New Developments in Best Medical Treatment for Carotid Patients. Can Carotid Plaques be Stabilised and Shrunk? Will Strokes and MIs Become Rare or Eliminated?

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Disclosures
Honoraria for lectures received from:
Covidien/Medronic
Alpha Wasserman
Servier
Pierre Fabre

Question 1

New Developments.....

Changes in 2019 ESC/EAS Guidelines for Statin Therapy

1. Total CV Risk estimation from new tables:
   This total risk approach considers all CV events

2. No distinction between symptomatic and asymptomatic patients (extensive atherosclerosis can be present in asymptomatic individuals)

Changes in 2019 ESC/EAS Guidelines for Statin Therapy

3. “Certain individuals declare themselves to be at very high CV risk without needing scoring:”
   Documented CVD (Clinical or on imaging)
   Diabetes
   Familial Hypercholesterolemia
   Chronic Kidney Disease
   Carotid or Femoral Plaques (Symptomatic or Asymptomatic)
   Coronary artery calcium > 100
   Extreme Lp(a) elevation

Changes in 2019 ESC/EAS Guidelines for Statin Therapy

4. “Assessment of arterial (carotid and/or femoral) plaque burden on ultrasonography, and CAC score on CT should be considered as a risk modifier in individuals at low to moderate risk”
   These individuals have very few risk factors and yet because of subclinical atherosclerosis they are responsible for 1/3d of all the heart attacks and strokes in the population (often sudden and unexpected).
ESC/EAS Guidelines 2019
Statin Therapy for ACS

In a metaanalysis of RCTs enrolling > 90,000 atherosclerotic patients, statin therapy reduced stroke by 21%.

This effect was mainly derived from the extent of LDL-C reduction.


EAS Guidelines 2019 for Statin Therapy

5. Treatment Goals and Targets for Very High Risk Individuals

- No exposure to tobacco in any form
- Healthy diet (whole grain products, vegetables, fruit, fish)
- BMI 20-25 kg/m²
- Exercise: 5-7 hours rigorous exercise per week
- BP < 140/90 mmHg
- Diabetes: HbA1c < 7% (< 53 mg/dL)
- If triglycerides > 200 mg/dL: Consider fenofibrate or bezafibrate in combination with statins

- LDL Reduction:
  - At least 50% reduction from baseline
  - Target < 1.4 mmol/L (< 55 mg/dL)
  - Use Statin, Ezetimibe and consider PCSK9 if necessary

Question 2
Can Carotid Plaques be Stabilized or Shrunk?

3 Year Follow-up on Intensive Statin Therapy

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Area</th>
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</thead>
<tbody>
<tr>
<td>2.1 mm</td>
<td>13.12 mm²</td>
</tr>
<tr>
<td>2.0 mm</td>
<td>13.06 mm²</td>
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</tbody>
</table>

3 year Follow-up (No Statin Therapy)

<table>
<thead>
<tr>
<th>Area</th>
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<tbody>
<tr>
<td>23.7 mm²</td>
</tr>
<tr>
<td>71.2 mm²</td>
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</table>

Changes in Plaque Echogenicity

Baseline Scan 2009
Scan performed 2011
17 prospective studies (9 RCT) reported changes in plaque morphology as a result of statin therapy.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Number of studies</th>
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<tbody>
<tr>
<td>Increased echogenicity</td>
<td>9</td>
</tr>
<tr>
<td>Decreased lipid core size</td>
<td>9</td>
</tr>
<tr>
<td>Regression or slower progression</td>
<td>7</td>
</tr>
<tr>
<td>Reduction in TCD microemboli</td>
<td>1</td>
</tr>
</tbody>
</table>

The above effects correlate with decrease in LDL rather than intensity of therapy.

Makris GC et al. Atherosclerosis 2010;1:8-20

Clinical Efficacy of PCSK9 Inhibitor Evolocumab (N=25,982) The FOURIER Trial (FUP 2.6 years)

Stable CVD (MI, non haemorrhagic stroke or PAD)

- **Statin ± Ezetimibe** vs **Statin ± Ezetimibe Evolocumab**
- LDL C 92 mg/dL vs 30 mg/dL
- Any MI was reduced by 27%
- Ischaemic Stroke was reduced by 25%
- Coronary revascularisation was reduced by 22%

Sabatine MC et al. NEJM 2017;376:1713-22

**Question 3**

**Will Strokes and MIs become rare or eliminated?**

No, but certainly can be reduced and postponed by 10-20 years.

However, to achieve this we need:

- Education of doctors and patients about OMT
- Screening to identify the asymptomatic patients at high risk
- Use tools to increase patient compliance (e.g. showing images)
- Food industry regulation
- Life style education

**Take Home Message**

We can no longer defend the statement:

“Screening to identify patients with ACS is not recommended”

It should be replaced with a more qualified statement:

“Screening to identify patients with ACS with the view to operate in order to prevent stroke is not recommended. However, it is highly recommended as a means of identifying patients at very high CV risk in order to treat them with OMT.”