A French experience of ambulatory intervention for endovascular treatment of peripheral artery disease: a retrospective study

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DISCLOSURE

• BIOTRONIK
Background

- Ambulatory management for surgery is going to be developed for economical reasons

- Vein surgery experience:
  - 3 Days of hospitalisation
  - To increase the activity: build or ambulatory
  - Today : 98 % ambulatory and X6 activity
  - Is it possible to do the same with artery?
How to minimize complications for peripheral intervention?

1) Use 4F devices: less time, less money, smaller puncture site
   - 6F with manual compression: 20 min
   - 6F with VCD: 150 € : 1 min
   - 4F with manual compression: 8 min
   - 4F with Safeguard: 8,5 € : 1 min

THE PB: to go through the lesion

2) Puncture under Duplex

3) Safeguard
my technic

- Punction under duplex, near the lesion under GA
- 4F introducer sheath
- 0.035 guide wire
- 4F catheter, crossing the lesion, and change for 0.018
- Primary stenting and dilatation with 4F compatible stents and balloon
- No compression: SAFEGUARD 40 cc
- Deflation (10 cc) at 2 and 3h
- Discharge 3 H post procedure.
- Deflation at home 5 cc
- Ablation of the balloon the day after.
my experience
From January 2013 to December 2015

566 p for PAD

219 éligible for endo-vascular treatment

67,6% Ambulotary

148 P
183 procedures
235 arteries

142 follow up 147 days
0 death

32,4% Hospitalization

71 P
80 procedures
111 arteries

65 follow up 126 days
2 death

347 Surgery

42 social reason (alone at home)
16 stage IV
4 already hospitalized
18 emergency
## Description of the population

<table>
<thead>
<tr>
<th></th>
<th>Ambulatory</th>
<th>Hospitalisation</th>
<th>Total</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>67.1 ± 12.2</td>
<td>75.1 ± 12.5</td>
<td>69.5 ± 12.8</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>119 (80.4%)</td>
<td>31 (43.7%)</td>
<td>150 (68.5%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td><strong>History CV</strong></td>
<td>99 (66.9%)</td>
<td>44 (62.0%)</td>
<td>143 (65.3%)</td>
<td>0.4740</td>
</tr>
<tr>
<td><strong>HT</strong></td>
<td>90 (60.8%)</td>
<td>35 (49.3%)</td>
<td>125 (57.1%)</td>
<td>0.1071</td>
</tr>
<tr>
<td><strong>Diabetics</strong></td>
<td>25 (16.9%)</td>
<td>15 (21.1%)</td>
<td>40 (18.3%)</td>
<td>0.4477</td>
</tr>
<tr>
<td><strong>H chol</strong></td>
<td>59 (39.9%)</td>
<td>15 (21.1%)</td>
<td>74 (33.8%)</td>
<td>0.0061</td>
</tr>
<tr>
<td><strong>SMOKER</strong></td>
<td>96 (64.9%)</td>
<td>25 (35.2%)</td>
<td>121 (55.3%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td><strong>OBESITY</strong></td>
<td>15 (10.1%)</td>
<td>3 (4.2%)</td>
<td>18 (8.2%)</td>
<td>0.1898</td>
</tr>
</tbody>
</table>

### Clinical stage

<table>
<thead>
<tr>
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<th>Ambulatory</th>
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<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>&gt;0.99</td>
</tr>
<tr>
<td>II</td>
<td>117 (66.1%)</td>
<td>33 (42.3%)</td>
<td>150 (58.8%)</td>
<td>0.0004</td>
</tr>
<tr>
<td>III</td>
<td>51 (28.8%)</td>
<td>24 (30.8%)</td>
<td>75 (29.4%)</td>
<td>0.7521</td>
</tr>
<tr>
<td>IV</td>
<td>9 (5.1%)</td>
<td>21 (26.9%)</td>
<td>30 (11.8%)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Differences by population

Ambulatory
- Young
- Male
- Smoker
- Simple PAD

Hospitalization
- Old
- Female
- Complexe PAD
## PROCEDURE

<table>
<thead>
<tr>
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<th>Hospitalisation</th>
<th>Total</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Femoral punctation</td>
<td>180 98.4%</td>
<td>75 93.8%</td>
<td>255 97%</td>
<td>0.0584</td>
</tr>
<tr>
<td>Punction under duplex</td>
<td>183 100%</td>
<td>80 100%</td>
<td>273 100%</td>
<td>1</td>
</tr>
<tr>
<td>Nb of artery</td>
<td>1.3</td>
<td>1.4</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>Nb of stents</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>0.9689</td>
</tr>
<tr>
<td>Primary succes</td>
<td>168 91.8%</td>
<td>66 82.5%</td>
<td>234 89%</td>
<td>0.0267</td>
</tr>
</tbody>
</table>

92.9% of procedure were performed with 4F devices.
Cross over

566 p for PAD

219 éligible for endo-vascular treatment

Ambulotary: 148 P
183 procedures
235 arteries
142 follow up 147 days
0 death

Hospitalization: 71 P
80 procedures
111 arteries
65 follow up 126 days
2 death

347 Surgery

Reason: procedural complication, hospitalization for surveillance

Only 2 patients
## FOLLOW UP

<table>
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<tr>
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<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary succes</strong></td>
<td>144 (94.7%)</td>
<td>52 (91.2%)</td>
<td>196 (93.8%)</td>
<td>0.3496</td>
</tr>
<tr>
<td><strong>Secondary succes</strong></td>
<td>8 (5.3%)</td>
<td>5 (8.8%)</td>
<td>13 (6.2%)</td>
<td></td>
</tr>
<tr>
<td><strong>Hospitalisation rate</strong></td>
<td>2 (0.8%)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>1 month complications</strong></td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td></td>
</tr>
<tr>
<td><strong>3 month DC rate</strong></td>
<td>0 (0.0%)</td>
<td>2 (2.8%)</td>
<td>2 (0.9%)</td>
<td></td>
</tr>
</tbody>
</table>
Future

• How increase ambulatory procedures?
  • Social pb = difficult
  • Emergency: possibility to see anesthesiologist the day of the procedure and not the day before or Local anesthesia
  • Stage IV: possibility to develop home hospitalization and dressing
  • We are trying to get 80% ambulatory this year.
Conclusion 1

- 4F devices are efficient
- Ambulatory for PAD treatment is possible and safe
- Studies must be done for more evidence
- BIO4AMB
  - Multicenter trial
  - 4F V 6F ambulotary for PAD
  - Post operative complications
Conclusion 2

It is easy for a big cat to go through a big hole

but

it is also possible for a small cat to go through a small one.
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