Acute Myocardial Infarction
2004 Update

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Minneapolis, MN

• The Scope of the Problem
• Adjunctive Therapy
• The Lost Art of Thrombolysis

Leading Causes of Mortality in US
2002

<table>
<thead>
<tr>
<th>Condition</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart disease</td>
<td>709,894</td>
</tr>
<tr>
<td>Cancer</td>
<td>561,333</td>
</tr>
<tr>
<td>Cerebrovascular disease (stroke)</td>
<td>166,028</td>
</tr>
<tr>
<td>COPD and allied conditions</td>
<td>123,550</td>
</tr>
<tr>
<td>Accidents</td>
<td>93,592</td>
</tr>
<tr>
<td>Diabetes</td>
<td>68,662</td>
</tr>
<tr>
<td>Influenza and pneumonia</td>
<td>67,024</td>
</tr>
<tr>
<td>Alzheimer's disease</td>
<td>49,044</td>
</tr>
<tr>
<td>Nephritis</td>
<td>37,672</td>
</tr>
<tr>
<td>Septicemia</td>
<td>31,613</td>
</tr>
<tr>
<td>Other Causes</td>
<td>505,712</td>
</tr>
</tbody>
</table>

TOTAL 2,404,624

Deaths and Age-Adjusted Death Rates for Major Cardiovascular Diseases, 1979-2000

<table>
<thead>
<tr>
<th>Year</th>
<th>Death / 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>79</td>
<td>400</td>
</tr>
<tr>
<td>80</td>
<td>400</td>
</tr>
<tr>
<td>81</td>
<td>400</td>
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<td>82</td>
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<td>97</td>
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<tr>
<td>98</td>
<td>400</td>
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<tr>
<td>99</td>
<td>400</td>
</tr>
<tr>
<td>00</td>
<td>400</td>
</tr>
</tbody>
</table>

Hospital Discharges for Cardiovascular Diseases

Economic Costs in Billions of Dollars of Cardiovascular, Lung, and Blood Diseases

<table>
<thead>
<tr>
<th>Disease</th>
<th>Total</th>
<th>Direct</th>
<th>Morbidity</th>
<th>Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cardiovascular disease</td>
<td>329.2</td>
<td>214.0</td>
<td>111.8</td>
<td>8.8</td>
</tr>
<tr>
<td>Heart disease</td>
<td>111.8</td>
<td>65.4</td>
<td>23.2</td>
<td>10.0</td>
</tr>
<tr>
<td>Coronary artery disease</td>
<td>65.4</td>
<td>32.1</td>
<td>14.0</td>
<td>45.2</td>
</tr>
<tr>
<td>CHF</td>
<td>32.1</td>
<td>18.0</td>
<td>7.1</td>
<td>7.3</td>
</tr>
<tr>
<td>Stroke</td>
<td>14.0</td>
<td>9.4</td>
<td>2.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Hypertensive heart disease</td>
<td>7.1</td>
<td>6.7</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>Selected lung diseases</td>
<td>2.7</td>
<td>6.1</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>COPD</td>
<td>1.9</td>
<td>6.4</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Asthma</td>
<td>6.4</td>
<td>4.9</td>
<td>0.9</td>
<td></td>
</tr>
</tbody>
</table>

Stent business for 2003 estimated at $3.2 billion
Acute Myocardial Infarction  
2004 Update

- The Scope of the Problem
- Adjunctive Therapy
- The Lost Art of Thrombolysis

Level of Evidence

- Class A (Strongest)
  - Data derived from multiple randomized clinical trials that involved large numbers of patients
- Class B (Intermediate)
  - Data derives from a limited number of randomized clinical trials that involved small numbers of patients or from careful analyses of nonrandomized studies or observational registries
- Class C (Weakest)
  - Expert consensus


ACC/AHA Classification Scheme

- Class I: Evidence and/or agreement that a given procedure or treatment is useful and effective
- Class II: Conflicting evidence and/or a divergence of opinion about the usefulness/effectiveness of procedure or treatment
  - Class Ila: Evidence / opinion favors usefulness / efficacy
  - Class Ilib: Usefulness / efficacy less well established
- Class III: Evidence and/or general agreement that the treatment is not useful/effective and in some cases may be harmful

ACC / AHA Guidelines for AMI  
Adjunctive Therapy

- Aspirin
- Beta blockers
- ACE inhibitors
- Lipid reduction
- Smoking cessation
Treatment of AMI
Aspirin

- Antiplatelet Trialists Collaboration
  - Risk of recurrent MI, stroke, or death was reduced by 29% in patients with acute MI.
  - Benefit witnessed in understudied groups
    - Elderly
    - Females
    - History of prior MI, stroke / TIA
- Aspirin should be continued indefinitely following AMI in all patients without contraindications.


Treatment of Athersclerosis
Clopidogrel: The CAPRIE Trial

- 19,185 patients
  - Recent ischemic CVA
  - Recent MI
  - Symptomatic PVD
  - Clopidogrel slightly increased risk of diarrhea and rash.
- Recent report described 11 cases of TTP (days 1-14) among 3 million patients


Treatment of Acute Coronary Syndromes
Clopidogrel: The CURE Trial

- 12,562 patients with UA / NSTEMI
- ASA + Clopidogrel: 11.5%
- ASA: 12.9%
- Clopidogrel: 15.8%


Aspirin Dosage
Antithrombotic Trialists’ Collaboration

- Any dose 65 12.9% 16.0%
- < 75 3 17.3% 19.4%
- 75-150 12 10.9% 15.2%
- 160-325 19 11.5% 15.8%
- 500-1500 34 14.5% 17.2%

**Clopidogrel and CABG**

**Increased Risk**

<table>
<thead>
<tr>
<th></th>
<th>Clopidogrel (n=59)</th>
<th>No Clopidogrel (n=165)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest tube output (24 hr)</td>
<td>1224 ± 1119</td>
<td>840 ± 621</td>
<td>0.001</td>
</tr>
<tr>
<td>Transfusions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red blood cells</td>
<td>2.51 ± 2.41</td>
<td>1.74 ± 2.16</td>
<td>0.001</td>
</tr>
<tr>
<td>Platelets</td>
<td>0.86 ± 1.20</td>
<td>0.24 ± 0.60</td>
<td>0.001</td>
</tr>
<tr>
<td>Exposure to blood products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red blood cells</td>
<td>79.7%</td>
<td>58.2%</td>
<td>0.004</td>
</tr>
<tr>
<td>Platelets</td>
<td>50.8%</td>
<td>18.2%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Reoperation for bleeding</td>
<td>6.8%</td>
<td>0.6%</td>
<td>0.018</td>
</tr>
<tr>
<td>Post-op length of stay &lt; 5 days</td>
<td>33.9%</td>
<td>46.7%</td>
<td>0.09</td>
</tr>
</tbody>
</table>


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**The CURE Trial**

**Impact of Aspirin Dose on Outcomes**

![Graph showing impact of aspirin dose on outcomes](image)


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**Treatment of AMI**

**ACC / AHA Guidelines: Antiplatelet Rx**

- **Class I:**
  - Antiplatelet therapy should be initiated promptly. ASA should be administered as soon as possible after presentation and is continued indefinitely.
  - Clopidogrel should be administered to hospitalized patients who are unable to take ASA because of hypersensitivity or major gastrointestinal bleeding.


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**ACC / AHA Guidelines for AMI**

**Adjunctive Therapy**

- Aspirin
- Beta blockers
- ACE inhibitors
- Lipid reduction
- Smoking cessation

---

**Treatment of AMI**

**ACC / AHA Guidelines: Antiplatelet Rx**

- **Class I:**
  - In patients for whom noninterventional or percutaneous approach is planned, clopidogrel should be added to ASA on admission and continued for at least one month and up to 9 months.
  - In patients taking clopidogrel in whom CABG is planned, if possible the drug should be withheld for at least 5 days, and preferably 7 days.


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**Beta Blockers: Pharmacology**

- Decrease myocardial oxygen demand reduces recurrent ischemia and limits infarct expansion
  - Decrease pulse (beta blockade)
  - Decrease afterload reduction
  - Decrease contractility
- Increased electrical stability results in decreased sudden cardiac death
  - Decrease VT and VF
### Treatment of AMI

#### Beta Blockers and Early Mortality

<table>
<thead>
<tr>
<th>Trial</th>
<th>Endpoint</th>
<th>Placebo</th>
<th>Beta Blocker</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISIS-1</td>
<td>7 days</td>
<td>4.6%</td>
<td>3.9%</td>
<td>&lt;0.04</td>
</tr>
<tr>
<td>Goteberg</td>
<td>90 days</td>
<td>8.9%</td>
<td>5.7%</td>
<td>0.03</td>
</tr>
<tr>
<td>MIAMI</td>
<td>15 days</td>
<td>4.9%</td>
<td>4.3%</td>
<td>0.29</td>
</tr>
<tr>
<td>TIMI-2</td>
<td>6 days</td>
<td>2.4%</td>
<td>2.4%</td>
<td>0.99</td>
</tr>
</tbody>
</table>


#### Beta Blockers and Late Mortality

- Beta blockers’ benefit is sustained, and applicable across a broad range of patients, including those with “relative contraindications”
  - Diabetes
  - Heart failure
  - COPD

### Treatment of AMI

#### ACC / AHA Guidelines: Beta Blockers

- **Class I**
  - Patients without contraindications who can be treated within 12 hours of onset, irrespective of thrombolytic therapy or performance of coronary intervention
  - Continuing or recurrent ischemic chest pain
  - Tachyarrhythmias
  - Non ST elevation MI
- **Class IIb**
  - Patients with moderate LV failure or other contraindications to β-adrenoceptor blocker therapy, provided they can be monitored closely.


### Treatment of AMI

#### ACE Inhibitors: Pharmacology

**ACE-I PROMOTES**
- Angiotensinogen
- Angiotensin I
- Angiotensin II
- Angiotensin converting enzyme
- Bradykinin
- Inactive metabolites
- Vasoconstriction
- ↑ Sympathetic activity
- ↑ Aldosterone
- ↑ Na Retention
- ↑ Intravascular volume

**ACE-I BLOCKS**
- AT-1 Receptor
- AT-1 Receptor Antagonist
- Angiotensin
- Liver
- Lung


### Treatment of AMI

#### ACC / AHA Guidelines for AMI

- **Adjunctive Therapy**
  - Aspirin
  - Beta blockers
  - ACE inhibitors
  - Lipid reduction
  - Smoking cessation

### Treatment of AMI

#### ACE Inhibitors

<table>
<thead>
<tr>
<th>Trial</th>
<th>Endpoint</th>
<th>Placebo</th>
<th>ACE-I</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMILE</td>
<td>42 days</td>
<td>6.5%</td>
<td>4.9%</td>
<td>0.19</td>
</tr>
<tr>
<td>CATS</td>
<td>3 months</td>
<td>4.0%</td>
<td>6.0%</td>
<td>N/A</td>
</tr>
<tr>
<td>CONSENSUS-2</td>
<td>6 months</td>
<td>9.4%</td>
<td>10.2%</td>
<td>NS</td>
</tr>
<tr>
<td>AIRE</td>
<td>15 months</td>
<td>23%</td>
<td>17%</td>
<td>0.002</td>
</tr>
<tr>
<td>TRACE</td>
<td>24 months</td>
<td>42.3%</td>
<td>34.7%</td>
<td>0.001</td>
</tr>
<tr>
<td>SAVE</td>
<td>42 months</td>
<td>24.6%</td>
<td>20.4%</td>
<td>0.019</td>
</tr>
</tbody>
</table>

30-Day mortality was reduced by 7%.
Most benefit was seen in first week.
Absolute benefit greatest in high risk groups (Killip class 2 or 3, HR > 100, anterior MI).
Overall long-term mortality odds reduction 18-27% for patients with LV dysfunction after acute MI.


Parampril 24 Hour AUC (ng/ml/hr)

\[
\begin{align*}
0 & \quad 10 & \quad 20 & \quad 30 & \quad 40 & \quad 50 & \quad 60 & \quad 70 & \quad 80 & \quad 90 & \quad 100 \\
\text{Ramipril} & \quad & & & & & & & & & \\
\text{Placebo} & \quad & & & & & & & & & \\
\end{align*}
\]

Incidence of TIMI 2/3 Flow (%)

\[
\begin{align*}
0 & \quad 10 & \quad 20 & \quad 30 & \quad 40 & \quad 50 & \quad 60 & \quad 70 & \quad 80 & \quad 90 & \quad 100 \\
\text{Ramipril} & \quad & & & & & & & & & & & \\
\text{Placebo} & \quad & & & & & & & & & & & \\
\end{align*}
\]

P = 0.013
P = 0.035
P = 0.001

Ischemic Events (%)

\[
\begin{align*}
0 & \quad 1 & \quad 2 & \quad 3 & \quad 4 & \quad 5 & \quad 6 & \quad 7 & \quad 8 & \quad 9 & \quad 10 \\
\text{Ramipril} & \quad & & & & & & & & & & & \\
\text{Placebo} & \quad & & & & & & & & & & & \\
\end{align*}
\]

P = 0.001


Registry of 14,608 patients with ST segment elevation MI

- Ramipril (4.7%)
- Other ACE inhibitor (39.0%)
- No ACE inhibitor (56.3%)

P < 0.001

0 7 14 21
Days Post MI

Survival (%)
**Lipid Management: Spectrum of Clinical Trials**

- **No history of CAD**
  - AFCAPS / TexCAPS
  - WOSCOPS
  - MIRACL
- **Unstable CAD**
  - 4 mo
  - CARE/LIPID
- **Stable CAD**
  - 3 mo
  - 4S
  - 6 mo

*Randomization:*
- 24–96 h
- 3 mo
- 6 mo

**Primary prevention** → **Secondary prevention** →


Duration of follow-up:
- 1 5.0 years
- 2 6.1 years
- 3 5.4 years

---

**Treatment of AMI**

**ACC / AHA Guidelines: Lipid Management**

<table>
<thead>
<tr>
<th>Trial</th>
<th>Endpoint</th>
<th>Duration</th>
<th>Placebo</th>
<th>ACE-I</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>4S</td>
<td>Mortality</td>
<td>5.4 yrs</td>
<td>12%</td>
<td>8%</td>
<td>0.0003</td>
</tr>
<tr>
<td>CARE</td>
<td>Mortality &amp; Nonfatal MI</td>
<td>5 yrs</td>
<td>13.2%</td>
<td>10.2%</td>
<td>0.003</td>
</tr>
<tr>
<td>LIPID</td>
<td>Mortality</td>
<td>6.1 yrs</td>
<td>14.1%</td>
<td>11.0%</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>


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**Treatment of AMI**

**Lipid Reduction: MIRACL Trial**

- **TC**
- **LDL-C**
- **HDL-C**
- **TG**

Additional data courtesy of GG Schwartz.

**Treatment of AMI**

**Lipid Reduction: MIRACL Trial**

- **Placebo**
- **Atorvastatin**

Additional data courtesy of GG Schwartz.

---

**Comparisons of Statins**

**The CURVES Trial**

- **Fluvastatin**
- **Pravastatin**
- **Lovastatin**
- **Simvastatin**
- **Atorvastatin**

Mean % LDL-C reduction vs. dose range (mg)

* Significantly less than atorvastatin 10 mg (P<0.02).
† Significantly less than atorvastatin 20 mg (P<0.01).
‡ Significantly greater than mg-equivalent dose of comparative agents (P<0.01).


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**STELLAR Trial**

**Mean LDL-Cholesterol Reduction**

- **Pravastatin**
- **Simvastatin**
- **Atorvastatin**
- **Rosuvastatin**

Significance: p < 0.002

* P value < 0.001 vs. rosvastatin 10 mg
† P = 0.026 vs. rosvastatin 10 mg
‡ P value < 0.001 vs. rosvastatin 20 mg
.§ P = 0.002 vs. rosvastatin 20 mg
¶ P value < 0.001 vs. rosvastatin 40 mg
‖ P = 0.006 vs. rosvastatin 40 mg

**STELLAR Trial**

Mean HDL-Cholesterol Increase

- Pravastatin
- Simvastatin
- Atorvastatin
- Rosuvastatin

<table>
<thead>
<tr>
<th>Dose (mg)</th>
<th>Mean % HDL Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>40</td>
<td>6</td>
</tr>
<tr>
<td>80</td>
<td>8</td>
</tr>
</tbody>
</table>

* P value < 0.002 vs. rosuvastatin 10 mg
† P value < 0.002 vs. rosuvastatin 20 mg
‡ P value < 0.002 vs. rosuvastatin 40 mg


**ACC / AHA Guidelines for AMI**

Adjunctive Therapy

- Aspirin
- Beta blockers
- ACE inhibitors
- Lipid reduction
- Smoking cessation

**Treatment of AMI**

Smoking Cessation Counseling

- 30% of all coronary heart disease (CHD) deaths in the US each year are attributable to smoking.
- Smokers with AMI who quit see 50% lower risk of death and recurrent MI than smokers who continue.
- Risk reduction begins soon after cessation of smoking, and continues to decrease over time, as long as abstinence continues.


**Acute Myocardial Infarction**

2004 Update

- The Scope of the Problem
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- The Lost Art of Thrombolysis

**Impact of Thrombolysis**

Meta-Analysis of Fibrinolytic Trials

<table>
<thead>
<tr>
<th>30-Day Mortality (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thrombolysis</td>
</tr>
<tr>
<td>Control</td>
</tr>
</tbody>
</table>

9.6  11.5

p < 0.00001  18% risk reduction

Trials: GISSI-1, ISAM, AIMS, ISIS-2, ASSET, USIM, ISIS-3, EMERAS, LATE

FTT Collaborators, Lancet 1994; 343: 311-22
ACC / AHA Guidelines
Thrombolysis

- Class I (Evidence and general agreement)
  - ST elevation > 0.1 mV in ≥ 2 contiguous leads in patients age < 75 presenting within 12 hours of symptom onset
  - BBB obscuring ST segments, history suggesting AMI
- Class IIa (Divergence of opinion, evidence favors use)
  - ST elevation, age ≥ 75
- Class IIb (Efficacy less well established by evidence)
  - ST elevation, patients presenting 12-24 hours
  - BP > 180/110 in high risk patients

Fibrinolytic Therapy
Comparison of Agents

<table>
<thead>
<tr>
<th>2nd Generation</th>
<th>3rd Generation</th>
<th>3rd Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alteplase</td>
<td>Replase</td>
<td>Tenecteplase</td>
</tr>
<tr>
<td>Kringle 1</td>
<td>Kringle 1</td>
<td>Kringle 2</td>
</tr>
<tr>
<td>EGF</td>
<td>EGF</td>
<td></td>
</tr>
</tbody>
</table>

Glycosylated, large with more domains
Non-glycosylated, small with domains specific for clot specific fibrinolysis

Comparison of Thrombolytic Agents

Fibrin specificity
- +++: tPA
- +++: rPA
- +++: TNK

Impact of Thrombolysis on Mortality
Comparison of Thrombolytic Agents

Impact of Thrombolysis on Reinfarction
Comparison of Thrombolytic Agents

Efficacy of Thrombolysis
GUSTO-1 Angiographic Substudy

TIMI 0 & TIMI-1 27% 20% 15% 10% 5%
TIMI 2 10% 15% 20% 25% 30%
TIMI 3 30% 40% 50% 60% 70%

Impact of Thrombolysis on ICH
Comparison of Thrombolytic Agents

Thrombolytic Therapy
Impact of Delay on 30-Day Mortality

Thrombolytic Therapy
Pre-Hospital Administration

Delays in Thrombolytic Therapy
Cooperative Cardiovascular Project

ACC / AHA Guidelines
Time to Thrombolysis

The Antithrombin Pathway
The Antiplatelet Pathway

The Antithrombin Pathway
The Antiplatelet Pathway
The GP2b3a Inhibitors
Comparison of Agents

<table>
<thead>
<tr>
<th></th>
<th>Abciximab (Reopro)</th>
<th>Tirofiban (Aggrastat)</th>
<th>Eptifibatide (Integrelin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>Centocor</td>
<td>Merck</td>
<td>Millennium</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Monoclonal Ab</td>
<td>Nonpeptide</td>
<td>Peptide</td>
</tr>
<tr>
<td>Half Life (1/2)</td>
<td>30 minutes</td>
<td>2 hours</td>
<td>2.5 hours</td>
</tr>
<tr>
<td>Dosing Regimen</td>
<td>Bolus: 0.25 mg/kg</td>
<td>Bolus (30 min): 0.4 µg/kg/min</td>
<td>Bolus: 180 µg/kg/min</td>
</tr>
<tr>
<td></td>
<td>Infuse: 10 µg/min</td>
<td>Infuse: 0.1 µg/kg/min</td>
<td>Infuse: 2 µg/kg/min</td>
</tr>
<tr>
<td>Reversible binding</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Renal dose adjustment</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Antigenicity</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Reverse with platelet TX</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Combination Lytics & GP2b3a
TIMI-3 Flow Rates

GUSTO V: Retevase & Reopro
Trial Design

- No Abciximab
- Abciximab
- 2 x 10 U bolus (30’)
- 2 x 5 U bolus (30’)

Standard Heparin: 5,000 U bolus followed by either 800 U/hr (pts < 80 kg) or 1,000 U/hr (pts ≥ 80 kg) infusion

Low Dose Heparin: 60 U/kg bolus followed by a 7 U/kg/h infusion

1º endpoint: mortality at 30 days
2º endpoint: clinical and safety events at 7 and 30 days

GUSTO V: Retevase & Reopro
30-Day Mortality

- p = 0.43 for superiority
- Non-inferiority RR 0.95 (95% CI, 0.84-1.08)

At 1 year, mortality 8.4% in both arms.

GUSTO V: Retevase & Reopro
Intracranial Hemorrhage

- p = NS
- p = 0.069

GUSTO V: Retevase & Reopro
Bleeding

- p < 0.001
- p < 0.001
- p < 0.001
- p < 0.001

GUSTO V: Retevase & Reopro
Intracranial Hemorrhage (%)
BRAVE: Reteplase & Reopro
Clinical Endpoints


ASSENT III: TNK, Lovenox, Reopro
Trial Design

ASSENT III: TNK, Lovenox, Reopro
Primary Endpoint

ASSENT III: TNK, Lovenox, Reopro
30-Day Mortality

ASSENT III: TNK, Lovenox, Reopro
Intracranial Hemorrhage

ASSENT III: TNK, Lovenox, Reopro
In-Hospital Bleeding

Acute Myocardial Infarction 2004 Update

- The Scope of the Problem
- Adjunctive Therapy
- The Lost Art of Thrombolysis
- The 21st Century and PCI
- To Transfer or Not to Transfer
- Quality Improvement Initiatives

Weighing the Risk and Benefit
Thrombolysis vs PCI

<table>
<thead>
<tr>
<th>Thrombolysis</th>
<th>Primary Angioplasty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readily accessible</td>
<td>24 hour cath lab access</td>
</tr>
<tr>
<td>Rapid delivery</td>
<td>Inherent delay in therapy</td>
</tr>
<tr>
<td>Lower initial costs</td>
<td>Higher initial costs</td>
</tr>
<tr>
<td>Ineligible patient</td>
<td>Expanded eligible population</td>
</tr>
<tr>
<td>Incomplete reperfusion</td>
<td>Complete reperfusion</td>
</tr>
<tr>
<td>Hemorrhagic stroke</td>
<td>Minimal risk of stroke</td>
</tr>
<tr>
<td>Longer hospital stay</td>
<td>Shorter hospital stay</td>
</tr>
<tr>
<td>Unable to identify extent</td>
<td>Early triage (5% reperfuse,</td>
</tr>
<tr>
<td>of CAD</td>
<td>5% require CABG)</td>
</tr>
<tr>
<td>Mortality floor</td>
<td>? Mortality floor</td>
</tr>
</tbody>
</table>

Reperfusion Therapy
Initial Pharmacologic Therapy

- Hirudin Better
- Hirudin Worse

Suitability of Thrombolysis

- Retrospective cohort study of 2965 patients age ≥ 65 discharged with a diagnosis of AMI from hospitals in Connecticut between 5/92 - 5/93
- Only 753 (25%) of patients were considered eligible for thrombolysis based on ECG criteria and exclusion of individuals with absolute or relative contraindications

PTCA versus Thrombolysis Meta-Analysis of Randomized Trials


Combination Lytic Therapy SHOCK Trial


Relationship Between Primary PTCA and Early Clinical Outcomes


ACC / AHA Guidelines Primary Coronary Angioplasty


The End