SAFETY OF TICAGRELOR HYPER-RESPONSE (PRU 30-40, 4 cases (17%) had a PRU 20–29, 3 cases (13%) had a PRU 10–19, while the remainder 14 cases (61%) had a PRU <10. 83% (n=19) were located in the anterior circulation, 4 (17%) in the posterior circulation. Aneurysms treated included 11 (48%) internal carotid artery, 3 (13%) middle cerebral artery, 5 (22%) anterior cerebral artery, 1 (4%) vertebral artery, 3 (13%) basilar artery aneurysms. No major strokes were observed in the first 30 days after each case, and all patients were discharged at their mRS baseline.

Conclusion Ticagrelor hyper-response (PRU < 40) during cerebral aneurysm FD procedures is not associated with the high rates of symptomatic hemorrhage as previously reported with clopidogrel. This further supports the utilization of ticagrelor and raises doubts as to the need for routine P2Y12 testing with its use.

Disclosures J. Campos: None. D. Zarrin: None. B. Meyer: None. K. Golshani: None. N. Beaty: 2; C; Proctor for Medtronic Neurovascular, Stryker Neurovascular, CMO of Neuro-Medica. M. Bender: None. G. Colby: 2; C; Consultant for Medtronic Neurovascular, MicroVention-Terumo, Stryker Neurovascular. L. Lin: 2; C; Consultant/Proctor: Medtronic Neurovascular, Stryker Neurovascular, MicroVention-Terumo, Rapid Medical, Bolt. A. Coon: 2; C; Consultant/Proctor: Avail MedSystems, Imperative Care, InNeuroCo, Medtronic Neurovascular, MicroVention-Terumo, Q’apel, Rapid Medical, Stryker Neurovascular, Sequent Medical.

Abstracts

E-274 SAFETY OF TICAGRELOR HYPER-RESPONSE (P2Y12 PRU < 40) IN CEREBRAL ANEURYSM FLOW DIVERSION: EXPERIENCE IN 23 CONSECUTIVE CASES

Background Studies over the past decade have demonstrated that clopidogrel hyper-response (P2Y12 Platelet Reaction Unit, PRU < 40) in cerebral aneurysm flow diverter (FD) cases is associated with potentially deadly hemorrhagic complications. Ticagrelor has become the preferred agent in recent years at many institutions due to its high potency (lower PRUs) and lack of resistance as compared to clopidogrel. We report here the first known series of FD cases with ticagrelor hyper-response.

Methods We retrospectively reviewed a prospectively-maintained IRB-approved institutional database of the senior authors to identify consecutive cases where patients undergoing cerebral FD treatment on dual antiplatelet therapy with ticagrelor and aspirin had a documented preprocedural PRU of < 40 (hyper-response). Case details were recorded including patient demographics, aneurysm type, device used, and periprocedural events and complications.

Results Over the 12-month study period (January 2021 to 2022), 23 cases of hyper-response were identified (PRU <40). Average patient age was 16 +/- 16 years old (range 22–81 years). Average PRU of all cases was 13 +/- 11 (range 0–40), Of all cases with pre-operative PRU <40, 2 cases (9%) had a PRU 30–40, 4 cases (17%) had a PRU 20–29, 3 cases (13%) had a PRU 10–19, while the remainder 14 cases (61%) had a PRU <10. 83% (n=19) were located in the anterior circulation, 4 (17%) in the posterior circulation. Aneurysms treated included 11 (48%) internal carotid artery, 3 (13%) middle cerebral artery, 5 (22%) anterior cerebral artery, 1 (4%) vertebral artery, 3 (13%) basilar artery aneurysms. No major strokes were observed in the first 30 days after each case, and all patients were discharged at their mRS baseline.

Conclusion Ticagrelor hyper-response (PRU < 40) during cerebral aneurysm FD procedures is not associated with the high rates of symptomatic hemorrhage as previously reported with clopidogrel. This further supports the utilization of ticagrelor and raises doubts as to the need for routine P2Y12 testing with its use.

Disclosures J. Campos: None. D. Zarrin: None. B. Meyer: None. K. Golshani: None. N. Beaty: 2; C; Proctor for Medtronic Neurovascular, Stryker Neurovascular, CMO of Neuro-Medica. M. Bender: None. G. Colby: 2; C; Consultant for Medtronic Neurovascular, MicroVention-Terumo, Stryker Neurovascular. L. Lin: 2; C; Consultant/Proctor: Medtronic Neurovascular, Stryker Neurovascular, MicroVention-Terumo, Rapid Medical, Bolt. A. Coon: 2; C; Consultant/Proctor: Avail MedSystems, Imperative Care, InNeuroCo, Medtronic Neurovascular, MicroVention-Terumo, Q’apel, Rapid Medical, Stryker Neurovascular, Sequent Medical.


Background and Purpose With the drastically aging population in the U.S., non-traumatic subacute and chronic subdural hematomas (sacSDH) are projected to represent the most common neurosurgical diagnosis requiring treatment within the next two decades. The Premier Healthcare Database (PHD) is an all-payer database comprising about 20% of U.S. inpatient discharges from over 800 U.S. hospitals since 2012.

Objective To portray current mortality rates, complication rates, and length of stay with inpatient sacSDH care.

Methods The PHD (Premier Inc., Charlotte, NC) was queried for encounters between 10/2016 and 12/2020 with the ICD-10 diagnoses I62.00, I62.02, I62.03 to cover non-traumatic as well as non-acute subdural hematoma as the principal diagnosis among patients age ≥ 40 years. Medical and surgical treatment was compared. In-hospital mortality is defined as an inpatient who is not discharged. Complications represent medical conditions not present on admission that affect mortality, length of stay, and costs within the database. Length of stay represents time spent as an inpatient. Distributions were estimated by yearly strata and compared using Student’s t-tests.

Results The query identified up to 14,136 inpatient encounters. Between 10/2016 and 12/2020, in-hospital mortality rates averaged 10.9% in the medical group (MG) and 3.6% in the surgical group (SG) (p<0.001). Complication rates averaged...
between 8.9% in the MG and 19.9% in the SG (p<0.0001). LOS averaged 3.0 days in the MG and 5.7 days in the SG (p<0.0001). Total costs averaged $10,233 in the MG and $26,658 in the SG. Among all encounters, 4570/14,136 (32.3%) were ≥ 80 years. Here, mortality and complication rates in the MG (12.5% and 9.5%, respectively) and the SG (4.6% and 23.5%) were higher than in patients aged 40 - 59 and 60 - 79.

Conclusion The standardized outcomes presented represent an objective benchmark of contemporary sacSDH treatment outcomes in the U.S. It remains to be determined whether new treatment strategies such as middle meningeal embolization yield significant benefits to flatten the impending healthcare burden of sacSDH.

Disclosures P. Hendrix: None. I. Melamed: None. O. Goren: None. G. Weiner: None. C. Schirmer: None.

Abstract E-276

TEMPORAL CHANGE IN ENHANCEMENT OF INTRACRANIAL ATHEROSCLEROTIC PLAQUES POST GADOLINIUM ADMINISTRATION

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Introduction Magnetic resonance vessel wall imaging is used to evaluate plaque activity in patients with intracranial atherosclerotic disease (ICAD). ICAD plaques are qualitatively compared to other intracranial tissues, and the degree of enhancement is used to differentiate between symptomatic and asymptomatic plaques. However, the optimum time for evaluating plaque enhancement after contrast injection is not standardized and may vary depending on the biodistribution of contrast in different cranial structures. We aim to assess contrast distribution in cranial/intracranial tissues and ICAD plaques at early (5 minutes) and delayed (20 minutes) post-contrast scans, qualitatively and quantitatively.

Methods IRB approval was obtained. Inclusion criteria were patients with confirmed ICAD plaques and pre-contrast, early post-contrast (5 minutes), and delayed post-contrast (20 minutes) T1-SPACE sequences. Standardized diameter (2 mm) regions of interest (ROIs) were used to evaluate the cavernous sinus (CS), temporalis (TM), pituitary infundibulum (PI), choroid plexus (CP), and intracranial plaques (ICAD-P). Measurements were acquired in pre-contrast, early post-contrast, and delayed post-contrast T1-SPACE sequences for each patient. Plaque enhancement was qualitatively assessed relative to the pituitary infundibulum. (0 = No enhancement, 1 = enhancement less than PI, 2 = Enhancement equal to or more than PI). Means were compared using one-way repeated ANOVA in SPSS version (27) and p-value was set at 0.05.

Results 10/16 patients met all inclusion criteria. A total of 18 ICAD plaques were analyzed. Plaques and the reference structures demonstrated a statistically significant increase in signal intensity from pre-contrast scans to early post-contrast scans and delayed post-contrast scans on T1 SPACE sequence. While ICAD plaques demonstrated an increase in signal intensity in delayed vs early post-contrast T1 SPACE scans (P = 0.044 ), the PI demonstrated a decrease in signal intensity (P = 0.045). No statistically significant change in mean signal intensity was observed in the other reference structures.

Conclusion Contrast enhancement gradually increased in plaques from early to delayed post-contrast scans, as opposed to the pituitary infundibulum, which demonstrated a significant decrease, while other cranial structures showed no changes. This could lead to false positive plaque enhancement if judged qualitatively on delayed imaging especially if using pituitary infundibulum as reference/control.


Abstract E-276 Table 1

<table>
<thead>
<tr>
<th>Location</th>
<th>Pre-contrast (5mins)</th>
<th>Early Post-contrast (20mins)</th>
<th>Early-Pre (mean)</th>
<th>P-value</th>
<th>Delayed-Pre (mean)</th>
<th>P-value</th>
<th>Delayed-Early (mean)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cav Sinus (CS)</td>
<td>95.26</td>
<td>221.67</td>
<td>203.74</td>
<td>&lt;0.001</td>
<td>108.47</td>
<td>&lt;0.001</td>
<td>-17.933</td>
<td>0.065</td>
</tr>
<tr>
<td>Pituitary (PI)</td>
<td>112.59</td>
<td>211.37</td>
<td>193.27</td>
<td>&lt;0.001</td>
<td>80.667</td>
<td>&lt;0.001</td>
<td>-18.100</td>
<td>0.045</td>
</tr>
<tr>
<td>Temporalis (TM)</td>
<td>63.67</td>
<td>97.97</td>
<td>93.80</td>
<td>&lt;0.01</td>
<td>30.123</td>
<td>0.018</td>
<td>-4.166</td>
<td>1.000</td>
</tr>
<tr>
<td>Choroid plexus (CP)</td>
<td>89.10</td>
<td>176.37</td>
<td>167.40</td>
<td>&lt;0.001</td>
<td>78.300</td>
<td>0.002</td>
<td>-8.967</td>
<td>0.664</td>
</tr>
</tbody>
</table>

Plaques (ICAD P) 86.80 146.19 154.17 59.383 0.001 67.361 <0.001 7.0978 0.044