Hyperacute Ischemic Stroke Management Goals:

- To limit the irreversible ischemic damage after an acute ischemic stroke by restoring blood flow to the artery occluded by the clot.
- Time is Brain – 1.9 Million Brain Cells die each minute – equates to 1 week of healthy life lost.
- There are two mechanisms to restore blood flow to the artery:
  - IV thrombolysis
  - Stroke Mechanical Thrombectomy
- These can be utilized alone or in combination

Stroke Mechanical Thrombectomy – Evidence:

- Five stroke mechanical thrombectomy research trials changed the hyperacute management of patients with large proximal artery occlusions (Internal Carotid Artery, Middle Cerebral Artery, Anterior Cerebral Artery and Vertebral Artery or Basilar Artery). These trials found that patients who underwent stroke mechanical thrombectomy had statistically significant benefits versus the control group.
- Patients who underwent stroke mechanical thrombectomy were:
  - More likely to be independent
  - Less likely to die as a result of their stroke
  - No difference in symptomatic intracerebral hemorrhage
- A pooled analysis of the five trials, found that stroke mechanical thrombectomy was beneficial for:
  - Men and Women equally
  - All Age Groups
  - All Anterior Circulation Large Artery Stroke
  - All Stroke Severities
  - Whether the patient got tPA or not or had contraindications
  - It showed benefit of the treatment up to 7.3 hours from last seen well
- The Canadian Hyperacute Best Practice Recommendations (2015) found that Stroke Mechanical Thrombectomy is the standard of care for patients with large proximal artery ischemic strokes identified in CTA who can be treated within:
  - Six hours of onset of symptoms/last seen well
  - Selected patients with disabling stroke presenting between 6 and 12 hours of symptom onset, including those with stroke symptoms upon awakening, who meet clinical and imaging criteria
- Two research trials evaluated the mechanical thrombectomy between 6 – 24 hours (DAWN) and 6 to 16 hours (DEFUSE3) in patients with large proximal artery occlusion that had small size of infarct identified on CT Perfusion. The studies found similar outcomes when compared to the previous EVT research trials. The implications of these results to our current protocol are being determined.
Post Procedure Care of the Stroke Mechanical Thrombectomy Patient

- Stroke Mechanical Thrombectomy cases are admitted to 7WSDU post procedure with the tPA MD as the MRP. These patients are considered part of 7 South demands. When the patient is considered stable they will be discharged from SDU. During the day, the stroke navigator will pull the patients to 7 South, whereas overnight 7 West may require the patient to be transferred to 7 south to create SDU capacity. The minimum time the patient should stay in the 7WSDU post procedure is 4 hours. There should be an order indicating patient is discharged from SDU by either the MRP or 7WSDU Coordinator prior to transfer to 7 South.

Post Procedural Management:

- Sheath Site Complications – these usually occur within the first 24 – 48 hours post femoral sheath removal. Vascular closure devices have decreased the incidence of complications but still require monitoring.
  - Monitor puncture site for the first 24 – 48 hours post procedure:
    - Bruising/Hematoma – mark it
    - Pseudo-aneurysm – pulsatile, thrill or audible bruit
    - Retroperitoneal bleed – flank/back pain, abdominal distension, decreased urinary output, gradual sometimes insidious decline in BP – Medical emergency
    - Evaluate vascular perfusion doing regular peripheral pulse checks
- Monitor Kidney Function as the patient has received CT Contrast for the CTA and during the procedure. Ensure adequate hydration either orally or via IV to flush contrast from kidneys
- Monitor for Fluid Overload/CHF as the patient may have received IV boluses to keep blood pressure elevated to maintain adequate cerebral perfusion
- Monitor for tPA complications if patient received tPA
- Monitor for cardiac arrhythmias post procedure - Serial ECG X 3 and irregular pulse
- Blood pressure – BP will normally fall 20 mmHg and it should be maintained between 140 and less than 180 depending on the patient’s norm
- Antithrombotic Therapy and Venous Thromboembolism Prophylaxis generally held for 24 hours post procedure. Wait until follow-up CT shows no bleeding to consider starting
- Repatriate to Local Stroke Centre for regional cases

References