Title

3224 Impact of aortic arch anatomy on technical performance and clinical outcomes in acute ischemic stroke patients

Journal

Journal of clinical and translational science, 3(Suppl 1)

ISSN

2059-8661

Author

Knox, Joseph A

Publication Date

2019-03-01

Peer reviewed

was not significantly different between Binge Level 2 and Binge Level 3 ($0 < 1 < 2 = 3$). Binge level groups showed significant differences in the number of button presses during the lab session ($H(3) = 36.955$, $p < 0.001$), peak breath alcohol concentration in the lab session ($H(3) = 19.870$, $p < 0.001$), and total binges in the TLFB ($H(3) = 90.296$, $p < 0.001$). Increased self-administration measures were proportional to the binge intensity level across groups, with no differences between Binge Level 2 and Binge Level 3 ($0 < 1 < 2 = 3$). For subjective measures, a Kruskal-Wallis H median test showed statistically significant differences between groups in the AUQ score following the priming infusion, $H(3) = 11.489$, $p = 0.009$, with bingers at all levels reporting higher scores compared to non-bingers ($0 < 1 = 2 = 3$). There was also a statistically significant difference between groups in the BAES Stimulation score following the priming infusion, $H(3) = 9.023$, $p = 0.029$, with differences seen between non-bingers and level 2 and level 3 bingers ($0 = 1 < 2 = 3$). DISCUSSION/SIGNIFICANCE OF IMPACT: This study demonstrated that high intensity binge drinkers were more likely to reach binge level and overall greater alcohol consumption during a human lab alcohol administration study. Binge intensity level was also associated with higher stimulation and urge for alcohol following priming exposures, which may in turn drive the consumption of greater amounts of alcohol, which we know to be associated with greater risk for AUD.

3060

How much activity do preschoolers accumulate in an outdoor education program?

Nathan Tokarek[1] and Ann M. Swartz
[1]University of Wisconsin - Milwaukee

OBJECTIVES/SPECIFIC AIMS: The primary aim of this study is to conduct a within-child comparison of in-school PA while attending nature-based and traditional preschool programs. The secondary aim is to observe the types of activities performed at each preschool location to determine which activities lead to greater and lesser amounts of school-based PA. METHODS/STUDY POPULATION: This will be a within-subjects repeated measures study in which participants will be recruited from a single preschool program where they spend two days per week (Monday/Wednesday) at a nature-based site, and two days per week (Tuesday/Thursday) at a traditional preschool location. All participants will be outfitted with a waist-worn Actigraph GT3X accelerometer, which they will wear from the moment they arrive to their preschool location until the moment they leave. Measurements will be conducted for four consecutive school days across two separate measurement periods, once in the winter and once in the spring. Additionally, a trained researcher will be present for the entirety of each measured day to document the types of activities participants engage in throughout the day, when these activities occur, and for how long. Accelerometer data will be analyzed using total counts, a reflection of total PA across all intensities, to determine school-based PA. Total activity counts will also be reduced to counts per minute and cross referenced with direct observation data to determine which activities contribute to higher and lower periods of PA throughout the day. Within child comparisons using two-tailed t-tests be made at both measurement periods between both preschool sites to determine whether significant differences in PA levels exist in children while attending either a nature-based or traditional preschool program. Logistic regression will also be applied to assess variables contributing to children's PA including, preschool location, weather, and time spent outside. RESULTS/ANTICIPATED RESULTS:. It is hypothesized that preschool children will engage in significantly more PA while attending a nature-based preschool program compared to a traditional preschool classroom setting. Opportunities for free and unstructured play will be greater in a nature-based setting compared to a traditional preschool location. Time spent outdoors will be the determining difference between preschool children's PA behaviors at a nature-based versus traditional preschool program. Variations in PA levels as a result of seasonal weather differences will be minimized on days in which children attend a nature-based preschool program. DISCUSSION/SIGNIFICANCE OF IMPACT: To our knowledge, this will be one of the first studies conducting a within child comparison of preschool-aged children's PA levels between a nature-based and traditional classroom setting. If, as hypothesized children engage in significantly more PA while attending their nature-based preschool program, the comparison to their traditional preschool site will provide insight into the magnitude of differences and where these differences in PA behaviors may occur throughout the school day. This information may then be used to inform future intervention's focusing on better aligning children's PA levels in a traditional school setting with what might be achieved through a nature-based educational program.

3224

Impact of aortic arch anatomy on technical performance and clinical outcomes in acute ischemic stroke patients

Joseph A Knox[1], Judy Ch'ang, Daniel Murph, David Mccoy and Daniel Cooke
[1]University Of California, San Francisco

OBJECTIVES/SPECIFIC AIMS: This study aims to examine the relative impact of aortic arch and carotid artery anatomy on the procedural times and clinical outcomes in patients who have suffered acute ischemic strokes (AIS). Mechanical thrombectomy remains the gold-standard of care for large vessel ischemic stroke. Given that short procedural times are necessary for good clinical outcomes, arterial access is an important technical consideration. It has been recently demonstrated that abnormal carotid artery anatomy can increase endovascular procedure times in this patient population. However, there are no studies examining the impact of aortic arch anatomy on operative times. Additionally, no studies have looked at the impact of aortic arch and carotid artery tortuosity on clinical outcomes in AIS. Thus, we sought to exam the influence of various aortic arch and carotid artery anatomic variables on interventional procedure times and clinical outcomes. METHODS/STUDY POPULATION: We included 56 patients who underwent embolectomy with successful revascularization for acute ischemic stroke in the anterior circulation from a period of 01/2016-05/2018. The average age was 71 (+/− 17 years) with 39% being male. We calculated anatomic variables on the affected side from CT angiograms immediately prior to embolectomy including the medial-to-lateral span, as well as the anterior-to-posterior span, of both the aortic arch and carotid arteries. In addition, the take-off angle of the respective vessel (left common carotid or right brachiocephalic) was calculated. Charts were reviewed for procedural times and epidemiologic information (HTN, HLD, DM, CAD and Afib). Modified Rankin Scale (mRS) was calculated from PT/OT and outpatient neurology notes. Partial correlation coefficients were performed between anatomic variables, temporal variables and outcome variables

after adjustment for age, gender and epidemiologic information. RESULTS/ANTICIPATED RESULTS: There was a significant positive correlation between procedure time (time at groin puncture to time at reperfusion) and take-off angle. There were no other significant correlations between anatomic measures and procedure time. In addition, there was as a significant positive correlation between both procedure time and time from last seen normal to reperfusion and delta mRS (the difference between pre-stroke and post-stroke mRS). DISCUSSION/SIGNIFICANCE OF IMPACT: These results suggest that patients with larger take-off angles have an association with longer procedural times and worse outcomes. If these patients can be effectively identified prior to the procedure, operators could feasibly use a non-femoral access method initially to reduce procedure time.

3025

Individual Anesthesia Provider Performance Assessment

Stephan Maman[1] and Michael Andreae
[1]Penn State Clinical and Translational Science Institute

OBJECTIVES/SPECIFIC AIMS: We developed a multilevel hierarchical statistical model which describes the association of prophylactic interventions to patient PONV risk, and provides an intuitive summary for anesthesiologists to understand how well they are adhering to PONV guidelines. METHODS/STUDY POPULATION: Accepted PONV risk factors as well as preventative interventions to reduce the PONV risk, (e.g. total intravenous anesthesia or pharmacological prophylaxis) are retrieved from the electronic medical record (EMR). Risk is regressed against interventions. Fig 1, Panel A visualizes adherence for an individual provider by plotting anesthesia cases, with PONV risk in the x-axis and the number of interventions in the y-axis. Fig 1, Panel B shows a "Jitterplot", jittering individual cases, which would otherwise plot onto the same coordinates (Panel A). The distribution of the number of interventions in each risk category is better summarized in Fig 1 Panel C by overlaying a violin plot onto the "Jitterplot". Finally, a fitted regression line provides a summary measure for the individual provider's risk-adjusted utilization of PONV prophylaxis in Fig 1, Panel D. The model can control for confounders and interactions, such as patient or procedure characteristics, such as supervision by attending physicians, institutional culture, and surgical procedure. RESULTS/ANTICIPATED RESULTS: Fig. 2, Panel A demonstrates good adherence. The provider responded to increased risk with additional interventions leading to a steep regression line. Less discriminate administration of prophylaxis is shown in Fig 2, Panel B. The graphical representation of our proposed measure of individual provider performance is intuitive, allowing us to compare adherence of two distinct groups of providers (light lines) and institutional averages (dark lines) as shown in Fig 2, Panel C. Controlling for known risk factors and potential confounders renders the assessment irrepudiable. The rigorous statistical approach allows for multi-level modeling and comparative effectiveness research, realistically evaluating process changes and interventions like CDS in the hierarchical structure of contemporary healthcare delivery. DISCUSSION/SIGNIFICANCE OF IMPACT: The strength of our novel measure of individual provider performance is its generalizability to other care settings, as well as the intuitive graphical representation of risk-adjusted individual performance. However, accuracy, precision and validity, sensitivity to system perturbations (like the implementation of CDS), and acceptance among providers remain to be evaluated. Fig 1. Risk-Adjusted Utilization of Antiemetic Prophylaxis Fig 2. Comparing Performance between Provider Groups

3429

Inpatient Palliative Care Consultation Improves Readmissions in End-Stage Liver Disease

Adeyinka Charles Adejumo[1]
North Shore Medical Center, Salem, MA

OBJECTIVES/SPECIFIC AIMS: Inpatient palliative care consultation (PCC) of terminally ill patients has been shown to improve patient's understanding of their poor prognosis. In heart failure patients, PC improves transfer to hospice (or home with hospice) and decreases readmission rates. In patients with end-stage liver disease (ESLD), factors affecting having PCC has been studied, but the impact of PCC on ESLD readmissions has not been evaluated in a nationwide analysis in the US. In this study, among patients with ESLD, we evaluate the impact of inpatient PCC on 1) 30- and 90-day readmission rates, 2) hospital charges (cost) and length of stay (LOS) during subsequent 30- and 90- day readmission. METHODS/STUDY POPULATION: All ESLD hospitalizations within the first nine months of the National Readmissions Database (2010-2014) were used in this study, to allow up to 3 months to follow up. Frequencies and yearly trends of all-cause 30- and 90-days readmissions, and of PCC referral were computed. A propensity-based greedy-algorithm was used to match (1:1) patients with PCC to those without PCC (no-PCC), to create a pseudorandomized clinical study. Comparing PCC to no-PCC, generalized estimating equations were used to estimate the adjusted odds (AOR) of 30- and 90-day readmissions, and of cost and LOS during subsequent readmissions (SAS 9.4) RESULTS/ANTICIPATED RESULTS: In the United States, from January 1st to September 30th of years 2010-2014, there were 67,271 (approximating 150,396 patients) individual records of ESLD patients who survived index hospitalization. The average annual rate of PCC was 5.4%, which steadily increased from 3.84% to 6.50% over the years (p-trend <0.0001). The average 30- and 90-day readmissions rate were respectively 34.9% and 52.3%, and both remained relatively unchanged over the years (p-trends: 0.1948 & 0.5277). After matching, index PCC was associated with 68% decreased odds for 30 day readmissions (AOR: 0.32[0.28-0.37], p-value < 0.0001). When subsequently readmitted within 30 days, previous PCC resulted in a 17% shorter stay (5.7- vs. 6.9- days, p-value:0.0014) and 30% decreased cost ($47,612 vs. $68,043, p-value:<0.0001). Similarly, index PCC was associated with 74% decreased odds for 90 day readmissions (AOR: 0.26[0.24-0.29], p-value<0.0001). With subsequently readmission within 90 days, previous PCC resulted in a 17% shorter stay (5.7- vs. 6.9- days, p-value:0.0013) and 30% decreased cost ($47,520 vs. $68,016, p-value:<0.0001). DISCUSSION/SIGNIFICANCE OF IMPACT: Patients with ESLD who received PCC had a significantly lower rate of all-cause 30- and 90- day readmissions, and consumed fewer resources (hospital stay and cost) during subsequent readmissions. Although PCC resulted in a less futile use of health care resources, its adoption is still remarkably low among ESLD patients. Studies are needed to understand the barriers to PCC and to increase its use.