Cerebrovascular Complications of COVID-19

Key Findings

- Increased stroke severity
- Outcomes worse than non-COVID-19 strokes

Management

- No increase in risk of hemorrhage with thrombolysis in AIS
- Mechanical thrombectomy should be performed in eligible candidates with large vessel occlusion
- No differences in management of ICH, SAH, and CSVT as compared with patients without COVID-19

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TYPES OF STROKE

- Cerebral Infarction
  - Acute Ischemic Stroke
  - Cerebral Sinus Venous Thrombosis
- Hemorrhagic
  - Intracerebral Hemorrhage
  - Cerebral Sinus Venous Thrombosis
  - Subarachnoid Hemorrhage

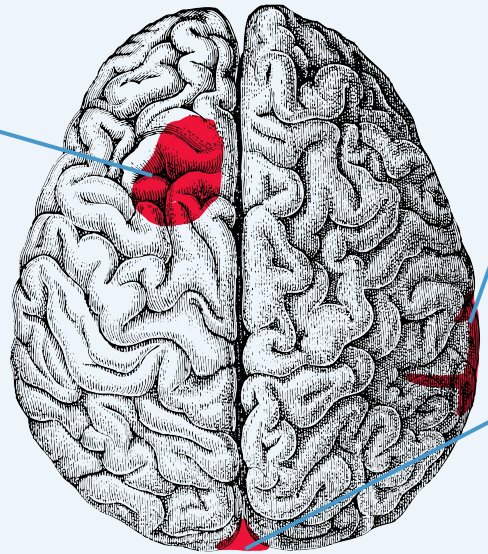
ACUTE ISCHEMIC STROKE (AIS)

- **Mechanisms**
  - Endotheliopathy and microvascular injury
  - Cardioembolism from cardiac injury, arrhythmias, bacterial endocarditis
  - Atherosclerotic plaque rupture from inflammation
  - Vessel dissection from inflammation
  - Paradoxical embolism from VTE
- **Incidence and Risk Factors**
  - 1.4% of all patients with COVID-19
  - Higher comorbidity burden
  - Males more than females

HEMORRHAGIC STROKES

INTRACEREBRAL HEMORRHAGE (ICH)

- Less common than AIS
- <20% of strokes in patients with COVID-19
- **Characteristics and Outcomes**
  - Frequent lobar location, multifocality, history of anticoagulation
  - Longer length of stay and higher mortality than patients with ICH and without COVID-19



SUBARACHNOID HEMORRHAGE (SAH)

- Rare; risk similar as compared with general population
- Longer length of stay and higher mortality than patients without COVID-19

CEREBRAL SINUS VENOUS THROMBOSIS (CSVT)

- Not very common
- 0.08% of all patients with COVID-19
- Very rarely may CSVT be seen in patients post vaccination (vaccine-induced thrombocytopenia)