Quando rivascolarizzare il paziente anziano con stenosi coronariche paucisintomatiche

Fabrizio Tomai, MD, FACC, FESC
Dept. Cardiovascular Sciences
Interventional Cardiology Unit
European Hospital - Aurelia Hospital
Rome, Italy
Elderly patients (>75 yrs) represent 9.3% of the Italian population (5.4 millions) (ISTAT 31/12/06)

Elderly patients exhibit an higher risk profile with a TIMI risk score > 3-4 nel 92% of patients older than 65 yrs (TACTICS-TIMI 18 trial)

≈ 30% of patients with ACS admitted to our CCUs had > 75 yrs (Blitz study)

In the majority of randomized clinical trials comparing conservative and invasive strategies in patients with CAD, age>75 years is an exclusion criteria
Società Italiana Cardiologia Invasiva

Italian Society of Interventional Cardiology
GISE Data Base

Number of PCIs

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of PCIs</th>
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<td>2003</td>
<td>87,654</td>
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<td>2004</td>
<td>104,574</td>
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<td>2005</td>
<td>115,852</td>
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<td>2006</td>
<td>124,091</td>
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<td>2007</td>
<td>128,428</td>
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<td>2008</td>
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Indication for PCI in Italy
Year 2008: ≈ 128,000 PCIs

- Acute Coronary Syndromes: 61% ≈ 78,000 PCIs
- Stable CAD: 39% ≈ 50,000 PCIs
Indication for PCI in Italy
Year 2008: ≈ 128,000 PCIs

- Acute Coronary Syndromes: 61% ≈ 78,000 PCIs
- Stable CAD: 39% ≈ 35,000 PCIs
  - in >70 yrs: ≈ 15,000 PCIs
PCI vs Medical Therapy for Stable Coronary Disease

Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation (COURAGE) trial

Overall Survival

N=2287

HR, 0.87; 95% CI (0.65-1.16); p=0.38

PCI vs Medical Therapy for Stable Coronary Disease

Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation (COURAGE) trial

Elderly (pre-specified subgroup analysis)

* p<0.001 for incidence of death and MI in older pts compared with younger pts

Teo K K et al. JACC 2009
PCI vs Medical Therapy for Stable Coronary Disease

Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation (COURAGE) trial

Elderly (pre-specified subgroup analysis)

OMT > 65y (444)  PCI > 65y (460)

- Death: p=0.97
- MI: p=0.48
- Death/MI: p=0.51
- Death/MI/stroke: p=0.58
- ACS: p=0.41

Teo K K et al. JACC 2009
Co-existing Vascular Disease: a common finding in elderly patients
Co-existing Vascular Disease: a common finding in elderly patients

Prevalence of CAD (%) in PVD pts

Prevalence of PVD (%) in CAD pts

Therapeutic Strategies in Elderly Patients with Combined Coronary and Carotid Artery Disease

- **Staged Strategy**
  1. CEA > CABG (*risk of AMI 6.5%*) *
  2. CABG > CEA (reversed) (*risk of any stroke 6.3%*) *
  3. CEA > PCI
  4. CABG > CAS
  5. CAS > CABG
  6. PCI > CEA
  7. CAS > PCI
  8. PCI > CAS

  Mixed Strategy

- **Simultaneous Strategy**
  9. CEA & CABG (*death and any stroke 8.7%*) *
  10. CAS & PCI (or PCI & CAS)
  11. Hybrid Approach (CAS & CABG)

* Naylor et al, Eur J Vasc Endovasc Surg 2003
  (Meta-analysis of 97 studies)

F. Tomai, 6/2008
High risk of bleeding in elderly patients undergoing PCI

Guagliumi G. et al Circulation 2004
Duration of dual antiplatelet therapy in elderly pts undergoing PCI

THROMBOSIS

BLEEDING

ACC/AHA/SCAI Guidelines
Pts be treated with DAT for 1 year after DES and at least 1 mo. after BMS, if not at high risk of bleeding (Class IB)
May “Bio-Engineered” Prohealing Stents Be a Solution?

- Stent Surface
- Coronary Blood Flow
- Inflow EPC
- Rolling Cell Surface Attachment and Uptake of Receptors
- Accelerated Differentiation
- Enables Rapid Maturing and Endothelial Expressive Function

May “Bio-Engineered” Prohealing Stents Be a Solution?
May a new polymer-free, carbofilm-coated, abluminal reservoir-based, tacrolimus-eluting stent, that requires only two months of DAPT, be a solution?
PCI vs Medical Therapy for Stable Coronary Disease

Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation (COURAGE) trial

- Enrolled/screened ratio: 6.4%
- Cross over to PCI: 33%

HR, 0.87; 95% CI (0.65-1.16); p=0.38

PCI vs Medical Therapy for Stable Coronary Disease

Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation (COURAGE) trial

High risk pts (pre-specified subgroup analysis)

Log-Rank Chi-Sq: <0.0001

Years after enrollment

Cumulative proportion of cross-over revascularization

High Risk (234 pts)
Non-High Risk (1837 pts)
PCI vs Medical Therapy
Survival Benefit by Amount of Inducible Ischemia

Retrospective study of 10,627 pts without prior MI: treatment (PCI or MT) within 60 days after Myocardial Perfusion Tomography

Unadjusted Kaplan-Meier Survival in pts undergoing revascularization vs medical therapy

Observed cardiac death rates over follow-up period (2 years) in pts undergoing revascularization vs medical therapy as a function of inducible ischemia

Hachamovitch R et al; Circulation 2003
Treatment of Elderly Pts With ACS or CSA: Conservative or Invasive Therapy?

APPROACH Registry

- <70 y, N = 15,392
- 70-79 y, N = 5,198
- ≥ 80 y, N = 983
- CSA: 45% of pts

5-y survival in pts ≥ 80 y
- CABG: 77.4%
- PCI: 72%
- Medical: 60%

Age < 70 (n=15395)

Age > 80 (n=983)

Graham et al, Circulation 2002
Treatment of Elderly Pts With Stable Coronary Disease: Conservative or Invasive Therapy?

- 301 pts
- Age ≥75 y
- Angina CCS ≥2 on ≥2 antianginal drugs
- Invasive (PCI 52%, CABG 20%)

*Death/MI/hospitalization for uncontrolled symptoms or ACS

COURAGE Trial Nuclear Substudy

Survival for patients by residual ischemia

Unadjusted p=0.001
Risk-Adjusted p=0.09

0 % (n= 23)
1 – 4.9 % (n= 141)
5 – 9.9 % (n= 88)
≥ 10 % (n= 62)

314 pts: Myocardial Perfusion Tomography before treatment and after 1 year

Leslee JS et al; Circulation 2008
### STABLE CAD

**High-risk findings on noninvasive imaging study and CCS class III or IV angina**

<table>
<thead>
<tr>
<th>Symptoms Med. Rx</th>
<th>CCS Class III or IV Angina</th>
<th>Stress Test Med. Rx</th>
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<tr>
<td>Class III or IV Max Rx</td>
<td>A A A A A A</td>
<td>High Risk Max Rx</td>
</tr>
<tr>
<td>Class I or II Max Rx</td>
<td>A A A A A A</td>
<td>High Risk No/min Rx</td>
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<tr>
<td>Asymptomatic Max Rx</td>
<td>U A A A A A</td>
<td>Int. Risk Max Rx</td>
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<tr>
<td>Class III or IV No/min Rx</td>
<td>A A A A A A</td>
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<tr>
<td>Class I or II No/min Rx</td>
<td>U A A A A A</td>
<td>Low Risk Max Rx</td>
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<table>
<thead>
<tr>
<th>Coronary Anomy</th>
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<tbody>
<tr>
<td>CTO of 1 vz; no other disease</td>
<td>1-2 vz. disease; no Prox. LAD</td>
<td>1 vz. disease with Prox. LAD</td>
<td>2 vz. disease; no Left Main</td>
<td>3 vz. disease</td>
<td>Coronary Anomy</td>
<td>CTO of 1 vz; no other disease</td>
<td>1-2 vz. disease; no Prox. LAD</td>
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Treatment of Elderly Pts with Stable Coronary Artery Disease: Conservative or Invasive Therapy?

- Goal: Quality of life
- Risk Stratification (amount of inducible ischemia)
- Estimation of life expectancy
- Importance of PCI Strategy
  - femoral, radial or brachial approach?
  - which lesion in MVD? Simultaneous or staged procedure?
  - chronic total occlusion & calcific lesions
  - combined carotid and coronary artery disease
  - contrast burden
  - comorbidities
  - associated medical treatment
  - DES use (bleeding risk)

Each patient requires a tailored treatment