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## Recurrent Thrombectomy in Patients with Prior Mechanical Endovascular Revascularization: A Single Center Experience

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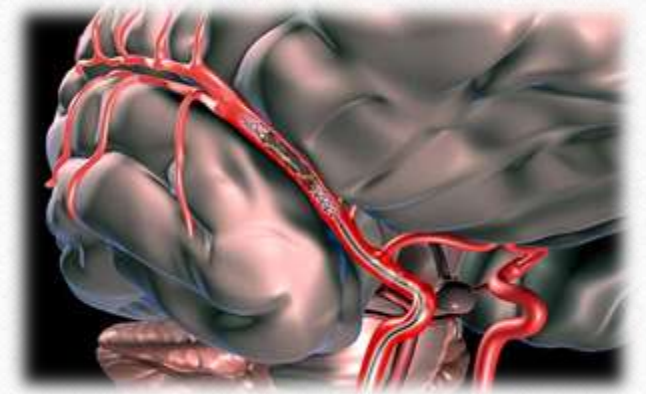
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# Introduction

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- Mechanical endovascular reperfusion therapy (MER) is now the standard of care for treatment of large vessel occlusion (LVO) acute ischemic stroke.



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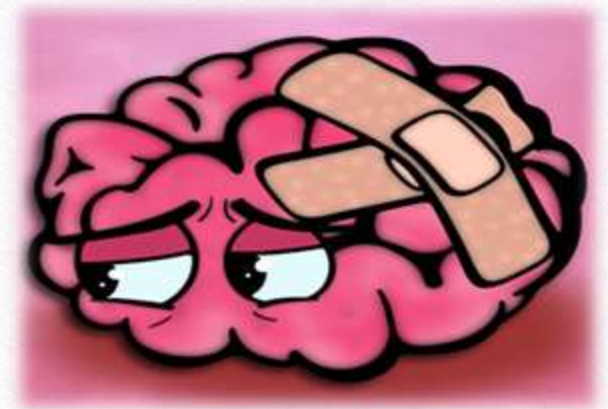
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- Nearly 25% of all stroke patients have a recurrent event within 5 years.



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But what about recurrent LVO ?



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- In 2017 Bosulma et.al studied 697 patients who underwent endovascular, Fifteen (2%) of treatment for acute ischemic stroke (AIS) over the study period were treated with RT.
  - Successful reperfusion was achieved in 14/15 patients after the first thrombectomy and in all patients after RT.
  - No parenchymal hemorrhage was observed after the first procedure and two were noted after the repeated intervention.
  - The rate of good clinical outcome at 90 days in RT patients was 60% and their 90-day mortality rate was only 20%



## Methods:

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- We conducted case series study of Henry ford health system endovascular database for patients who underwent RT from March 2016 till March 2018.
- Demographic data, clinical presentation, imaging, procedural data and clinical outcomes were evaluated.

## Results:

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- Of the total 145 patients with AIS that received MER, 8 (5.5%) RT occurred in 5 patients.
- Mean age was  $67 \pm 21$  years. Four of the five patients were females.
- All five patients achieved successful reperfusion (TICI 2b-3).
- Three patients underwent one RT, one had two RT, and one had three RT.
- Cardio-embolic source (80%) was the most common etiology and ESUS etiology was (20%).

## Results cont.

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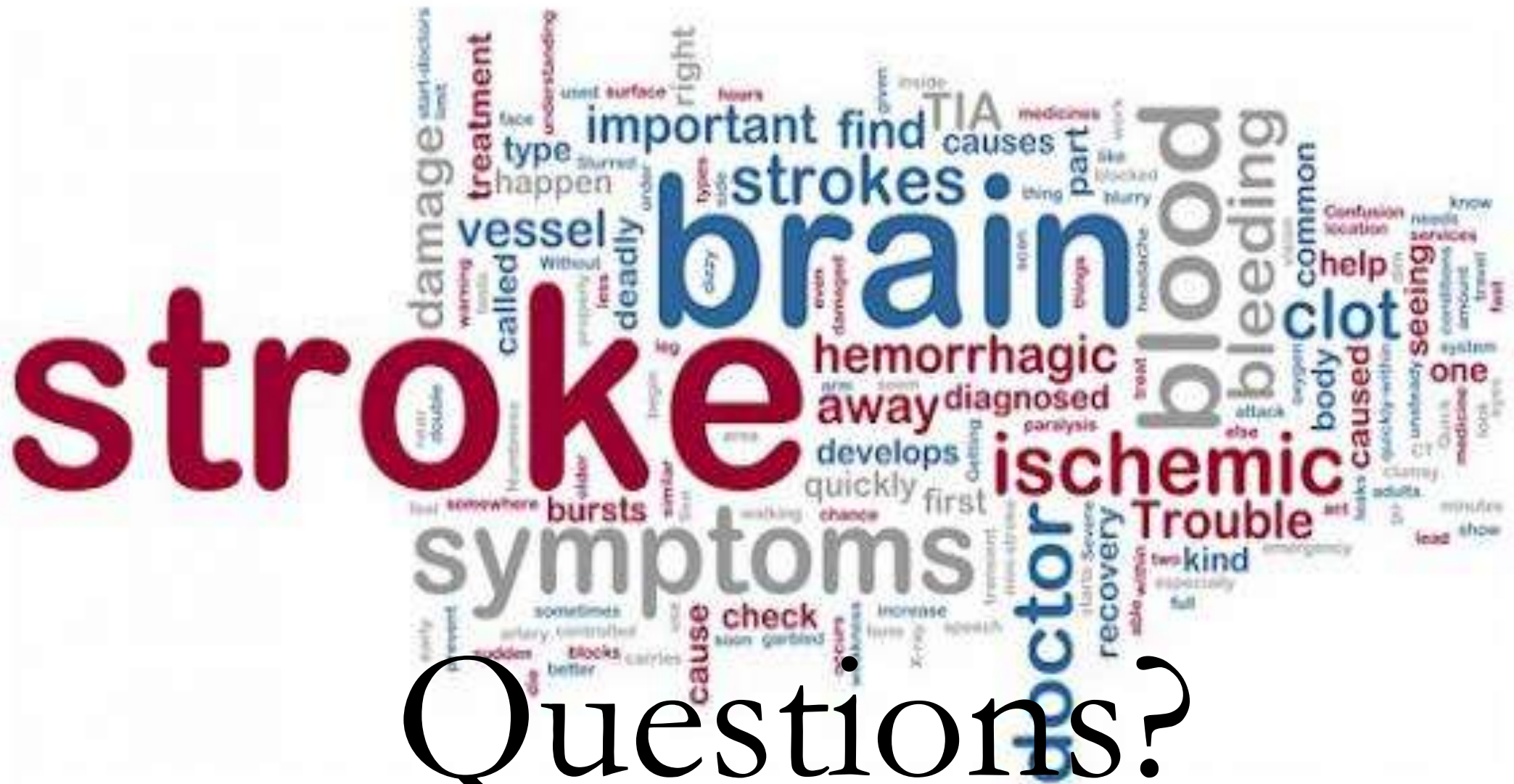
- The time between the first to last MER for each patient ranged from 3 days to 2 years.
- All patients were optimized on their medical therapy after the first stroke.
- Four of the five patients (80%) had RT in the same vascular territory.
- One patient had post-procedure focal high-grade stenosis after the 3<sup>rd</sup> intervention in the same artery that was treated later with elective angioplasty.
- One RT was complicated with fatal intracranial hemorrhage due to late presentation despite presence of large area of penumbra.
- Average 3 months follow up MRS was 2.



## Conclusion:

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- In patients presented with recurrent LVO, RT appears to be effective and relatively safe. Based on the available literature, prior MER should not discourage aggressive treatment that may potentially lead to a good clinical outcome.
- It is unclear if prior MER therapies cause endothelial injury leading to a predilection for local in-situ thrombus or denovo stenosis formation predisposing to re-occlusions.
- The risk of reperfusion injury in a recently infarcted territory should be weighted carefully when considering as hemorrhagic complications remain possible.



Questions?

An anatomical illustration of a human vascular system, showing a complex network of red and blue vessels. The red vessels represent oxygenated blood, and the blue vessels represent deoxygenated blood. The vessels are shown branching and connecting, with a prominent red vessel in the foreground. The illustration is set against a white background and is framed by a thin white border. The text "THANK YOU" is overlaid in the center in a black, serif font. The entire image is set against a dark background with a blurred anatomical structure at the top and bottom.

THANK YOU