

ACUTE STROKE MANAGEMENT 2019 GUIDELINES

THROMBECTOMY:

INDICATIONS:

- **Acute ischemic stroke with onset < 6 hours with all the following:**
 - ICA or M1 occlusion
 - mRS < 2
 - NIHSS \geq 6
 - ASPECTS \geq 6
- **Acute ischemic stroke with onset 6-24 hours with LVO:**

Only for ICA/MCA occlusion, needs CTP to screen for salvageable penumbra using one of the following criterias:

 - **DAWN Criteria: (used clinical imaging mismatch in patients presenting 6-24h)**
 - Pre-stroke mRS < 2
 - Anticipated life expectancy > 6 months
 - NIHSS \geq 10
 - < 1/3 MCA core infarction
 - Clinical imaging mismatch:
 - < 80-year: Core < 30 with NIHSS \geq 10 or Core 30-50 with NIHSS \geq 20
 - > 80-year: Core < 20 with NIHSS \geq 10
 - Excluded: cervical ICA occlusion, PCA/ACA occlusion, dissection, tortuous vessels.
 - **DEFUSE 3 Criteria: (used perfusion-core mismatch in patients presenting 6-16h)**
 - Age < 90
 - Imaging mismatch: If Core < 70 ml and mismatch ratio > 1.8 with at least 15 ml of viable penumbra.
 - No pre-existing terminal or debilitating illness

DO'S AND DON'T DO'S IN ACUTE STROKE ACTIVATION:

DO:

- Get CTA along with initial CT in thrombectomy candidate patients, as long as it is not going to markedly delay tPA.

DON'T:

- Don't wait for creatinine before CTA in patients with no known prior kidney disease

QUESTIONS:

Q1: Is thrombectomy safe for patients > 80 years old?

- HERMES meta-analysis did show that thrombectomy is equally effective in patients above and below 80 years old.

Q2: What about other patients, mRS > 1 or ASPECTS < 6 or NIHSS < 6 who present within 6 hours ?

- No studies done on these patients. It may be reasonable to do thrombectomy for selected patients, decision will be deferred to on call neurologist.

Q3: What about M2 and M3?

- Strong data showed benefits from thrombectomy for ICA and M1 occlusion. Although no data for M2/M3 but it still can be done if there is marked disability.

Q4: What about vertebral, basilar, PCA and ACA?

- Although no studies are available to assess risk versus benefits, thrombectomy may be reasonable.

Q5: Clot aspiration versus stent retrieval, any difference?

- COMPASS study did show that aspiration is not-inferior to stent retrieval for thrombectomy, either one can be used.

Q6: patient came between 6-24h, what is the maximum core infarction for thrombectomy?

- Depends, either 50 ml if you use Dawn criteria (clinical-imaging mismatch) or 70 ml if you use Diffuse3 criteria (core-penumbra mismatch ratio > 1.8).

Q7: So if Core infarction < 50, then how much penumbra needed for thrombectomy:

- Depends: penumbra used only for DIFFUSE3 criteria with mismatch ratio >1.8 and minimum penumbra 15 ml.
- If you use clinical-imaging mismatch then penumbra doesn't matter as long a NIHSS is way worse than expected for the core infarction (NIHSS > 10 or 20, see above).

Summary of thrombectomy indications:

	0–6 hours	6–16 hours	16–24 hours
Thrombectomy Indicated	<p>All LVO patients with:</p> <ul style="list-style-type: none"> ▪ ICA or M1 occlusion ▪ mRS < 2 ▪ ASPECTS >= 6 ▪ NIHSS >= 6 	<p>Same as 0–6 hours plus meeting one of the following criteria:</p> <p>DIFFUSE3:</p> <ul style="list-style-type: none"> ▪ Imaging mismatch: Core < 70 ml and mismatch ratio > 1.8 with at least 15 ml of viable penumbra <p>DAWN:</p> <ul style="list-style-type: none"> ▪ NIHSS >= 10 ▪ < 1/3 MCA core infarction ▪ Clinical imaging mismatch 	<p>Same as 0 – 6 hours plus meeting criteria for DIFFUSE.</p> <p>DIFFUSE3:</p> <ul style="list-style-type: none"> ▪ Imaging mismatch: Core < 70 ml and mismatch ratio > 1.8 with at least 15 ml of viable penumbra
Thrombectomy Reasonable	<p>In the following situations:</p> <ul style="list-style-type: none"> ▪ M2, M3, vertebral, basilar, PCA or ACA occlusion ▪ mRS > 1 ▪ ASPECTS < 6 ▪ NIHSS < 6 		