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Daniel Zhou et al

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Thiamine Supplementation Does Not Improve Outcomes in Hospitalized Patients with Encephalopathy

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behavior and failure patterns in H&N may be different from trunk/extremity, supporting consideration of dedicated H&N trial. ■

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Table 1.

+SLN group demonstrates higher rate of local (LR), nodal (LNR), and systemic (SR) recurrence, as well as higher rate of death due to disease (DOD) when compared with -SLN group. Within +SLN group, patients who underwent complete lymph node dissection (CLND) surprisingly have higher rate of LR, LNR, SR, and DOD.

Completed SLNBx (N= 108)	LR %	LNR %	Local/Regional recurrence %	SR %	Combined Sys/Nodal %	DOD %	NED %
SLN -ve (77)	18%	8%	21%	13%	1%	7%	93%
SLN +ve (31)	23%	32%	35%	45%	29%	29%	55%
CLND (20)	35%	45%	55%	55%	40%	35%	45%
+SLNBx only (11)	0%	9%	9%	27%	9%	18%	73%
p-value	0.03*	0.055	0.02*	0.26	0.15	0.43	0.26

Thiamine Supplementation Does Not Improve Outcomes in Hospitalized Patients With Encephalopathy

Daniel J. Zhou¹, Navya Joseph¹, Kaeli Samson², Matthew Purbaugh¹, Brian Villafuerte-Trisolini¹, Neeharica Kodali³, Sachin Kedar¹

¹University of Nebraska Medical Center, Department of Neurological Sciences

²University of Nebraska Medical Center, College of Public Health, Department of Biostatistics

³University of Nebraska Medical Center, Electronic Health Record Data Access Core

Mentor: Sachin Kedar

Program: Neurology

Type: Original Research

Background: In hospitalized and critically ill patients, thiamine deficiency is common, difficult to clinically diagnose, and increases risk for encephalopathy.^{1,2} Thiamine supplementation for patients with encephalopathy has become routine at UNMC for its safety and potential benefits. We hypothesized that thiamine supplementation in hospitalized patients with encephalopathy would decrease their length of stay (LOS).

Methods: Adults (age >19 years) with index admission to UNMC between 1/1/2017 and 12/31/2017, hospital stay of 3-30 days, and ICD-10 code associated with encephalopathy were identified by the hospital electronic health record data access core. Primary outcome was hospital LOS, which we log-transformed due to skewness. Model adjusted mean log LOS estimates were exponentiated to obtain geometric means. Patients in the Thiamine group received at least one dose of supplemental thiamine (including multivitamins). A general linear model was used to evaluate the association between log LOS and thiamine supplementation.

Results: We identified 985 patients who met the above criteria. Table 1 describes the cohort demographics and clinical characteristics. After adjusting for potential confounding variables (denoted in Table 1), the mean log LOS was 1.95 for the Thiamine group and 1.63 for the No Thiamine group (p <0.0001).

Table 1.

Demographic and clinical characteristics of hospitalized patients with encephalopathy.

	Thiamine Group (n = 178)	No. (%), unless specified No Thiamine Group (n = 807)	P-value
Demographic Information			
Age (mean ± SD)*	66.5 ± 18.1	59.4 ± 15.5	<0.0001a
Gender*			0.0004
Female	67 (37.6)	423 (52.4)	
Male	111 (62.4)	384 (47.6)	
Race			0.47
Black	32 (18.4)	119 (14.8)	
White	129 (74.1)	627 (78.1)	
Other	13 (7.5)	57 (7.1)	
Ethnicity			0.65
Hispanic	8 (4.5)	43 (5.3)	
Not Hispanic	170 (95.5)	763 (94.7)	
Work status			<0.0001
Disabled	44 (25.1)	166 (20.7)	
Employed/Student/Retired	81 (46.3)	524 (65.3)	
Not employed	50 (28.6)	112 (14.0)	
Insurance status*			0.004
Insured	151 (84.8)	741 (91.8)	
Not insured	27 (15.2)	66 (8.2)	
Clinical Characteristics			
Log (DRG weight) (mean ± SD)	0.43 ± 0.64	0.26 ± 0.53	0.001a
Alcohol use*	68 (51.9)	166 (26.0)	<0.0001
PMH of malabsorption	20 (11.2)	115 (14.3)	0.29
PMH of GI disease	22 (12.4)	113 (14.0)	0.56
PMH of malnutrition*	46 (25.8)	167 (20.7)	0.13
PMH of cancer	40 (22.5)	220 (27.3)	0.19
PMH of GI surgery	28 (15.7)	98 (12.1)	0.19
Home use of loop diuretics	4 (2.2)	17 (2.1)	0.78b
Home use of PPIs	1 (0.6)	17 (2.1)	0.22b
Sepsis during hospital stay*	46 (25.8)	193 (23.9)	0.59
DKA during hospital stay*	27 (15.2)	72 (8.9)	0.01
Neurology service consulted*	57 (32.0)	141 (17.5)	<0.0001
Outcomes			
Log (Length of stay) (mean ± SD)	1.98 ± 0.70	1.60 ± 0.60	<0.0001a

Abbreviations: SD = standard deviation. DRG = diagnosis-related group. PMH = past medical history. GI = gastrointestinal. DKA = diabetic ketoacidosis. LOS = length of stay.

P-values from Chi-Square tests, unless otherwise specified.

a P-values from t-test.

b P-values from Fisher's exact test.

* Potential confounding variables that can contribute to log (LOS) via linear model.

Demographic information, clinical characteristics, and primary outcome were compared between the Thiamine group and No Thiamine group.

Conclusion: Contrary to prevailing expectations and our study hypothesis, we found that thiamine supplementation in hospitalized patients with encephalopathy did not improve LOS. Our results are consistent with the lack of beneficial effects of supplemental thiamine in other disease conditions such as sepsis (VITAMINS study) and congestive heart failure.³⁻⁵ We do not recommend routine thiamine supplementation in hospitalized patients. ■

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Acute Colonic Perforation in Renal Transplant Recipients: A Case Series

Emily Zurbuchen¹, Nathalie Sela², Alexander Maskin¹

¹University of Nebraska Medical Center, Department of Surgery

²University of Nebraska Medical Center, Department of Surgery, Division of Transplantation Surgery

Mentor: Alexander Maskin

Program: General Surgery

Type: Case Report

Introduction: There are few cases of non-diverticulitis episodes of colonic perforation following kidney transplantation throughout literature. In the systematic literature review by de'Angelis et al, emergency abdominal surgery following solid organ transplantation for non-diverticulitis causes gastrointestinal perforation accounts of 9.2% of cases, and about 58% of those perforations occurred in the colon. The aim of this case series is to review the events surrounding our two

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cases of colonic perforation following renal transplantation in hopes to gain understanding of this rare occurrence. Consent was obtained from the patients.

Case: Since 2011, there have been two events of transverse colonic perforation in the acute post-operative period following renal transplantation occurring at this institution. Large volume intraperitoneal air observed on plain film upon work up gastrointestinal symptoms prompted urgent surgical intervention in both cases. Both patients underwent urgent exploratory laparotomy and Hartmann procedure with resection of perforated transverse colon and proximal ostomy. The first patient underwent colostomy

takedown and primary colonic re-anastomosis about one year after his kidney transplant. The second patient is currently scheduled for future colostomy reversal.

Conclusion: Various theories of non-diverticular causes of colonic perforations are described in literature including cytomegalovirus enterocolitis, uremic enterocolitis, fecal impaction, and corticosteroid administration among others. Despite the lack of clear cause of perforation, it is imperative to have a high index of suspicion for these immunocompromised patients for prompt surgical treatment. ■

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Does Prophylactic Administration of Tranexamic Acid Reduce Mean Operative Time and Perioperative Blood Loss in Posterior Cervical Spinal Fusion Surgery?

Emmett J. Gannon¹, Evan P. Larson¹, Zachary C. Bailey¹, Sydney Powers², Scott A. Vincent¹, Chris A. Cornett¹, Liz Lyden³

¹University of Nebraska Medical Center, Department of Orthopaedic Surgery and Rehabilitation

²University of Nebraska Medical Center, College of Medicine

³University of Nebraska Medical Center, College of Public Health, Department of Biostatistics

Mentor: Chris Cornett

Program: Orthopaedic Surgery and Rehabilitation

Type: Original Research

Background: Adequate control of bleeding during spine surgery is paramount to the success and efficiency of the operation. Tranexamic acid (TXA) is a systemic antifibrinolytic that is beneficial in reducing blood loss during various orthopaedic procedures. TXA's role in posterior cervical spinal surgery, however, remains poorly described. Therefore we sought to evaluate

whether prophylactic TXA administration prior to posterior cervical fusion reduces perioperative blood loss and mean operative time.

Methods: Patients undergoing three to six-level posterior cervical fusions were retrospectively enrolled into two groups. In the study group, 21 patients received TXA prior to surgery, and in the control group, 21 patients did not. Patient's younger than 19 years old, and those undergoing surgery for infection or tumors were excluded. Intraoperative blood loss, operative time, and postoperative drain output were measured in addition to demographic data.

Results: No difference existed between groups in regards to demographics. The study group had a lower mean operative time (94 min) vs the control group (110 min), although not statistically significant ($p=0.06071$). Postoperative day 1 drain output was significantly lower in the study group ($p<0.0239$). Intraoperative blood loss, day 2, 3 and total drain output were lower in the study group but not statistically significant. There were two postoperative hematomas in the control group. No postoperative thromboembolic events occurred in either group.