Acute Stroke and Ipsilateral Carotid Disease

**STRATEGIES**

- Immediate Treatment < 1 week
- Intermediate Treatment 2-4 weeks
- Delayed Treatment – 4 to 6 weeks

**CEA for Acute Stroke**

*Case for Early intervention*

- Up to 20% of Stroke patients have had TIA
- Up to 40% of these TIA’s occur within one week of stroke
- Delay of Intervention (6 weeks) 20% of patients will have a second major event

Bazan et al JVS June 2015 1-10
Coull et al BMJ 2004;328:6
Naylor AR JVS 2008;48:1059-9

**CEA For Acute Stroke**

*Delay due To Concerns For Hemorrhage*

<table>
<thead>
<tr>
<th>Group</th>
<th>Year</th>
<th>Type of Study</th>
<th>% of Patients with Symptom or Event After CEA</th>
<th>% of Patients with Symptom or Event After 12 months</th>
<th>Engaged level of Evidence</th>
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<td>Bazan et al 2015</td>
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<td>Retrospective analysis</td>
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<td>Caplan et al 2017</td>
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<td>Case report</td>
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<td>Naylor et al 2018</td>
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<td>Retrospective analysis</td>
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**CEA for Acute Stroke**

*Case for Early intervention Pathophysiology*

Overlying plaque in 66% early (< 4 weeks), 21% After
Disrupted Plaques lined with thrombus seen in early (< 7 days) intervention

Naylor & Abu Rahama JVS 2015;61;1642-51
Johanson et al Int J Stroke 2013;8:220-7
CEA for Acute Stroke
Case for Early intervention

**Methods**

**Exclusion Criteria**

- Hemorrhagic Stroke
- Profound Neurologic Deficit
- Dense Hemiparesis
- Obtundation

**Preoperative Algorithm**

Evaluation By Stroke Neurologist
CT/MRI Perfusion scan of Brain
Duplex/Angiogram of Carotid Artery
Carotid Endarterectomy after plateau of symptoms

**Acute Stroke**

**Predictors of Outcome**

- Clinical Status – NIH Stroke Scale
- Infarct Characteristics
- Time to Surgical / Intervention

**Preoperative Infarct Location/Depth (NASCET)**

CT/MRI available for review in 74% (176/238)

**JVS 2004; 39, 148-154 Paty, et al**
Treatment of Acute Stroke due to Extracranial Carotid Disease

Controversy

- Timing
  - > 4-6 weeks
  - < 4 weeks
  - < 1 week
- Selection
  - Mild vs moderate Stroke
  - Plateau vs. resolution of symptoms

Prior Results (JVS 2004; 39:148-54)

- Risk of stroke after CEA correlated with initial infarct size
- Risk of perioperative stroke similar in all intervals < 1 month
- NIHSS score correlated with initial infarct size

Carotid Artery Stenting in Acute Stroke

Panagiotis Papanagiotou, MD⁎, Christian Roth, MD*, Silke Walter, MD*, Stefanie Behnke, MD*, Iris Q. Grunwald, MD*, Julio Viera, MD*, Maria Politi, MD*, Heiko Körner, MD*, Panagiotis Kostopoulos, MD*, Anton Haass, MD*, Klaus Fassbender, MD*, Wolfgang Reith, MD

Clinical Research
Journal of the American College of Cardiology
Volume 58, Issue 23, 29 November 2011, Pages 2363–2369

21 Patients, Mortality 13.9%
Recanalization of 63%
Conclusions

- Difficult to interpret CAS studies for acute strokes as most results mix indications (Strokes with Symptomatic Disease), however, results appear to be better with CEA than CAS in acute strokes

Lessons Learned

- There Must Be “Brain” to Save
- NIHSS less than 10, sometimes up to 15
- Symptoms Peaked, Some Improvement
- Center with Multidisciplinary Team
- CEA unless patient not OR Candidate then CAS

Conclusions

- In Patients with Stable neurologic function after mild/moderate stroke, CEA may be performed < 1 week after stroke onset with acceptable results
- Optimal Results and improvement in Neurologic Function may be achieved with coordination of Acute Stroke Neurology and Vascular Surgery Services with designated staff and facilities

THANK YOU!