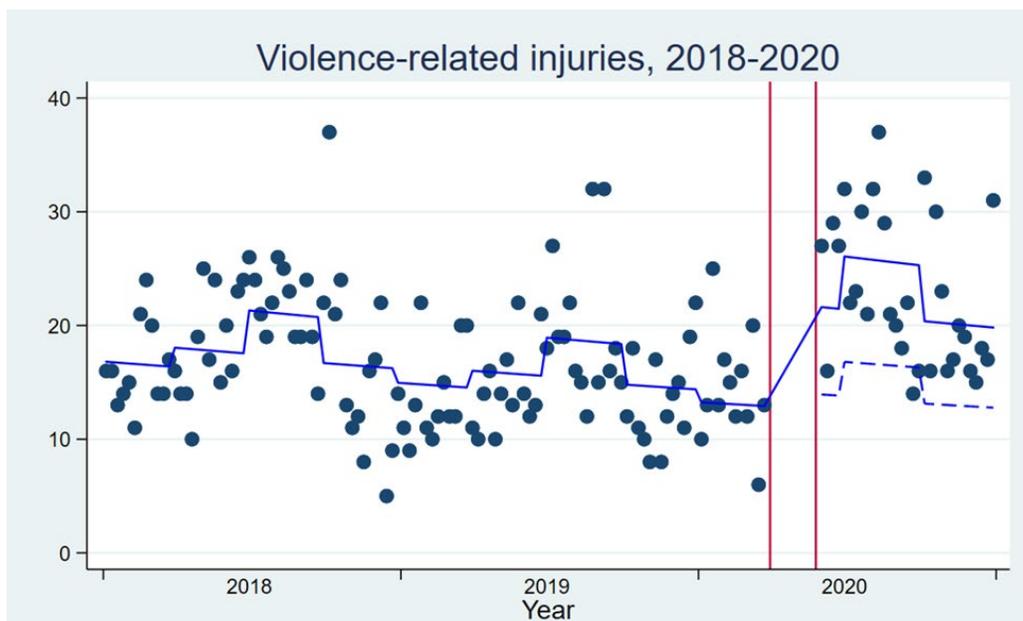
Introduction: Research on natural disasters suggest that these events may lead to increases in community violence. The COVID-19 pandemic is a unique historical event with similar traits to a natural disaster including broad social disruption, job loss, and large-scale morbidity and mortality. The effect of the COVID-19 pandemic on community violence and whether this disproportionately affected racial and ethnic minority communities is unknown.

Methods: We collected trauma registry data on all violence-related (defined as gunshot wound, stabbing, or assault) patient presentations to major trauma centers in Connecticut from January 1st, 2018 to December 31st, 2020. We compared the pattern of violence-related trauma from pre- and post-COVID-19 pandemic using an interrupted time series linear regression model, adjusted for seasonality and then stratified by race/ethnicity.

Results: We identified 2,563 violence-related trauma presentations from 2018-2020. There was a 55% increase in violence-related trauma in the post-COVID period compared with the pre-COVID period (IRR: 1.55; 95%CI: 1.34-1.80; p-value<.001); this increase was driven largely by more penetrating stab and gunshot injuries post-COVID. There was no significant difference in rate of admission, need for intensive care, or injury severity score. When stratified by race/ethnicity, there was a 61% increase in violence-related trauma presentation among Black/Latino patients (IRR: 1.61; 95%CI: 1.36-1.90; p-value<.001) that was not seen in the white population (IRR: 0.91; 95%CI: 0.61-1.36; p-value=.659).

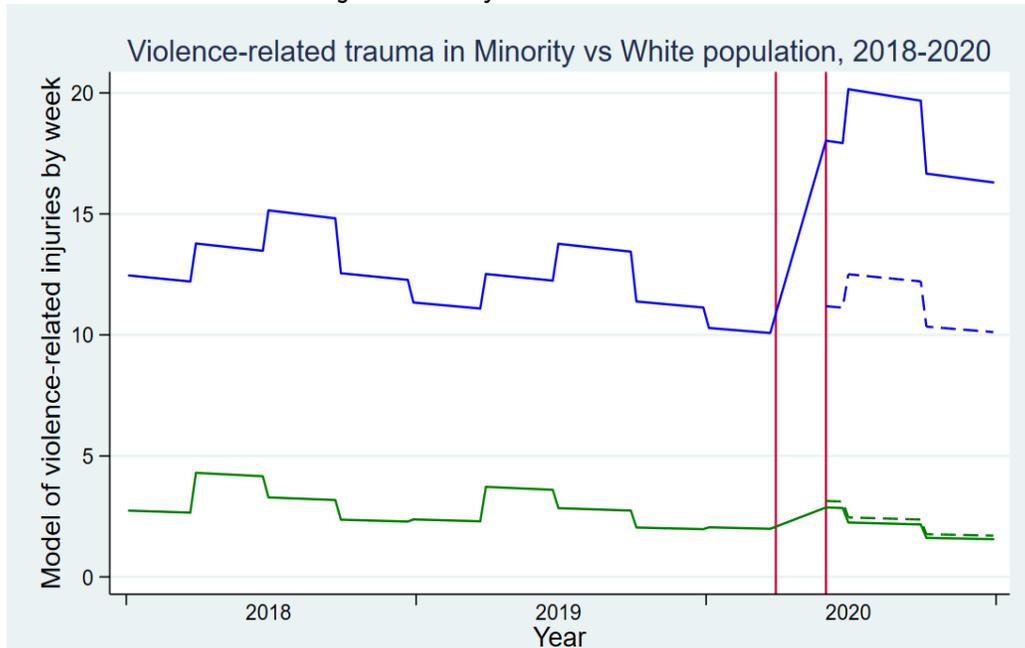
Conclusion: Violence-related trauma significantly increased during the COVID-19 public health crisis in the state of Connecticut. Black/Latino populations were disproportionately impacted, with higher increases in community violence as compared to the white population. Increased community violence is yet another negative health and social consequence of the COVID-19 pandemic, and one that excessively burdens racial and ethnic minority communities already at increased risk from systemic health and social inequities.

Time series linear regression analysis for all violence-related injuries



Interrupted time series regression analysis for all violence-related injuries in combined dataset, adjusted for seasonality. Data points are weekly violence-related trauma presentations. Blue line = predicted mean violence by the model; Dashed blue line = predicted mean violence with removal of effect of COVID-19 pandemic; Red lines = lockdown period (March 23 – May 21, 2020).

Stratified time series linear regression analyses



Interrupted time series regression analysis for all violence-related injuries in racial and ethnic minorities (defined as either Black or Latino) as compared with the white population plotted on the same graph from combined dataset, adjusted for seasonality. Data points (y-axis) are weekly violence-related trauma presentations. Blue line= predicted mean violence for racial/ethnic minorities. Dashed blue line= predicted mean violence for racial/ethnic minorities with removal of effect of COVID-19 pandemic; Green line= predicted mean violence for non-minority population. Dashed green line= predicted mean violence for non-minority population with removal of effect of COVID-19 pandemic; Red line = lockdown period (March 23 – May 21, 2020).

A Dangerous Meal: An Acute Perforation After Foreign Body Ingestion

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Introduction: Foreign body ingestion occurs frequently, with a majority proceeding along the gastrointestinal tract without any obstruction, stricture or perforation noted.⁵ Specifically in the adult population, many are ingested accidentally but may be intentional or in a state of altered mental status.² Erosion of foreign body material through the bowel wall leads to perforation.³ The typical onset of perforation occurs 10.4 days after foreign body ingestion, but with sharp objects symptoms are acutely evident.^{5,1} To follow is a case report of patient who presented with a small bowel perforation within 24 hours after accidental foreign body ingestion.

Case Presentation: 40-year-old female who presented to ED for a one-day history of burning, diffuse abdominal pain that began after consuming dinner at a family barbeque. She possessed normal bowel function, with consistent flatus and non-bloody bowel movements, and was without any nausea, vomiting or fevers. Her surgical history included a gastric bypass, exploratory laparotomy for internal hernia, laparoscopic cholecystectomy, and laparoscopic bilateral tubal ligation. CT imaging was obtained and was remarkable for a small linear foreign body-like density penetrating through a loop of small bowel with adjacent mesenteric edema noted. Her physical exam demonstrated severe tenderness in her right lower quadrant and supra-pubic region. Her vitals and initial lab work were within normal limits. The patient was taken to the operating room for a diagnostic laparoscopy with conversion to an exploratory laparotomy after discovery of a loop of small bowel with a thin, metallic object perforating

through the bowel wall, surrounded by an area of inflammation. A foreign body removal and small bowel resection with side-to-side anastomosis was conducted. Pathology later demonstrated a small bowel segment with focal microperforation, fibrinopurulent serositis and edema. The metallic object was identified as a wire bristle from a barbecue grill brush. The patient's post-operative course uneventful, and she was discharged in a timely fashion.

Discussion: Although the incidence for intestinal perforation from foreign body ingestion is low, sharp-pointed objects carry up to a 35% risk of complications with the majority necessitating urgent surgical intervention due to a high risk of perforation.⁴ A thorough physical examinations should be conducted to evaluate for signs of perforation, including but not limited to peritonitis. CT imaging is the superior modality for the detection of ingested foreign body.¹ Endoscopic and laparoscopic techniques may be utilized as initial less invasive interventions but are often unsuccessful in providing adequate exposure of bowel.⁴ As in this patient, conversion to a laparotomy is often required.

Foreign body ingestion is a relatively uncommon occurrence, but once confirmed with physical exam and imaging, must be intervened with prompt surgical intervention due to high risk for bowel perforation.

References:

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Does Statin Therapy Reduce the Risk of Stroke in Blunt Cerebrovascular Injury?

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Introduction: Statin therapy is known to prevent stroke in patients with atherosclerotic disease but has not been studied in trauma. We compared ischemic stroke rates among patients with blunt cerebral vascular injury (BCVI) depending on pre-admission statin use.

Methods: This is a retrospective cohort study of trauma patients admitted to a level I trauma center between 2016 and 2021. We included patients ≥ 18 years of age that suffered a BCVI following blunt trauma. We compared the risks of ischemic stroke between patients on statin therapy prior to admission (BCVI-S) vs. those who were not on a statin (BCVI-NS). We also compared patient demographics, mechanism of injury, comorbidities and injury severity score (ISS) between the two groups.

Results: From August 2016 to March 2021, 101 patients were admitted to our institution with the diagnosis of BCVI, with 86 patients meeting inclusion criteria. 19 carotid and 80 vertebral injuries were identified. Twenty-two patients were on statin therapy prior to injury, while 64 were not. Patients on statin therapy were overall significantly older with a higher rate of all comorbidities (p -values < 0.05) (Table 1). Importantly, despite increased comorbidities among this group, BCVI-S patients trended towards a decreased stroke rate when compared to BCVI-NS patients. (13.6% vs 23.4%, p -value= 0.544) (Table 2).

Conclusion: Although limited by sample size, the clinical significance in stroke reduction in patients with BCVI on statins should not be overlooked. Following a larger multi-center retrospective study, a future prospective trial will be helpful to study the stroke risk in patients initiated on statins at the time of BCVI diagnosis.

Variables	BCVI-S	BCVI-NS	p
Age, mean ± SD	76.45 ± 14.196	49.97 ± 18.853	<0.001
Male, n (%)	9 (40.9)	36 (56.3)	0.229
Mechanism of Injury, n			
Motor Vehicle Crash	3	26	---
Motorcycle Crash	1	9	---
Fall	18	20	---
Pedestrian Struck by Vehicle	0	2	---
Diving	0	3	---
Other	0	4	---
Comorbidities, n (%)			
Hypertension	19 (86.4)	11 (17.2)	<0.001
Hyperlipidemia	17 (77.3)	6 (9.4)	<0.001
Coronary Artery Disease	9 (40.9)	8 (12.5)	0.010
Diabetes Mellitus	9 (40.9)	7 (10.9)	0.004
Peripheral Vascular Disease	3 (14.3)	0 (0.0)	0.013
Atrial Fibrillation	10 (45.5)	5 (7.8)	<0.001
History of Stroke	4 (18.2)	0 (0.0)	0.003
Injury Severity Score, mean	35.73	46.17	0.090

Table 1. Patient demographics in BCVI-S and BCVI-NS groups.

	BCVI-S	BCVI-NS	Total			
Stroke (n)	3	15	18			
No stroke (n)	19	49	68			
Stroke rate (%)	13.6	23.4	20.9			
	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	
CAROTID BCVI						
BCVI-S						
No stroke (n)	0	4	1	1	0	
Stroke (n)	0	0	0	0	0	
Stroke rate (%)	N/A	0	0	0	N/A	
BCVI-NS						
No Stroke (n)	2	3	0	0	2	
Stroke (n)	0	3	2	1	2	
Stroke rate (%)	0	50	100	100	50	
Total Carotid BCVI (n)	2	10	3	2	4	
VERTEBRAL BCVI						
BCVI-S						
No Stroke (n)	3	9	1	6	0	
Stroke (n)	0	1	0	2	0	
Stroke rate (%)	0	10	0	25	N/A	
BCVI-NS						
No Stroke (n)	14	11	2	19	1	
Stroke (n)	1	4	0	6	0	
Stroke rate (%)	6.6	26.6	0	24	0	
Total Vertebral BCVI (n)	18	25	3	33	1	

Table 2. Stroke rates in patients with BCVI-S vs BCVI-NS.

Investigation of Shock Index as an Indicator for Level of Trauma Activation: Retrospective Chart Review at a Single Level II Institution

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Introduction: Shock index (SI) is defined as the heart rate (HR) divided by systolic blood pressure (SBP). SI >1.0 has been found to predict increased risk of mortality and other markers of morbidity, such as need for massive transfusion protocol activation and admission to intensive care units. Here we attempted to analyze the association of Shock Index at a single Level II institution with trauma activation level.

Method(s): Retrospective review of data was taken from Level II trauma center database kept for trauma certification from 2012-2020. Demographics, initial heart rate, initial GCS, initial systolic blood pressure were recorded. Univariate and multivariate analysis was conducted looking at effect on shock index. Patients were not included if missing data of primary variables was not available.

Results: Four thousand nine hundred and eighty-one patients were included in the study. Overall, mean SI was 0.65 with range from 0 to 4.8. A one-way analysis of variance showed a statistically significant difference between levels of trauma activation with increasing shock index with higher levels of activation. In multivariate analysis, level of activation along with morality and initial GCS were found to be independently associated with a shock index greater than 1. Age was found to be inversely significant on multivariate analysis.

Conclusion(s): In a retrospective review of trauma patients at a single Level 2 institution, shock index was higher with increasing level of activation. Like previous studies SI remains an important clinical indicator for trauma. We propose of the use of shock index in trauma activation guidelines to help triage patients to an appropriate level of care.

Impact of the Affordable Care Act on Management of Ankle Fractures - A National Trauma Data Bank Analysis

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Introduction The major provisions of Affordable Care Act (ACA) took effect in January 2014. Using the National Trauma Data Bank (NTDB), we asked whether ACA's expanded Medicaid coverage provision had any bearing on insurance coverage and outcomes for patients diagnosed with ankle fractures.

Methods We defined 2012-2013 as pre-ACA and 2015-2016 as post-ACA. We delineated 2014 as a washout year. We identified patients aged 18-64 years with ankle fractures using ICD 9 codes. Exclusion criteria included poly-trauma and patients dead on arrival. We analyzed patient demographics including hospital payment source along with injury and institutional characteristics, length of stay (LOS) and discharge disposition - home vs. home with services or to a facility constituted primary outcomes of interest. We performed univariate followed by multivariate analyses.

Results We identified 26,445 patients with ankle fracture; 13,864 (52%) pre-ACA and 12,581 (48%) post-ACA. For hospital payment source, 11% patients used Medicaid pre-ACA vs. 16% post-ACA, whereas 17% were self-pay pre-ACA vs. 14% post ACA ($p < 0.001$). We found the highest Medicaid expansion in the West region (23% post-ACA vs. 10% pre-ACA, $p < 0.001$), whereas the lowest in the South region (12% post ACA vs. 10% pre ACA, $p < 0.001$). Mean LOS for all patients was 4.3 days and was higher for the post ACA group (5 vs. 3.6 days, $p < 0.001$). Compared to pre-ACA, post-ACA saw more patients being discharged to a facility (8% vs. 17%, $p < 0.001$) or home with services (9% vs. 11%, $p < 0.001$) and thus fewer to home without services (83% vs. 73%, $p < 0.001$). Multivariate analyses reflected increased odds for a longer LOS (≥ 4 days) and discharge to a facility/home with services for post-ACA patients (Table 1, 2).

Conclusion ACA's Medicaid expansion provision positively impacted patients with ankle fractures. Specifically, the ACA improved resource utilization as seen by longer LOS and discharge home with services or to a facility.

See tables on next page...

	Odds Ratio	CI 95%	P-value
Period			
Pre-ACA (2012-2013)	Ref		
Post-ACA (2015-2016)	1.64	1.53-1.75	<0.0001*
Increasing Age	1.05	1.049-1.056	<0.0001*
Increasing ISS	1.14	1.13-1.15	<0.0001*
Sex			
Female	Ref		
Male	0.70	0.65-0.75	<0.0001*
Race			
White	Ref		
Black	1.17	1.05-1.28	0.0082
Ethnicity			
Non-Hispanics	Ref		
Hispanic	0.75	0.63-0.89	0.001*
Region			
South	Ref		
Mid-West	1.17	1.08-1.27	<0.0001*
North-East	2.39	2.18-2.63	<0.0001*
West	0.94	0.84-1.06	0.337
Insurance			
Self-pay	Ref		
Private	1.87	1.64-2.13	<0.0001*
Medicaid	3.12	2.69-3.62	<0.0001*
Fracture			
Closed	Ref		
Open	0.99	0.90-1.10	0.99
Trauma Center level			
Other	Ref		
Level 1	0.88	0.82-0.94	<0.0001*

Table 1 - Multivariate analysis looking at predictors for **discharge** to facility/home with services CI Confidence Interval, ISS - Injury Severity Scale, * p<0.05

	Odds Ratio	CI 95%	P-value
Period			
Pre-ACA (2012-2013)	Ref		
Post-ACA (2015-2016)	1.23	1.16-1.30	<0.0001*
Increasing Age	1.03	1.029-1.034	<0.0001*
Increasing ISS	1.16	1.15-1.17	<0.0001*
Sex			
Female	Ref		
Male	0.85	0.81-0.90	<0.0001*
Race			
White	Ref		
Black	1.39	1.28-1.50	<0.0001*
Ethnicity			
Non-Hispanics	Ref		
Hispanic	1.00	0.89-1.13	0.92
Region			
South	Ref		
Mid-West	0.88	0.82-0.94	<0.0001*
North-East	1.43	1.32-1.55	<0.0001*
West	0.83	0.75-0.91	<0.0001*
Insurance			
Self-pay	Ref		
Private	0.92	0.85-1.00	0.063
Medicaid	1.62	1.46-1.79	<0.0001*
Fracture			
Closed	Ref		
Open	1.19	1.10-1.30	<0.0001*
Trauma Center level			
Other	Ref		
Level 1	1.20	1.13-1.26	<0.0001*

Table 2 - Multivariate analysis looking at predictors for **LOS ≥ 4 days** CI - Confidence Interval, ISS - Injury Severity Scale, * p<0.05

Global Deletion of Pellino-1 Triggers Cardiac Dysfunction, Cell Death and Increased Inflammation in a Murine Severe Sepsis Model

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Introduction: Sepsis induced multiorgan dysfunction/failure is a major clinical problem that requires new and effective therapeutics. The prevalence of sepsis-related cardiac dysfunction can be as high as 70%. We have previously reported that global Pellino-1 (Peli1) knockout (KO) mice worsen cardiac function and ischemic limb recovery following myocardial infarction and critical limb ischemia respectively. In the present study, we investigated the effects of global Peli1 inhibition in sepsis induced cardiac dysfunction.

Methods: Wild-type (WT) and Peli1 KO mice were divided into Wild-type sham (WTS), Wild-type Cecal Ligation and Puncture (WTCLP), Peli-1 KO sham (Peli-1KO S), and Peli-1KO CLP. Cardiac function (LVEF, FS) by two-dimensional echocardiography was assessed pre-procedure, at 6, and 24 hours post-surgery. Serum IL-6 and TNF-alpha (ELISA) at 6 hours and apoptosis (TUNEL assay) at 24 hours were measured. Results are expressed as mean \pm SEM.

Results: Cardiac functional parameters such as EF and FS both in the preoperative setting and the sham groups were not significantly different. In the CLP groups, there was no difference in these parameters in the early time point (6 hours), but a significant reduction in EF was observed in the Peli1KO population at 24-hours post-surgery [EF: (Peli1KO-38.48% \pm 1.36, n=11) vs. (WT-54.55 \pm 3.11, n=26), $p < 0.0001$]. This trend was also observed in the reduction of FS at the same time point [FS: (Peli1KO-18.04 \pm 0.77, n=11) vs. (WT-29.17 \pm 2.88, n=26), $p < 0.0001$]. Peli1KOCLP group also showed significant increase in the levels of IL-6 [(Peli1KO-706.8 \pm 43.00) vs (WT-483.2 \pm 24.01, n=6), (pg/ml, $p = 0.001$)] and TNF-alpha [(Peli1KO-260.4 \pm 39.04) vs (WT-161.8 \pm 20.00, n=6), (pg/ml, $p = 0.0012$)]. Increased cardiac dysfunction at 24 hours was further supported by increased increased apoptotic cell death in the Peli1KOCLP group (70 \pm 2.74; TUNEL+ve) when compared to the WTCLP group (11.67 \pm 2.82), (n=6, $p = 0.028$).

Conclusions: Our study indicate that Peli1 plays important role related to cardiac function, inflammation and apoptosis following severe sepsis in a murine genetic model.

Sultan Ahamed, MD, FACS General Surgery - Hosted by the CTACSPA

Implications of Obesity in Patients with Ulcerative Colitis Undergoing Ileoanal J-pouch anastomosis

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Introduction: While many patients with Ulcerative Colitis (UC) are underweight, there is a subset with less severe symptoms who are overweight. The significance of the added weight on the outcome of ileoanal J-pouch anastomosis (IPAA) is unclear. Thus, our objective was to study the outcomes of patients with UC who are classified as overweight following ileoanal J-pouch anastomosis

Methods: Three hundred and fifty-four patients who underwent IPAA for UC were studied prospectively. Seventy-five of them were classified as overweight based on being 10% above their ideal body weight (IBW). They were compared to 279 patients with lower IBW

Results: Patients who were overweight were significantly more likely to be female, older at surgery, with longer duration of disease, less likely to have severe proctitis and more likely to have dysplasia as their indication for surgery. They were also more likely to have a stapled IPAA instead of a mucosectomy and hand sewn anastomosis. Subset analysis comparing the patients who underwent stapled IPAA (70 patients) showed significantly higher incidence of partial anastomotic dehiscence (20% vs 0%,

p=0.004) and need for transfusion (60% vs 33%, p=0.04) in overweight patients. In addition, there was a significantly longer length of residual mucosa between the dentate line and the stapled IPAA in overweight patients (2.6 cm vs 2.1 cm, p=0.03).

Conclusions: Stapled IPAA in overweight patients is technically more challenging to perform and review of their outcomes shows significantly increased incidence of partial anastomotic dehiscence and longer residual mucosal remnant in the rectal cuff. The longer residual mucosa may have implications in the long-term follow up of overweight patients and their potential cancer risk.

Outcomes of Robotic-Assisted versus Laparoscopic Cholecystectomy – Experience of a High-Volume Robotic Center

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Introduction: The National Inpatient Sample database showed an increase in robotic-assisted (RAS) cholecystectomy from 0.02% in 2008 to 3.2% in 2017. The outcomes of RAS cholecystectomy remained poorly defined. Our study aims to determine the outcomes of RAS versus laparoscopic (lap) cholecystectomies in a high-volume robotic surgical center of excellence.

Method: A retrospective chart review was performed on all patients who underwent cholecystectomies during the calendar year 2020. The primary goal was to interrogate the conversion rate to open surgery, length of stay (LOS), complication, OR time between robotic-assisted (RAS) cholecystectomy and laparoscopic (lap) cholecystectomy.

Results: Our study population includes 294 patients who underwent cholecystectomy in 2020. Among these, 206 (70.0%) were lap cholecystectomy, and 88 (30.0%) were RAS cholecystectomy. In the laparoscopic cohort, 85 were urgent cholecystectomies (41.3%), and 121 were elective (58.7%), whereas, in the robotic group, 31 (35.2%) were urgent cholecystectomies, and 57 (4.85%) were elective. The conversion rate to open cholecystectomy was 2.43% (5/206) in lap cholecystectomy and 1.1% (1/88) in RAS cholecystectomy (p=0.42). The mean LOS is 84.5 hours in lap cholecystectomies (median=31.5) and 29.5 hours (median=8) in RAS cholecystectomies. There is a significantly lower operating time in lap cholecystectomy (mean=48.6 minutes) when compared to RAS cholecystectomy (mean= 70.2minutes). Overall, complication rates were comparable in the laparoscopic and the robot-assisted group (5.80% vs 5.68%). There was one CBD injury in each group, one trocar injury for peritoneal access and three retained CBD stone in the lap group. In the laparoscopic group there were two postoperative bleeds requiring transfusion as compared to one in the RAS group. Readmission rates were lower in the RAS cholecystectomy group (1.14%) compared to the lap cholecystectomy group (2.43%).

Conclusions: Robotic-assisted cholecystectomy has a lower conversion rate than the laparoscopic approach suggesting the robotic approach may benefit a subset of patients in the management of benign gallbladder disease. The lower length of stay and lower readmission rate in RAS cholecystectomies may mitigate the longer operating times in terms of cost, which will need to be further investigated.

Outcomes	Robotic-assisted Cholecystectomy	Laparoscopic Cholecystectomy
Total Cases	88	206
- Urgent	31 (35.2%)	85 (41.3%)
- Elective	57(64.8%)	121(58.7%)
Conversion to open (p=0.42)	1 (1.1%)	5 (2.43%)
Complications	5 (5.68%)	12 (5.80%)
Readmissions	1 (1.14%)	5 (2.43%)
Mean LOS, hours	29.5 (Median: 8)	84.5 (Median: 31.5)
- Urgent	66.2 (Median: 54)	135.3 (Median: 47)
- Elective	9.5 (Median: 7)	12 (Median: 6)
Complication(s) (p=0.55)	5 (5.7%)	11 (5.3%)
OR time, minutes (p<0.001)	70.2	48.6
- Urgent	75	53.8
- Elective	67.6	41.3

Effects of COVID-19 Pandemic on Cholecystectomies Performed in a Community Hospital

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Introduction: The COVID-19 pandemic significantly impacted surgical practice, from procedural prioritization to perioperative practices. This impact included all types of cases including elective and urgent cases. Our study aims to describe this effect in terms of caseload, characteristics and outcomes of cholecystectomies in our institution during the different periods of COVID-19 pandemic.

Methods: This is a retrospective single institution analysis of all cholecystectomies performed during the period from 1 January 2020 to December 31st 2020. The characteristics of cases in 2020 were compared between pre-COVID period (January –March), the height of first COVID surge (April –May), post first COVID surge (June – October) and second COVID surge (November – December). The observed number of cases in each period was also compared to the number of cases in 2019 prior to the impact of COVID-19 to understand baseline caseloads.

Results:

There were 294 cholecystectomies performed in 2020, which is a 10.9% decrease from 330 cholecystectomies in 2019. During the first COVID surge, there was a decrease in number of cases to 2.5 cases per week as compared to 6.3 cases per week in 2019. The lowest number of cholecystectomies were performed in April during the peak of COVID, which is 17 cases from 27 cases in 2019, and the highest number of cholecystectomies were performed in October, just before the second COVID surge. There was a total of six conversion to open cholecystectomies, one in pre-COVID period, two during the COVID surge and three post first COVID surge. Pathology reports revealed necrotizing gallbladders from the 5 patients during the COVID period. The length of stay increased, with a mean of 34.4 hours prior to the surge to a mean of 50.9 hours during the surge and finally a mean of 110.6 hours following the first COVID surge.

Conclusions: We analyzed the impact of COVID-19 on all cholecystectomies at a single community-based institution. There is a decreased in number of cholecystectomies performed during the COVID surge. The number of conversions to open and the length of stay is greatest immediately post-COVID surge suggesting a delayed in presentation during COVID resulted in more complex anatomy of acute cholecystitis.

