Abstracts

Disclosures A. Copelan: None. J. Delgado Almandoz: 2; C; Microvention/Terumo. Y. Kayan: 2; C; Microvention/Terumo. J. Scholz: None.

P-023 SPOKE-ADMINISTERED INTRAVENOUS ALTEPLASE AND OUTCOMES FOR LARGE VESSEL OCCLUSION STROKE PATIENTS IN A HUB-AND-SPOKE TELESTROKE MODEL

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10.1136/neurintsurg-2021-SNIS.59

Introduction The role of intravenous alteplase treatment for emergent large vessel occlusion (ELVO) stroke patients who ultimately undergo endovascular thrombectomy (EVT) has been questioned in recent randomized trials. However, most patients enrolled in these trials presented directly to an EVT-capable hub center (i.e. ‘mothership’ model). We aimed to compare outcomes for ELVO patients transferred to our hub for EVT consideration who were administered alteplase at spoke hospitals (i.e. ‘drip and ship’ model) versus those who were not.

Methods ELVO stroke patients who presented to 25 spoke hospitals from January 1, 2018 to June 30, 2020 were retrospectively identified from a prospectively maintained database. Inclusion criteria were transfer for EVT consideration, spoke hospital CTA-defined ELVO, and spoke hospital Alberta stroke program early CT score (ASPECTS) ≥ 6 . ELVO was defined as occlusion of the internal carotid artery terminus, first or second segment of the middle cerebral artery, or basilar artery. Outcomes of interest included adequate reperfusion (TICI 2b-3), any intracerebral hemorrhage (ICH), hub discharge functional independence (modified Rankin scale, mRS ≤ 2), and 90-day mRS ≤ 2 .

Results Inclusion criteria were met for 258 patients. Their median age was 70 years (IQR 60-81), median NIHSS stroke scale (NIHSS) was 13 (6-19), and 50% were female. 38% were treated with alteplase at spoke hospitals, and there were no significant differences in baseline characteristics comparing those treated and those not treated except for last known well-to-Telestroke consult time (median 1.6 vs 6.7 hours, $p < 0.0001$). 44% ultimately underwent EVT at the hub with 87% achieving TICI 2b-3. Spoke-administered alteplase was not associated with ICH (OR=1.042, 95%CI=0.390,2.784, $p=0.935$) and trended toward association with greater TICI 2b-3 (OR=3.589, 95%CI=0.940,13.70, $p=0.062$). Spoke-administered alteplase independently increased the odds of discharge mRS ≤ 2 (aOR=2.568, 95%CI=1.159,5.686, $p=0.020$) and 90-day mRS ≤ 2 (aOR=3.307, 95%CI=1.591,6.874, $p=0.001$), even when controlling for last known well, NIHSS, and EVT in multivariable models.

Conclusion In this cohort of 258 patients who first presented to spoke hospitals as potential EVT candidates with CTA-defined ELVO and ASPECTS ≥ 6 , treatment with intravenous alteplase at spoke hospitals before transfer significantly increased the odds of discharge and 90-day functional independence without increasing the odds of ICH. Intravenous alteplase should not be withheld from ELVO patients who first present to spoke hospitals capable of its administration but requiring transfer for EVT. Additional studies are warranted to confirm benefits of spoke-

administered alteplase in other hub-and-spoke models and to understand the minimum distance and transfer time associated with benefit.

Disclosures R. Regenhardt: None. J. Rosenthal: None. A. Awad: None. N. Nolan: None. J. McIntyre: None. C. Whitney: None. N. Alotaibi: None. J. Vranic: None. C. Stapleton: None. A. Patel: None. N. Rost: None. L. Schwamm: None. T. Leslie-Mazwi: None.

P-024 NATIONAL TRENDS IN ENDOVASCULAR AND SURGICAL TREATMENT OF IDIOPATHIC INTRACRANIAL HYPERTENSION

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10.1136/neurintsurg-2021-SNIS.60

Introduction/Purpose Patterns in utilization and characteristics of endovascular venous stenting (EVS) for Idiopathic Intracranial Hypertension (IIH) are unknown. We aimed to explore the frequency and characteristics of EVS for IIH in the United States, and to compare with admissions undergoing Optic nerve sheath fenestration (ONF) or Shunting.

Materials and Methods In this retrospective longitudinal cross-sectional analysis, hospitalizations with a diagnosis of IIH were identified in the National Inpatient Sample (2010-2017), excluding venous thrombosis and other causes of intracranial hypertension. Temporal trends in utilization of EVS, ONF, and shunt procedures were explored. Logistic regression was used to measure differences according to age, race, sex, and other patient and hospital-level characteristics.

Results Between 2010 and 2017, 784 EVS, 352 ONF and 11803 shunting procedures were identified for the treatment of IIH. Among those undergoing EVS, median age was 32 (IQR 28-40), 93.1% were women, and 73.5% of EVS procedures were elective admissions. Total IIH-related hospitalizations increased from 11350 in 2010 to 24684 in 2017. Patient age, sex or race were not associated with EVS use, but urban-teaching hospital setting, and larger

Abstract P-024 Figure 1

hospital size were independently associated with EVS utilization. EVS increased significantly and continuously from 2010 to 2017 (p for trend <0.001) whereas shunting and ONF use remained stable (Abstract 24 figure 1). Length of hospital stay was considerably lower following EVS (median 1, IQR 1-2) as compared to ONF (median 4, IQR 2-7) and shunting procedures (median 2, IQR 1-4) ($p<0.01$).

Conclusion This study presents novel population-level data on national trends in the frequency and characteristics of venous stenting in IIH. EVS was associated with shortest length of hospital stay. A continuous increase in venous stenting with a relative stable use of shunting and ONF suggests an increasing role for endovascular therapies in IIH.

Disclosures H. Saber: None. R. Jahan: 2; C; Medtronic, Balt. S. Tateshima: 2; C; Medtronic, Stryker, Cerenovus. G. Colby: 2; C; Stryker, MicroVention, Medtronic. N. Kaneko: None. M. Nour: None. V. Szeder: None. K. Khatibi: None. L. Ponce Mejia: None. D. Liebeskind: 2; C; Stryker. G. Duckwiler: 2; C; Medtronic.

P-025

LARGE SCALE, CT EVALUATION CAN IMPROVE ACCESS TO IMAGING STUDIES WITHIN MULTI-CENTER STROKE TRIALS

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10.1136/neurintsurg-2021-SNIS.61

Introduction Artificial intelligence (AI) can automate the detection and triage of Intracerebral Hemorrhage (ICH). Early Minimally Invasive Removal of Intracerebral Hemorrhage (ENRICH) is a RCT evaluating the efficacy of minimally invasive surgery (MIS) for ICH. AI ENRICH is a prospective trial operating within and in parallel to the ENRICH trial that utilizes an AI application, Viz RECRUIT ICH Volume, to

identify and segment ICH to quickly identify potentially eligible subjects.

Methods Non-contrast CT scans performed at 5 participating US hospitals were evaluated specifically for a parenchymal hemorrhage by Viz RECRUIT ICH Volume. Participating health care professionals downloaded a phone application that allowed users to be notified for any hemorrhage ≥ 5 mL. Time metrics included the onset of CT scan, phone alert, and user recognition of that alert.

Results Over a combined period of 374 days, 24,137 CT scans were evaluated by the Viz ICH VOLUME application. Of these, 817 CT scans were determined to contain an ICH yielding a total of 154 patients that met ENRICH criteria for trial inclusion (30-80 mL). The median time from CT scan to cell phone notification was 2.6 minutes. The median time from cell phone notification to the user viewing the CT scan was 2.95 minutes.

Conclusions Viz ICH VOLUME can screen large numbers of CT scans and send alerts within minutes to medical professionals searching for clinical trial candidates in time-sensitive environments. Studies relying on radiographic selection criteria may benefit from automated screening.

Disclosures B. Jankowitz: 2; C; Stryker, Medtronic. J. Davies: None. J. Day: None. S. Chowdhry: None. C. Schirmer: None. N. Levkovitz: 5; C; Viz.ai. O. Bibas: 5; C; Viz.ai. E. Blanc: 5; C; Viz.ai. G. Pradilla: None.

P-026

AQUA EMBOLIC SYSTEM: EVALUATING THE PERFORMANCE OF A NEW LIQUID EMBOLIC SYSTEM USING A SWINE AVM MODEL

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10.1136/neurintsurg-2021-SNIS.62

Introduction Currently available Liquid Embolic Materials (LEMs) have limitations of potential catheter entrapment or

Abstract P-026 Figure 1 Angiographical evaluation of AES using swine rete-mirabile