Impact of myocardial injury after percutaneous transluminal angioplasty (PTA) in patients with critical lower limbs ischemia (CLI) on major adverse cardiovascular events.

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Introduction

One of common complications after noncardiac surgery is myocardial injury that has been defined as prognostically relevant injury that happens due to ischemia that happens during of up to 30 days after surgical procedure. However this phenomenon has been recently well studied and described, there is still lack of information on myocardial injury that happens due to endovascular treatment (EVT) in patients with critical lower limbs ischemia (CLI).

Purpose

The aim of the study was to evaluate myocardial injury after endovascular treatment (MIEVT) and its impact on postoperative major adverse cardiovascular events (MACE).

Results

![Timeline of the study](image)

<table>
<thead>
<tr>
<th>PTA</th>
<th>1st Day</th>
<th>2nd Day</th>
<th>3rd Day</th>
<th>Follow-up</th>
<th>Follow-up</th>
<th>Follow-up</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABI</td>
<td>hTnT 0</td>
<td>hTnT 1</td>
<td>hTnT 2</td>
<td>hTnT 3</td>
<td>hTnT 4</td>
<td>hTnT 5</td>
<td>hTnT 6</td>
</tr>
</tbody>
</table>

Inclusion criteria:
- Critical lower limb ischemia
- Endovascular treatment
- Over 45 years old
- Signed consent

MIEVT Definition - Postoperative hsTnT over 14 ng/L and increased over 30% compared to preoperative hsTnT

<table>
<thead>
<tr>
<th>MACE</th>
<th>MIEVT 14 (30%)</th>
<th>OR (95% CI)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Yes</td>
<td>3</td>
<td>1.69%</td>
<td>10</td>
</tr>
</tbody>
</table>

1) Patients developing MIEVT has 11 times more chance for having major adverse cardiovascular events in 1 year.
2) Most of the patients developing MIEVT have highest hsTnT level 1 day after endovascular treatment.

Conclusions

1) Troponins, commonly elevated in patients with CLI undergoing EVT, indicate high rate of cardiac diseases.
2) At least one quarter patients may experience MIEVT. In which at least 25% will die during 1-year indicating on the periprocedural ischemia as a trigger for future outcomes.
3) Significant majority of the patients that experienced MIEVT did not present clinical signs of myocardial ischemia, and may be unnoticed without troponin screening.
4) Patients developing Myocardial Injury after Endovascular Treatment should be covered with additional long term follow-up observation.