LONG FP LESIONS WITH LASER

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2016
SPECIFICITIES IN SFA LESIONS

- Long lesions / CTOs
- Acute elastic recoil of primary lesions → stenting
- Mechanical stress → nitinol stents
  - Risk of ISR
- Highly calcified
  - Poor vessel wall apposition of stents
  - Barrier to optimal drug absorption with drug eluting technologies
  - Source of acute vessel recoil

ELA debulking:
- ↓ plaque burden
- Reshape arterial lumen
- ↓ stretch injury at the time of PTA
  ↓ elastic recoil/dissection/stenting

LONG SFA STENTING AND ISR

- Endovascular First**
  - BUT POBA limited by:
    - Dissection / Elastic recoil
    - Restenosis: 70% at 1y*

→ Use of SESs
  - Lower restenosis rates at 1y (12.7%)***
  - BUT up to 60% of ISR at 3y

→ Use of DESs BUT still 25.2% of ISR at 2y****

→ Lack of sustained clinical benefit

 Longer lesions treated daily → higher restenosis rates
 Nb of patients needing treatment for ISR will ↑↑
 No recommandations on optimal strategy

ELA IN ISR (1)

- **Xe gas + hydrogen chloride**
  - Vaporization = ⚡ embolic potential
  - “cold-tipped” = “stunned platelet” phenomenon = ⚡ thrombus dissolution

- **PATENT trial**
  - prospective multicenter trial
  - 90 patients
  - Mean lesion length 123±95.9 mm
  - 34.4% Tosaka class III
  - Procedural success : 98.9%
  - Adjunctive POBA in 87.8%
  - Distal embolization : 10.0%
  - BUT NO amputation
  - Primary patency : 37.8%

Freedom from TLR at 1y

ELA IN ISR (2)

- EXCITE-ISR trial:
  - Prospective RCT
  - Stopped enrollment for early efficacy at 6 months
  - 169 ELA+POBA vs 81 POBA
    - mean lesion length 196±120 mm
    - 30.5% Tosaka class III
  - Procedural success: 93.5% vs. 82.7%, p=0.01
  - 30-day MAEs: 5.8% vs. 20.5%, p<0.001

Freedom from TLR at 1y

Primary patency
**COMBINED TECHNIQUE**

- Gandini et al. RCT*:
  - CLI patients
  - 100% Tosaka class III

**Patency rates**

<table>
<thead>
<tr>
<th>FU</th>
<th>ELA+DCB</th>
<th>DCB</th>
<th>p value</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>N=24</td>
<td>N=24</td>
<td></td>
</tr>
<tr>
<td>6 months</td>
<td>224±9.4mm</td>
<td>259±87mm</td>
<td>0.01</td>
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<tr>
<td>12 months</td>
<td>91.7%</td>
<td>58.3%</td>
<td>0.01</td>
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<tr>
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<td>66.7%</td>
<td>37.5%</td>
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**Freedom from TLR rate**

| 12 months | 83.3% | 50%  | 0.01 |

**Major amputation rates**

| 12 months | 8%    | 46%  | 0.003 |

- Ongoing PHOTOPAC RCT for further evaluation**

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**PHOTOPAC. Clinicaltrials.gov. [Internet]. 2015.*
CLINICAL CASE

- ♀ 62 years

- SFA recanalisation 16 months ago
  - Full metal jacket with 3 stents (7mm diameter)

- ISR after 10 months
  - ISR inflation using PTA at 12 months

- New symptomatic ISR (90-95%) on duplex investigation
CLINICAL CASE
CLINICAL CASE
CLINICAL CASE
CLINICAL CASE
CLINICAL CASE
TAKE HOME MESSAGE

- Combination of debulking by laser atherectomy and DCBs
  - seems to improve outcomes
  - both in primary lesions and ISR
  - especially in complex lesions (Tosaka class II and III)

→ INTACT trial now enrolling to confirm the cost-effectiveness ratio