High Prevalence of Pro-thrombotic Conditions in Adult Patients with Moyamoya Disease and Moyamoya Syndrome: A Single Center Study

Tony S. Larson, BS; Lorenz Rinaldo, MD, PhD; Giuseppe Lanzino, MD; James Klaas

INTRODUCTION: Moyamoya Disease (MMD) and Moyamoya Syndrome (MMS) have been reported to be associated with pro-thrombotic states in some patients. To date, however, such reports have been limited to case reports or small case series.

METHODS: We retrospectively reviewed the medical records of all patients who were diagnosed with MMD or MMS from our institution. In addition to basic demographic and clinical data, the presence of certain pro-thrombotic conditions was noted. The presence of such conditions was determined based on review of clinical diagnoses and laboratory reports.

RESULTS: Out of a total of 233 patients diagnosed with MMD or MMS, 36 were found to have a concomitant pro-thrombotic condition (15.5%). 97.0% of all patients found to have pro-thrombotic conditions were over 18 years of age. Of 181 patients with MMD, 25 were found to have a pro-thrombotic condition (13.8%). This was similar to the MMS cohort in which 11 out of 52 total patients (21.2%) had a concomitant pro-thrombotic condition. There were no differences in specific pro-thrombotic conditions between MMD and MMS cohorts.

CONCLUSION: It is likely that both MMD and MMS are associated with or predispose to pro-thrombotic conditions in adult patients. Further study is needed in order to further elucidate and characterize this potential association.

COVID-19 Associated Encephalopathies and Cerebrovascular Disease: The New Orleans Experience

Tyler Scullen, MD; Joseph R. Keen, DO; Mansour H. Mathkour, MD; Lora W. Kahn, MD

INTRODUCTION: The coronavirus disease 2019 (COVID-19) pandemic that is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection has had a dramatic impact on healthcare systems and a variable disease course. Emerging evidence demonstrates that SARS-CoV-2 is associated with central nervous system (CNS) disease. In this series, we describe CNS manifestations in critical COVID-19 patients at our tertiary academic center.

METHODS: A single center retrospective cross-sectional analysis of all patients admitted to our tertiary care academic center in New Orleans, Louisiana on April 22, 2020, who were in critical condition due to COVID-19 and developed new onset of neurological disease. Patients were grouped into one of three categories according to imaging and clinical features: encephalopathy, acute necrotizing encephalopathy, and vasculopathy.

RESULTS: A total of 27 of 76 (35.5%) critical COVID-19 patients met inclusion criteria. Mean age was 59.8 years (range 35–91 years) and most had an underlying medical condition, including hypertension (63%), diabetes mellitus type 2 (52%), obesity (26%), and/or chronic kidney disease (22%). Sixty three percent had evidence of neurological injury on CT, 30% on MRI, 15% on non-invasive vascular imaging, and 44% on EEG. CT findings most often included subacute ischemic strokes, diffuse hypointenation, subcortical parenchymal hemorrhages, and focal hypodensities within deep structures. MRI findings included diffuse involvement of deep white matter, the corpus callosum, and the basal ganglia. For patients with acute ischemic stroke, vascular findings consisted of irregular proximal focal stenosis of the suprachnoid internal carotid artery. Twenty patients (74%) were designated with COVID-19 associated encephalopathy, two (7%) with COVID-19 associated acute necrotizing encephalopathy, and five (19%) with COVID-19 associated vasculopathy.

CONCLUSION: A one-day snapshot of COVID-19 admissions at a tertiary academic center in New Orleans, LA revealed a high percentage of patients with new neurological disease. Although clinical presentations varied, they were broadly categorized. A better understanding of the neurological sequelae and radiographic findings will help clinicians mitigate the impact of this disease.

The impact of the Implementation of a MSU on a Stroke Cohort

Joshua Weinberg; Ahmad Sweid, MD; John Roussis; Maureen DePrince; Stavropoula I. Tjoumakaris, MD; M. Reid Gooch, MD; Nabeel Herial; Hekmat Zarzour, MD; Robert H. Rosenwasser, MD; Pascal Jabbour, MD

INTRODUCTION: Mobile stroke units (MSUs), specialized ambulances with a built-in computed tomography (CT) scanner and telemedicine connected stroke team, have been on the rise in recent years largely due to the ‘time is brain’ concept.

METHODS: We conducted a retrospective analysis of a prospectively maintained database of all MSU dispatched cases from August 2019 to March 2020.

RESULTS: Of 182 MSU responses, 96 were treated and transported by the MSU. The mean time (hr: mm) of dispatch to scene arrival was 0:07 + 0:03, scene arrival to CT start was 0:10 + 0:03, CT start to telenuro start was 0:05 + 0:03, telenuro start to scene departure was 0:06 + 0:05, scene departure to hospital arrival was 0:12 + 0:06, and hospital arrival to arterial puncture was 2:59 + 1:01. The mean time of dispatch to arterial puncture was 3:34 + 1:02. The mean telenuro consult duration was 0:04 + 0:02. The mean time of last know well (LKW) to tPA administration was 1:28 + 0:48 with 5 (45.5%) patients receiving tPA within 60 min of LKW and 3 (27.3%) patients receiving tPA within 90 min. The mean time of dispatch to tPA was 0:37 + 0:09 and scene arrival to tPA administration was 0:28 + 0:07.

CONCLUSION: MSUs may expedite each step along the stroke standards of care. In theory, this should drastically improve functional outcomes. However, the impact on functional outcomes or reductions in stroke-related morbidity is still unknown.

Impact of Clot Location on Outcomes after Mechanical Thrombectomy for Anterior Circulation Acute Ischemic Stroke: A Meta-Analysis