DAPT should be prolonged in patients with acute coronary syndrome?

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Leiria Hospital Centre
Chairman WG Thrombosis
Disclosures related with the current topic

João Morais

Honoraria received from Astra Zeneca and Merck Sharp & Dhome
Consulting activities and invited speaker
National and international levels
Antithrombotic environment in patients with ACS

DAPT, dual antiplatelet therapy; LMWH, low molecular weight heparin; UFH, unfractionated heparin

**DAPT**
- Aspirin
- + P2Y\textsubscript{12} inhib
- ticagrelor or prasugrel
- Clopidogrel

**Antithrombin**
- UFH or LMWH/fondaparinux or bivalirudin

In hospital

12 months

\\
Routine therapies in the acute, subacute and long term phase of STEMI

DAPT with aspirin and an oral ADP receptor antagonist must be continued for up to 12 months after STEMI, with a strict minimum of:

- 1 month for patients receiving BMS;
- 6 months for patients receiving DES.

### Stent oriented strategy

### Patient oriented strategy
DAPT post ACS

Rationale for 12 months of treatment duration

Single centre \((n=965)\)

Total death / AMI at 12 months

Event rate

- Revascularization \((+): 5.2\%\)
- Revascularization \((-): 9.0\%\)

Morais J et al
Unpublished data
DAPT post ACS

Rationale for 12 months of treatment duration

CURE

Placebo + Aspirin (n=6303)

Cumulative Hazard Rate

Primary Efficacy End Point

PLATO

Clopidogrel

Prasugrel

Ticagrelor

TRITON

Days after Randomization

0 30 60 90 120 150 180 210 240 270 300 330 360 390 420 450

0.00 0.02 0.04 0.06 0.08 0.10 0.12 0.14
PLATO

Cumulative incidence (%) vs Days after randomisation

- Clopidogrel: 6.60%
- Ticagrelor: 5.28%

HR 0.80 (95% CI 0.70–0.91), p<0.001

Days after randomisation:

<table>
<thead>
<tr>
<th>Days</th>
<th>31</th>
<th>90</th>
<th>150</th>
<th>210</th>
<th>270</th>
<th>330</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>8,673</td>
<td>8,543</td>
<td>8,397</td>
<td>7,028</td>
<td>6,480</td>
<td>4,822</td>
</tr>
<tr>
<td>Cases</td>
<td>8,688</td>
<td>8,437</td>
<td>8,286</td>
<td>6,945</td>
<td>6,379</td>
<td>4,751</td>
</tr>
</tbody>
</table>
Cumulative incidence (%) over days after randomisation for Clopidogrel (6.60%) and Ticagrelor (5.28%). Hazard ratio (HR) 0.80 (95% CI 0.70–0.91), p<0.001.
Stent oriented strategy
ADAPT-DES: Time to First Stent Thrombosis

70 patients (0.84%) developed 74 ST events (ARC def/prob)

N=8,583

Definite or probable 0.84% (70)
- Definite 0.63% (53)
- Probable 0.20% (17)

40 (57.1%) of ST events occurred within 30 days
DAPT post stent implantation

Time duration can be shorten ?

Clinical Impact of Extended DAPT after PCI

A metanalysis of Randomized trials (n=8231)

<table>
<thead>
<tr>
<th>Trial (Journal)</th>
<th>Stent types</th>
<th>No. of pts</th>
<th>DAPT duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXCELLENT (Circ 2012)</td>
<td>SES, EES</td>
<td>1,443</td>
<td>6 vs. 12 months</td>
</tr>
<tr>
<td>PRODIGY (Circ 2012)</td>
<td>BMS, PES, E-ZES, EES</td>
<td>1,970</td>
<td>6 vs. 24 months</td>
</tr>
<tr>
<td>REAL/ZEST LATE (NEJM 2010)</td>
<td>SES, PES, E-ZES</td>
<td>2,701</td>
<td>12 vs. 24 months</td>
</tr>
<tr>
<td>RESET (JACC 2012)</td>
<td>SES, E-ZES, R-ZES, EES</td>
<td>2,148</td>
<td>3 vs. 12 months</td>
</tr>
</tbody>
</table>

Odds Ration
M-H Random 95% CI

Death 1.15 [0.85, 1.54]
Myocardial Infarction 0.95 [0.66, 1.36]
Stent Thrombosis 0.88 [0.43, 1.81]
Cerebrovascular Accident 1.51 [0.92, 2.47]
TIMI Major Bleeding 2.64 [1.31, 5.30]

Extended Better  Control Better

Cassese et al Eur Heart Journal 2012; 33: 3078-3087

Circulation 2012;125:2015–2026
DAPT post stent implantation

Stent thrombosis – new generation of stents

49 RCTs, 50,844 pts
ARC definitions

Figure 5: Consistency between direct and indirect estimates of definite (A) and definite or probable (B) stent thrombosis at 1 year between CoCr-EES and BMS.

CoCr-EES = cobalt-chromium everolimus-eluting stents. BMS = bare-metal stents. IV = inverse variance. SE = standard error.
Drug eluted stents

1st vs 2nd generation

Patient oriented strategy
Outcomes in patients with atherosclerosis

REACH Registry (1-y outcomes) 64,977 pts ≥ 45 years old

CV Death, MI, Stroke or Hosp for Atherothrombosis

- Multiple Risk Factors: 5.31%
- Established Disease: 14.4%

CV Death, MI, Stroke or Hosp for Atherothrombosis

- CAD Only: 54%
- CVD Only: 20%
- PAD Only: 6%
- >1 Bed: 20%

Outcomes in post ACS patients

- All death: 4.5%
- AMI: 2.9%
- Revasc: 7.7%
- Stroke: 2.1%

Single centre
N=965
12 months f-up

Global event rate 14.1%

João Morais, 2016 to be published
PROSPECT: MACE

Number at risk

<table>
<thead>
<tr>
<th>Category</th>
<th>0 Year</th>
<th>1 Year</th>
<th>2 Year</th>
<th>3 Year</th>
<th>4 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>697</td>
<td>557</td>
<td>506</td>
<td>480</td>
<td></td>
</tr>
<tr>
<td>CL related</td>
<td>697</td>
<td>590</td>
<td>543</td>
<td>518</td>
<td></td>
</tr>
<tr>
<td>NCL related</td>
<td>697</td>
<td>595</td>
<td>553</td>
<td>521</td>
<td></td>
</tr>
<tr>
<td>Indeterminate</td>
<td>697</td>
<td>634</td>
<td>604</td>
<td>583</td>
<td></td>
</tr>
</tbody>
</table>

MACE (%)

- **All**: 20.4%
- **Culprit lesion (CL) related**: 12.9%
- **Non culprit lesion (NCL) related**: 11.6%
- **Indeterminate**: 2.7%
Extended DAPT
Continued Divergence of Event Curves With More Potent Long-term P2Y_{12} Inhibition

**TRITON-TIMI 38**

- **Clopidogrel**
- **Prasugrel**

HR: 0.80  
*P* = 0.003  
6.9%

HR: 0.80  
*P* < 0.001  
6.6%

**PLATO**

- **Clopidogrel**
- **Ticagrelor**

HR: 0.80  
*P* < 0.001  
5.3%

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Dual Antiplatelet Therapy Beyond One Year After Drug-eluting Coronary Stent Procedures


on behalf of the Dual Antiplatelet Therapy (DAPT) Study Investigators
**Design**

Enrolled: Subjects treated with FDA-approved DES or BMS. Subjects on oral anticoagulant therapy or with life expectancy < 3 years excluded.

Randomized: Free from MI, stroke, repeat revascularization, and moderate or severe bleeding, and adherent with thienopyridine (80% to 120% of doses taken and no interruption > 14 days).

Mauri, Kereiakes et al AHJ 2010; 160(6): 1035-1041

ClinicalTrials.gov number NCT00977938
## Baseline Demographics

<table>
<thead>
<tr>
<th></th>
<th>Thienopyridine N=5020</th>
<th>Placebo N=4941</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>61.8</td>
<td>61.6</td>
<td>0.24</td>
</tr>
<tr>
<td>Female</td>
<td>24.7%</td>
<td>26.0%</td>
<td>0.15</td>
</tr>
<tr>
<td>Race – Non White</td>
<td>8.9%</td>
<td>8.6%</td>
<td>0.67</td>
</tr>
<tr>
<td>Ethnicity-Hispanic or Latino</td>
<td>3.2%</td>
<td>3.3%</td>
<td>0.91</td>
</tr>
<tr>
<td>Weight – kg</td>
<td>91.5</td>
<td>91.5</td>
<td>0.93</td>
</tr>
<tr>
<td>BMI</td>
<td>30.5</td>
<td>30.6</td>
<td>0.92</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>31.1%</td>
<td>30.1%</td>
<td>0.28</td>
</tr>
<tr>
<td>Hypertension</td>
<td>75.8%</td>
<td>74.0%</td>
<td>0.03</td>
</tr>
<tr>
<td>Cigarette Smoker</td>
<td>24.6%</td>
<td>24.7%</td>
<td>0.91</td>
</tr>
<tr>
<td>Prior PCI</td>
<td>30.4%</td>
<td>31.0%</td>
<td>0.50</td>
</tr>
<tr>
<td>Prior CABG</td>
<td>11.3%</td>
<td>11.8%</td>
<td>0.49</td>
</tr>
<tr>
<td>NSTEMI</td>
<td><strong>15.5%</strong></td>
<td><strong>15.5%</strong></td>
<td>0.93</td>
</tr>
<tr>
<td>STEMI</td>
<td><strong>10.6%</strong></td>
<td><strong>10.3%</strong></td>
<td>0.65</td>
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</tbody>
</table>
Myocardial Infarction

Primary Analysis Period
12-30 Months:
HR 0.47 (0.37-0.61)
2.1% vs. 4.1%
P<0.001

Cumulative Incidence of Myocardial Infarction

<table>
<thead>
<tr>
<th>Months After Enrollment</th>
<th>Thienopyridine</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>0.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>15</td>
<td>0.6%</td>
<td>4.1%</td>
</tr>
<tr>
<td>18</td>
<td>1.8%</td>
<td>6.8%</td>
</tr>
<tr>
<td>21</td>
<td>3.1%</td>
<td>7.4%</td>
</tr>
<tr>
<td>24</td>
<td>4.5%</td>
<td>8.1%</td>
</tr>
<tr>
<td>27</td>
<td>5.9%</td>
<td>9.3%</td>
</tr>
<tr>
<td>30</td>
<td>7.2%</td>
<td>10.4%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Study Drug Treatment Ends</th>
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</thead>
<tbody>
<tr>
<td>Thienopyridine</td>
</tr>
<tr>
<td>4920</td>
</tr>
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<td>4849</td>
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<tr>
<td>4789</td>
</tr>
<tr>
<td>4717</td>
</tr>
<tr>
<td>4634</td>
</tr>
<tr>
<td>4580</td>
</tr>
<tr>
<td>3051</td>
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<table>
<thead>
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<tr>
<td>4804</td>
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<tr>
<td>4727</td>
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<tr>
<td>4653</td>
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<td>4565</td>
</tr>
<tr>
<td>4501</td>
</tr>
<tr>
<td>4440</td>
</tr>
<tr>
<td>3012</td>
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</table>
Co-Primary Effectiveness End Point MACCE

Primary Analysis Period
12-30 Months:
HR 0.71 (0.59-0.85)
4.3% vs. 5.9%
P<0.001

Cumulative Incidence of Death, Myocardial Infarction or Stroke

<table>
<thead>
<tr>
<th>Months After Enrollment</th>
<th>Thienopyridine</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>15</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>18</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>21</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>24</td>
<td>4%</td>
<td>8%</td>
</tr>
<tr>
<td>27</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>30</td>
<td>6%</td>
<td>12%</td>
</tr>
<tr>
<td>33</td>
<td>7%</td>
<td>14%</td>
</tr>
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</table>

# At Risk

<table>
<thead>
<tr>
<th></th>
<th>Thienopyridine</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 months</td>
<td>5020</td>
<td>4941</td>
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<tr>
<td>15 months</td>
<td>4917</td>
<td>4799</td>
</tr>
<tr>
<td>18 months</td>
<td>4840</td>
<td>4715</td>
</tr>
<tr>
<td>21 months</td>
<td>4778</td>
<td>4635</td>
</tr>
<tr>
<td>24 months</td>
<td>4702</td>
<td>4542</td>
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<tr>
<td>27 months</td>
<td>4611</td>
<td>4476</td>
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<tr>
<td>30 months</td>
<td>4554</td>
<td>4412</td>
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<tr>
<td>Study Drug Treatment Ends</td>
<td>3029</td>
<td>2997</td>
</tr>
</tbody>
</table>
Primary Safety End Point (Moderate or Severe Bleeding): 12-30 Months

**Comparison**

- **Moderate or Severe**
  - Thienopyridine (N=4710): 2.5%
  - Placebo (N=4649): 1.6%
  - **Difference**: 0.9%

- **Moderate**
  - Thienopyridine (N=4710): 1.7%
  - Placebo (N=4649): 1.0%
  - **Difference**: 0.7%

- **Severe**
  - Thienopyridine (N=4710): 0.8%
  - Placebo (N=4649): 0.6%
  - **Difference**: 0.2%

- **BARC Type 2**
  - Thienopyridine (N=4710): 3.1%
  - Placebo (N=4649): 1.5%
  - **Difference**: 1.6%

- **BARC Type 3**
  - Thienopyridine (N=4710): 1.5%
  - Placebo (N=4649): 1.5%
  - **Difference**: 0.0%

- **BARC Type 5**
  - Thienopyridine (N=4710): 0.38%
  - Placebo (N=4649): 0.1%
  - **Difference**: 0.28%
Conclusions

- Following drug-eluting stent treatment, continuation of thienopyridine plus aspirin beyond one year reduces the risk of stent thrombosis and MACCE compared with aspirin alone.
  - Relative reductions of 71% for ST, 29% for MACCE and 53% for M
  - Myocardial infarction reduced both in the stent and in other locations
  - Treatment benefit on ST and MI consistent across drugs, for newer and older stents, and across subjects with higher or lower risk of events
- The benefit of extended thienopyridine treatment was tempered by an increase in bleeding events (relative increase, 61%). Severe and/or fatal bleeding was uncommon.
Primary Efficacy Endpoint to 30 Months
(Age < 75 years)

HR (95% CI) ≤ 1 Year: 0.99 (0.84, 1.16)
HR (95% CI) > 1 Year: 0.72 (0.54, 0.97)

HR (95% CI): 0.91 (0.79, 1.05)  P = 0.21
Interaction P = 0.07

Prasugrel vs. Clopidogrel for Acute Coronary Syndromes Patients Managed without Revascularization
the TRILOGY ACS trial

Prasugrel 13.9%
Clopidogrel 16.0%
Background – 1° Efficacy Evaluation

Overall Population

CV Death, MI, or Stroke

N = 26449
Mean f/u: 2.5 years

Hazard Ratio 0.87
p < 0.001

Placebo
10.5%
9.3%

Vorapaxar

GUSTO Mod/Sev at 3 yrs
4.2 v. 2.5%, HR 1.66, p<0.001

ClinicalTrials.gov NCT00526474c
Stable pts with history of MI 1-3 yrs prior + ≥1 additional atherothrombosis risk factor

RANDOMIZED DOUBLE BLIND

Planned treatment with ASA 75 – 150 mg/d & Standard background care

Ticagrelor 90 mg bid

Ticagrelor 60 mg bid

Placebo

Follow-up Visits Q4 mos for 1st yr, then Q6 mos

Minimum 1 year follow-up Event-driven trial

Bonaca MP et al. Am Heart J 2014;167:437-44
Primary Endpoint

N = 21,162
Median follow-up 33 months

CV Death, MI, or Stroke (%)

Months from Randomization

Placebo (9.0%)
Ticagrelor 90 (7.8%)
Ticagrelor 60 (7.8%)

Ticagrelor 90 mg
HR 0.85 (95% CI 0.75 – 0.96)
P=0.008

Ticagrelor 60 mg
HR 0.84 (95% CI 0.74 – 0.95)
P=0.004
Components of Primary Endpoint

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>HR (95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV Death, MI, or Stroke (1558 events)</td>
<td>0.85 (0.75-0.96)</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>0.84 (0.74-0.95)</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>0.84 (0.76-0.94)</td>
<td>0.001</td>
</tr>
<tr>
<td>CV Death (566 events)</td>
<td>0.87 (0.71-1.06)</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>0.83 (0.68-1.01)</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>0.85 (0.71-1.00)</td>
<td>0.06</td>
</tr>
<tr>
<td>Myocardial Infarction (898 events)</td>
<td>0.81 (0.69-0.95)</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>0.84 (0.72-0.98)</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>0.83 (0.72-0.95)</td>
<td>0.005</td>
</tr>
<tr>
<td>Stroke (313 events)</td>
<td>0.82 (0.63-1.07)</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>0.75 (0.57-0.98)</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>0.78 (0.62-0.98)</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Ticagrelor better: Ticagrelor 90 mg, Ticagrelor 60 mg, Pooled
Bleeding

Ticagrelor 90 mg:
- HR 2.69 (1.96-3.70)
- Ticagrelor 60 mg:
- HR 2.32 (1.68-3.21)

P < 0.001

3-Year KM Event Rate (%)

- TIMI Major: Ticagrelor 90 mg (2.6), Ticagrelor 60 mg (2.3), Placebo (1.1)
- TIMI Minor: Ticagrelor 90 mg (1.3), Ticagrelor 60 mg (1.2), Placebo (0.4)
- Fatal bleeding or ICH: Ticagrelor 90 mg (0.6), Ticagrelor 60 mg (0.7), Placebo (0.6)
- ICH: Ticagrelor 90 mg (0.6), Ticagrelor 60 mg (0.6), Placebo (0.5)
- Fatal Bleeding: Ticagrelor 90 mg (0.1), Ticagrelor 60 mg (0.3), Placebo (0.3)

P = NS for all categories except TIMI Major.
Extended DAPT

Udell’s meta-analysis

<table>
<thead>
<tr>
<th>Event</th>
<th>Risk Ratio (95% CI)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major adverse cardiovascular events</td>
<td>0.78 (0.67 - 0.90)</td>
<td>0.001</td>
</tr>
<tr>
<td>Cardiovascular death</td>
<td>0.85 (0.74 - 0.98)</td>
<td>0.03</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>0.70 (0.55 - 0.88)</td>
<td>0.003</td>
</tr>
<tr>
<td>Stroke</td>
<td>0.81 (0.68 - 0.97)</td>
<td>0.02</td>
</tr>
<tr>
<td>Stent Thrombosis (Definite/Probable)</td>
<td>0.50 (0.28 - 0.89)</td>
<td>0.02</td>
</tr>
<tr>
<td>Major Bleeding</td>
<td>1.73 (1.19 - 2.50)</td>
<td>0.004</td>
</tr>
<tr>
<td>Non-cardiovascular death</td>
<td>1.03 (0.86 - 1.23)</td>
<td>0.76</td>
</tr>
<tr>
<td>All-cause death</td>
<td>0.92 (0.83 - 1.03)</td>
<td>0.13</td>
</tr>
</tbody>
</table>

European Heart Journal
doi:10.1093/eurheartj/ehv443
Long-term dual antiplatelet therapy with low-dose aspirin and ticagrelor should be considered in appropriate patients with a myocardial infarction.
In the DAPT Study, continuation of dual antiplatelet therapy beyond 12 months reduced ischemic complications after coronary stenting compared with aspirin alone, yet increased moderate or severe bleeding.

- **Stent Thrombosis**
  - HR 0.29 (0.17–0.48)
  - P<0.001
- **Death, MI, Or Stroke (MACCE)**
  - HR 0.71 (0.59–0.85)
  - P<0.001
- **Myocardial Infarction**
  - HR 0.47 (0.37–0.61)
  - P<0.001
- **GUSTO Mod/Severe Bleed**
  - 1.0%
- **Death**
  - HR 1.36 (1.00–1.85)
  - P=0.05
  - 0.5%

Mauri, Kereiakes, Yeh et al. NEJM. 2014 Dec 4;371:2155-66.
## Multivariable Prediction Models

<table>
<thead>
<tr>
<th>Predictors of Events</th>
<th>Predictors of Myocardial Infarction or Stent Thrombosis</th>
<th>Predictors of Moderate/Severe Bleeding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HR (95% CI)</td>
<td>P</td>
</tr>
<tr>
<td>Continued Thienopyridine vs. Placebo</td>
<td>0.52 (0.42 – 0.65)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MI at Presentation</td>
<td>1.65 (1.31 – 2.07)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Prior PCI or Prior MI</td>
<td>1.79 (1.43 – 2.23)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CHF or LVEF &lt; 30%</td>
<td>1.88 (1.35 – 2.62)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Vein Graft PCI</td>
<td>1.75 (1.13 – 2.73)</td>
<td>0.01</td>
</tr>
<tr>
<td>Stent Diameter &lt; 3 mm</td>
<td>1.61 (1.30 – 1.99)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Paclitaxel-Eluting Stent</td>
<td>1.57 (1.26 – 1.97)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Cigarette Smoker</td>
<td>1.40 (1.11 – 1.76)</td>
<td>0.01</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1.38 (1.10 – 1.72)</td>
<td>0.01</td>
</tr>
<tr>
<td>Peripheral Arterial Disease</td>
<td>1.49 (1.05 – 2.13)</td>
<td>0.03</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1.37 (1.03 – 1.82)</td>
<td>0.03</td>
</tr>
<tr>
<td>Renal Insufficiency</td>
<td>1.55 (1.03 – 2.32)</td>
<td>0.04</td>
</tr>
<tr>
<td>Age (per 10 years)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*The ischemia model C-statistic: 0.70 in DAPT Study; 0.64 in PROTECT*

**The bleeding model C-statistic: 0.68 in DAPT Study; 0.64 in PROTECT**
## The DAPT Score

### Variable

<table>
<thead>
<tr>
<th>Patient Characteristic</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>≥ 75</td>
<td>-2</td>
</tr>
<tr>
<td>65 - &lt;75</td>
<td>-1</td>
</tr>
<tr>
<td>&lt; 65</td>
<td>0</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>1</td>
</tr>
<tr>
<td>Current Cigarette Smoker</td>
<td>1</td>
</tr>
<tr>
<td>Prior PCI or Prior MI</td>
<td>1</td>
</tr>
<tr>
<td>CHF or LVEF &lt; 30%</td>
<td>2</td>
</tr>
<tr>
<td>Index Procedure Characteristic</td>
<td></td>
</tr>
<tr>
<td>MI at Presentation</td>
<td>1</td>
</tr>
<tr>
<td>Vein Graft PCI</td>
<td>2</td>
</tr>
<tr>
<td>Stent Diameter &lt; 3mm</td>
<td>1</td>
</tr>
</tbody>
</table>

### Distribution of DAPT Scores among all randomized subjects in the DAPT Study

![Bar chart showing the distribution of DAPT scores](image)
Continued Thienopyridine vs. Placebo
DAPT Score <2 (Low); N=5731

Myocardial Infarction or Stent Thrombosis

Death, MI, or Stroke (MACCE)

GUSTO Moderate/Severe Bleeding

1.7% vs. 2.3%
P = 0.07

3.7% vs. 3.8%
P = 0.73

3.0% vs. 1.4%
P < 0.001
Continued Thienopyridine vs. Placebo
DAPT Score ≥ 2 (High); N=5917

Myocardial Infarction or Stent Thrombosis

- Continued Thienopyridine vs. Placebo
- 2.7% vs. 5.7% (p<0.001)

Death, MI or Stroke (MACCE)

- Continued Thienopyridine vs. Placebo
- 4.9% vs. 7.6% (p<0.001)

GUSTO Moderate/Severe Bleeding

- Continued Thienopyridine vs. Placebo
- 1.8% vs. 1.4% (p=0.26)
Conclusions

Among patients who have not had a major ischemic or bleeding event within the first year after PCI:

The DAPT Score identified patients for whom ischemic benefits outweighed bleeding risks, and patients for whom bleeding risks outweighed ischemic benefits.

Low DAPT Score (< 2)
NNT to prevent ischemia = 153
NNH to cause bleeding = 64

High DAPT Score ≥ 2
NNT to prevent ischemia = 34
NNH to cause bleeding = 272

DAPT Score may help clinicians decide who should, and who should not be treated with extended DAPT
Patients with an established history of ACS and/or stent implantation may benefit of DAPT prolongation. The exact time duration is unknown.

Patient oriented approach should be preferred over a more simplistic way focusing only on the stent.

Appropriate patient selection is the key to handle the delicate balance between preventing thrombosis and provoking bleeding.
Individualized therapy should be based on

**Individual characteristics**
- Thrombotic risk
- Bleeding risk
- Associated co-factors
- DAPT score

**Stent characteristics**
- Type of stent  
  (nr, length, location, diameter, overlap, dissection)
- Coronary anatomy
Many thanks

João Morais
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Leiria Hospital Centre
Chairman WG Thrombosis