Value Of Statins In CAS Patients: What Drug, What Dose And When: How do they help?

MAHMOUD MALAS, MD, MHS, RPVI, FACS
Chief Vascular and Endovascular Surgery
Professor and Vice Chair of Surgery
University of California San Diego
Professor of Epidemiology
Johns Hopkins Bloomberg School of Public Health

1. CREST
2. ACT I
3. CAPTURE II
4. CHOICE
5. FREEDOM
6. ROADSTER
7. SAPHIRE W
8. ROADSTER II
9. CREST II
10. CREST Companion Study
11. ROADSTER Long-Term Follow up Study

Presentation Disclosure Information
Disclosure Carotid
International Principal Investigator For
"The ROADSTER Long Term Follow Up"

Presenter: Training vascular surgeons how to perform TCAR safely

Statins and CEA
Effects of statins on early and late results of carotid stenting

• Threefold reduction in the rate of perioperative stroke and fivefold reduction of perioperative mortality among 1566 patients by Perler et al.

• 75% reduction (OR: 0.25; 95%CI: 0.07-0.90) in the odds of death and 45% reduction (OR: 0.55; 95% CI: 0.32-0.95) in stroke/death among 3360 patients by Kennedy et al.

How about CAS?

• How about medications and CAS?
CAS and Dual Anti-platelet therapy

- Two randomized trials for dual antiplatelet therapy in CAS:
  - McKevitt et al, 30-day incidence of adverse neurological events was 25% vs. 0% in aspirin + IV Heparin vs. aspirin+clopidogrel (P=0.02).
  - Dalainas et al, 30-day incidence of adverse neurological events 16% vs. 2 % in aspirin+IV Heparin vs. aspirin+ticlopindine (P=0.05).

Patients on long-term beta blockers and had post CAS hypertension are at 65% less risk of stroke/death after CAS (OR: 0.35, 95% CI: 0.17-0.73, P<0.05)

Methods

- Premier Healthcare Database (PHD)
  - Hospital-based, All-payer (>700 hospitals)
  - ~20% of annual U.S. inpatient discharge

- All CAS
  - 2009 - 2015
Patient Characteristics

<table>
<thead>
<tr>
<th>Patient Characteristics</th>
<th>CAS on Statins</th>
<th>CAS without Statins</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, Mean (SD)</td>
<td>70.0 (10.03)</td>
<td>69.4 (11.18)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Male Gender</td>
<td>7,569 (61.0)</td>
<td>3,164 (58.8)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Race:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>9,938 (80.0)</td>
<td>4,396 (83.9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Black</td>
<td>614 (5.0)</td>
<td>215 (4.9)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>1,874 (15.1)</td>
<td>721 (13.4)</td>
<td></td>
</tr>
<tr>
<td>Obesity</td>
<td>1,336 (10.8)</td>
<td>437 (8.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hx/o Smoking</td>
<td>5,294 (42.6)</td>
<td>2,174 (40.4)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hx/o HTN</td>
<td>9,917 (79.9)</td>
<td>3,979 (73.9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hx/o DM</td>
<td>4,460 (35.9)</td>
<td>1,537 (28.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hx/o Stroke</td>
<td>2,033 (16.4)</td>
<td>381 (7.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hx/o TIA</td>
<td>2,067 (16.4)</td>
<td>1,066 (20.3)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Results

<table>
<thead>
<tr>
<th>Post-operative Outcomes</th>
<th>CAS on Statins</th>
<th>CAS without Statins</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death</td>
<td>125 (1%)</td>
<td>98 (1.8%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Stroke</td>
<td>978 (3%)</td>
<td>126 (2.4%)</td>
<td>0.01</td>
</tr>
<tr>
<td>MI</td>
<td>115 (9.9%)</td>
<td>18 (0.3%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Stroke/Death</td>
<td>460 (3.7%)</td>
<td>191 (3.6%)</td>
<td>0.61</td>
</tr>
<tr>
<td>Death following stroke or MI</td>
<td>52 (11.8%)</td>
<td>37 (25.7%)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Limitations

- Retrospective study.
- Only Post-operative outcomes.
- Dosage and type of statins.

Statins reduce mortality and failure to rescue after carotid artery stenting

Muhammad Riza Khan, MD, Muhammad Faezah, MB; Vania Daskar, MD; Bima Nejmi, MD, RHMD; Wadan Alkhazali, MD, and Mahmoud D. Moids, MD, RHMD, Shriners, Az
Conclusions

- Statin use in CAS is associated with:
  - 64% reduction in the odds of death
  - 18% reduction in the odd of stroke/death
  - 63% reduction in failure to rescue.

Conclusions

- Protective effect and reduction of FTR with statins in CAS
- Possible reduction in the magnitude of stroke and MI.
- Statins use in CAS should be standardized
- Further studies needed on the proper type and dose

Thank you!