General Thoracic Surgery is Safe in Patients taking Clopidogrel (Plavix)

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Clopidogrel

Disclosures

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Introduction

• In 2007 AHA published rules that stated that clopidogrel REQUIRED for six months after placement of DES coronary artery stent, at least one month after bare metal stent

• Followed, swirling morass of anxiety and ignorance: anesthesiology canceled surgery if clopidogrel was stopped, cardiology forced to deploy a suboptimal stent ... Emergency rules
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Introduction

• Many hospitals promulgated a compromise - pts that failed pre-op stress test bare metal stent placed → clopidogrel 1 month → D/C’ed 1 week → surgery

• This solution lead to suboptimal stent placement and increased risk of preoperative MI – therefore, not only compromised cancer care but also coronary disease

• True clinical dilemma existed – searched better solution

• Much dilemma based on surgical dogma - surgery could not be performed on clopidogrel
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Objective

To assess the safety of thoracotomy, VATS, mediastinoscopy, sternotomy and robotic surgery in patients who were taking clopidogrel with or without aspirin
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Methods

• A prospective study using prospective database and propensity matched controls

• Inclusion: 19 y/o age who were taking clopidogrel the days before, of and after surgery

• Endpoints:
  
  ➢ Primary: intra and post–operative bleeding

  ➢ Secondary: myocardial infarction, cardiac events, other morbidity and mortality
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**Methods**

- Started cautiously – first pt was a VATS drainage of a pleural effusion – platelets and PRBC’s in OR – noted no bleeding
- Moved on to VATS wedge, no lung hematoma, then thoracotomy and wedge, then lobectomy with LN dissection, then robotic lobe, then Ivor Lewis, then mediastinoscopy finally sternotomy, then redo thoracotomy
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Demographics

1/09

33 (matched to 132 controls)

4/10

28

36

68 years

36

88

5
## Clopidogrel Patient Characteristics

<table>
<thead>
<tr>
<th>Study pt taking clopidogrel (N=33)</th>
<th>Not taking clopidogrel (N=132)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current smoker</strong></td>
<td></td>
</tr>
<tr>
<td>15 (45%)</td>
<td>58 (44%)</td>
</tr>
<tr>
<td><strong>Coronary artery dis</strong></td>
<td></td>
</tr>
<tr>
<td>33 (100%)</td>
<td>132 (100%)</td>
</tr>
<tr>
<td><strong>Diabetes mellitus</strong></td>
<td></td>
</tr>
<tr>
<td>7 (21%)</td>
<td>20 (15%)</td>
</tr>
<tr>
<td><strong>Coronary stent</strong></td>
<td></td>
</tr>
<tr>
<td>21 (64%)</td>
<td>43 (33%)</td>
</tr>
<tr>
<td><strong>Pre-op chemo</strong></td>
<td></td>
</tr>
<tr>
<td>4 (12%)</td>
<td>14 (11%)</td>
</tr>
<tr>
<td><strong>On other antiplatelet therapy</strong></td>
<td></td>
</tr>
<tr>
<td>7 (23%)</td>
<td>51 (39%)</td>
</tr>
<tr>
<td><strong>Length of time on clopidogrel</strong></td>
<td></td>
</tr>
<tr>
<td>5.2 months</td>
<td>NA</td>
</tr>
</tbody>
</table>
Clopidogrel
Procedures

- 12 lobes
  - 11 open
  - 1 robotic

- 4 meds
- 3
- 2
- 1
- 6 VATS
- 2

- Lobectomy
- VATS
- Mediastinoscopy
- Wedge
- Ivor Lewis
- CW resection
- Decortication
- Sternotomy
# Clopidogrel

## Intra & Post-Operative Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Study pt taking clopidogrel (N=33)</th>
<th>Control - not taking clopidogrel (N=132)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY thor: Return to OR for bleeding</td>
<td>0 / 29</td>
<td>1</td>
</tr>
<tr>
<td>REDO thor: Return to OR for bleeding</td>
<td>2 / 4 – both pts on ASA &amp; clopidogrel</td>
<td>0 / 12</td>
</tr>
<tr>
<td>Morbidity</td>
<td>1 (3%)</td>
<td>4 (3%)</td>
</tr>
<tr>
<td>MACE</td>
<td>1 (5%)</td>
<td>9 (7%)</td>
</tr>
<tr>
<td>Mortality</td>
<td>1 (5%)</td>
<td>5 (3%)</td>
</tr>
<tr>
<td></td>
<td>Clopidogrel + stent (N=21)</td>
<td>No clopidogrel stent only (N=43)</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Morbidity</td>
<td>4 (20%)</td>
<td>16 (37%)</td>
</tr>
<tr>
<td>MACE</td>
<td>1 (5%)</td>
<td>5 (13%)</td>
</tr>
<tr>
<td>Post-op MACE</td>
<td>0 / 8</td>
<td>5 / 14 (36%)</td>
</tr>
<tr>
<td>lobectomy patients</td>
<td></td>
<td>(p=0.05)</td>
</tr>
<tr>
<td>Mortality</td>
<td>1 (5%)</td>
<td>3 (2%)</td>
</tr>
</tbody>
</table>
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Limitations of Study

• Uni-institutional study
• Small number of patients
• Propensity scores matched from only 11,768 pts in our database, thus each study pt may not have had perfectly matched control
• However, since safety study these limitations probably do not invalidate our conclusions
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Conclusions

- Many types of general thoracic surgical procedures can be performed safely in pts taking clopidogrel, ease the conversations pre-op cardiology and anesthesia.
- In addition, clopidogrel may be protective decrease the risk of peri-operative MI in those with cor art stent.
- However, in pts that undergo a redo-thoracotomy, there is an increased risk of bleeding, esp. if they are taking both clopidogrel and aspirin.
- For these patients we recommend that aspirin is stopped and careful dissection of adhesions.