Long-term results of left main PCI

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CABG has traditionally been considered the standard treatment for left main PCI. PCI with drug eluting stents have reported very promising results. Stent thrombosis and bifurcation restenosis were regarded like a threat for good longterm results. Careful observation of observational series and randomized studies will determine the role of left main PCI.
Duke Database

CABG for Left Main Disease

Mortality Rate %

N= 1374

30 day: 2.24%
1 yr: 7.72%
2 yr: 10.29%
3 yr: 14.16%
4 yr: 18.68%
5 yr: 22.6%

Personal communication Peter Berger
2240 patients with unprotected left main artery disease, excluding those with prior CABG, valvular & aortic surgery, STEMI, or cardiogenic shock

Prospective. Non-randomized. Observational.
49% underwent stent implantation and 51% underwent CABG surgery

- Stent implantation
  n=1102
- CABG surgery
  n=1138
- DES n=784
- BMS n=318

1017 days median follow-up
1152 days median follow-up

- Primary Endpoint: Death; the composite of death, Q-wave myocardial infarction or stroke; target vessel revascularization (TVR).
The results of this study suggest that there is no significant difference in the mortality rate or the composite risk of death, Q-wave MI or stroke among patients with unprotected LMCA disease who undergo PCI vs. CABG.

However, CABG was associated with significant reduction in the incidence of target vessel revascularization compared to PCI.
We have evaluated the results of 101 consecutive patients with left main disease treated with percutaneous intervention (using Taxus stent) and follow up for at least 1 year.
Simple procedure
JL 3.5 6Fr guiding catheter
Consider wiring form outside ostium and pre IVUS dilatation
IVUS interrogation of plaque characteristics and remodeling
Predilatation or plaque modification
Stent implantation and optimization
IVUS assessment of the result
IVUS interrogation of lesion characteristics helps to plan the procedure

If stenosis is critical, predilate before IVUS

Plaque modification (cutting) in cases of calcium or heavy plaque burden

Rotational atherectomy if diffuse, calcified disease

Always final kissing balloon independent of technique used

IVUS evaluation of the result
Distal Bifurcation: One or two stents?

- One stent if lesion involves only one vessel
- One stent if moderate lesion on branch vessel
- Two stents if severe lesion on both
- Two stents if significant lesion and/or dissection after branch dilatation
When the patient has two of the three following characteristics:

- Right coronary artery occluded
- Severe left ventricular disfunction
- Anatomically difficult lesion to treat
Included: Patients with significant stenosis of the left main trunk who accepted the percutaneous treatment offered by his treating physician and the interventional cardiologist.

Excluded: Patients with AMI in whom the left main was treated during a procedure of primary angioplasty.
N = 101. Follow up = 25.3 months (14.1-44.8 months)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
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<tbody>
<tr>
<td>Age</td>
<td>69 ± 11 yrs</td>
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<tr>
<td>Male gender</td>
<td>77</td>
</tr>
<tr>
<td>Diabetes</td>
<td>31</td>
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<tr>
<td>Previous MI</td>
<td>25</td>
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RISK PROFILE

CD occluded or severely stenosed 58%
Age > 75 yrs 30%
MVD 90%
EF<40% 27%
<table>
<thead>
<tr>
<th>Stent Technique</th>
<th>Count</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>One stent</td>
<td>50</td>
<td>49.5%</td>
</tr>
<tr>
<td>2 stents</td>
<td>51</td>
<td>50.5%</td>
</tr>
<tr>
<td>Final kissing</td>
<td>101</td>
<td>100%</td>
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<tr>
<td>Procedural Success</td>
<td>100 %</td>
<td></td>
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<tr>
<td>Clinical succes</td>
<td>95%</td>
<td></td>
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<tr>
<td>Cardiac death</td>
<td>1.7%</td>
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<tr>
<td>NQMI</td>
<td>3%</td>
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<tr>
<td>Transient CVA</td>
<td>0.6%</td>
<td></td>
</tr>
<tr>
<td>TVR</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td>25 months</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Mortality</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>MI</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>TVR</td>
<td>9%</td>
<td>10%</td>
</tr>
<tr>
<td>Total MACE</td>
<td>18%</td>
<td>20%</td>
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## Predictors of Mortality

<table>
<thead>
<tr>
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<th>1 mo</th>
<th>12 mo</th>
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<tbody>
<tr>
<td>EF</td>
<td>0.91 (95% CI: 0.86-0.99)</td>
<td>0.76 (95% CI: 0.59-0.98)</td>
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</tbody>
</table>
TLR Narrative

- **TLR**: 10
  - Distal: 6
  - Proximal: 4
- **PCI**: 4
  - Distal: 3
  - Proximal: 1
- **CABG**: 4
Mortality Narrative

1. 80 yr. CD occluded. EF 30%. Peri procedural MI. Cardiac rupture 5 days post procedure
2. 71 years. CD occluded. EF 15%. 19 days post procedure admitted for CHF. Two days later cardiac arrest post VF. Unsuccessful PCR
3. 75 years EF 35%. Severe aortic stenosis. Severe hypotension. EM disociation
4. 78 years. 7 days post procedure: occlusion LAD (non treated lesion) Anterion MI. Shock
5. 83 years old. EF 20%. Sudden death 5 mo. Post-procedure
6. 70 years old. EF 18%. CHF and death 1 month post procedure
Percutaneous treatment of unprotected left main disease can be accomplished with safety and efficacy (good midterm results) in the era of drug eluting stents. Polymer based paclitaxel eluting stent (Taxus) used for left main disease is followed by good sustained clinical result at long term follow up. The technique used was related to lesion type with no difference in outcome observed among different approaches (1 stent only, 1 stent with final kissing or minicrush)