



# **Reperfusion Therapy for STE ACS in 2004**

## **Thrombolysis versus Primary PCI**

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## Methods

Survey Period	1.3 – 30.9.2004*
Inclusion criteria	ACS (AMI or UAP) 30-50 pts/ Center
Exclusion criteria	No
# of Participating Countries	32
# of Medical Centers	190
# of Included Patients	6356
Follow-up	30-d (1 year)

\* *MASCARA-SPAIN up to 31.10.2004*

## Admission Type of ACS

**6356 Pts**

**STE ACS**  
**3039 Pts**  
**48%**

**ACS with  
Undeter. ECG**  
**7%**

**NSTE ACS**  
**2888 Pts**  
**45%**

**Unstable  
Angina**  
**217 (7%)**

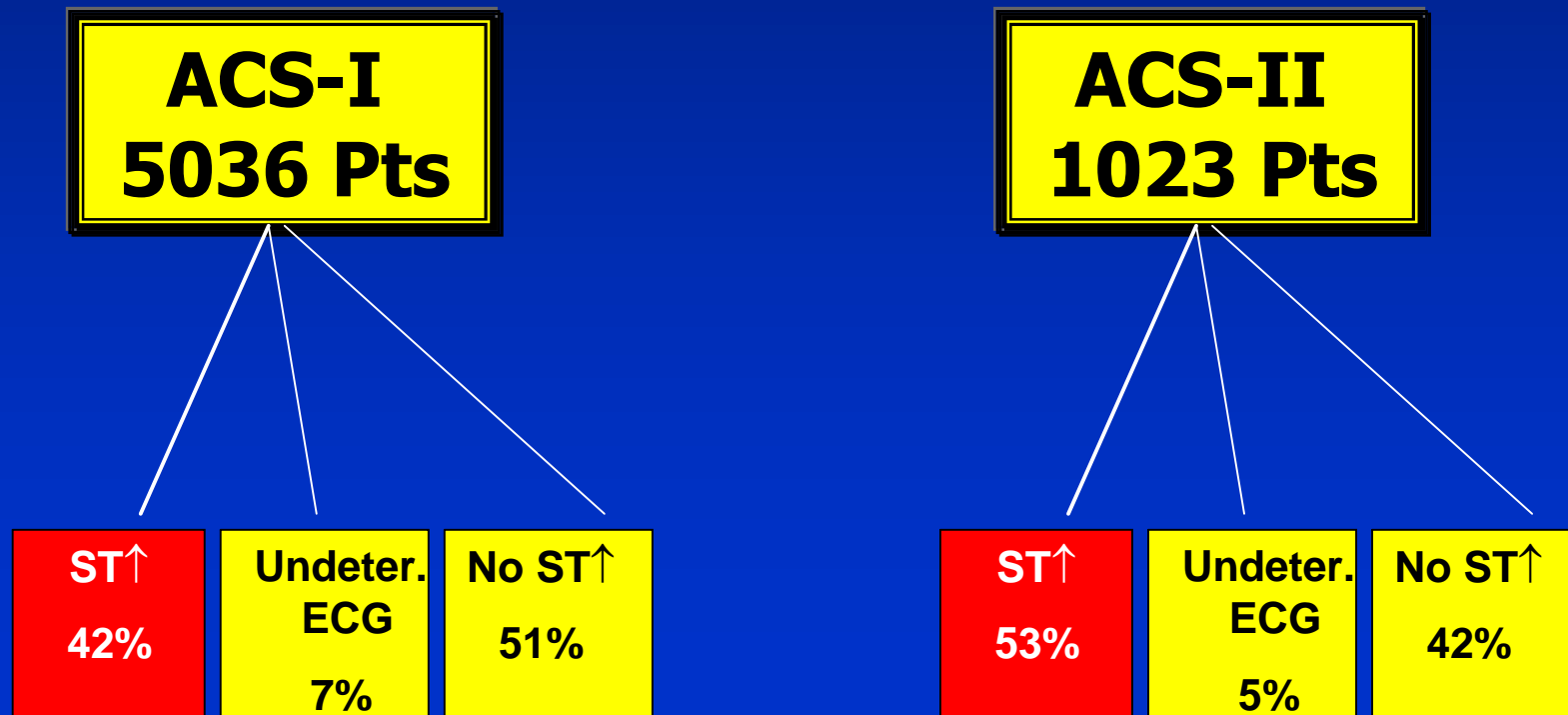
**AMI**  
**2760  
(93%)**

**Unstable  
Angina**  
**1247 (45%)**

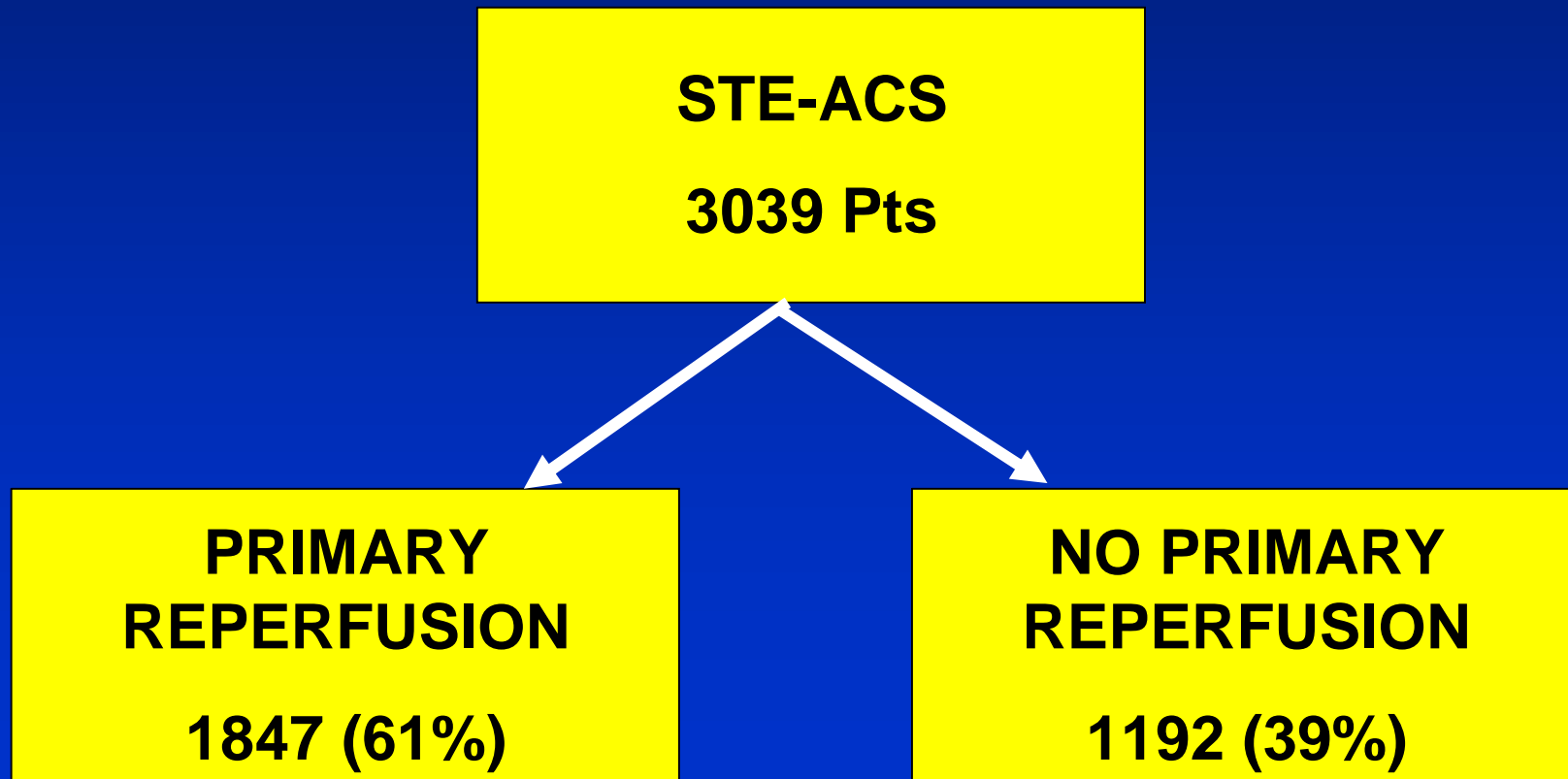
**AMI**  
**1496  
(55%)**

# Comparison between ACS-I and ACS-II in the *Same Hospitals*

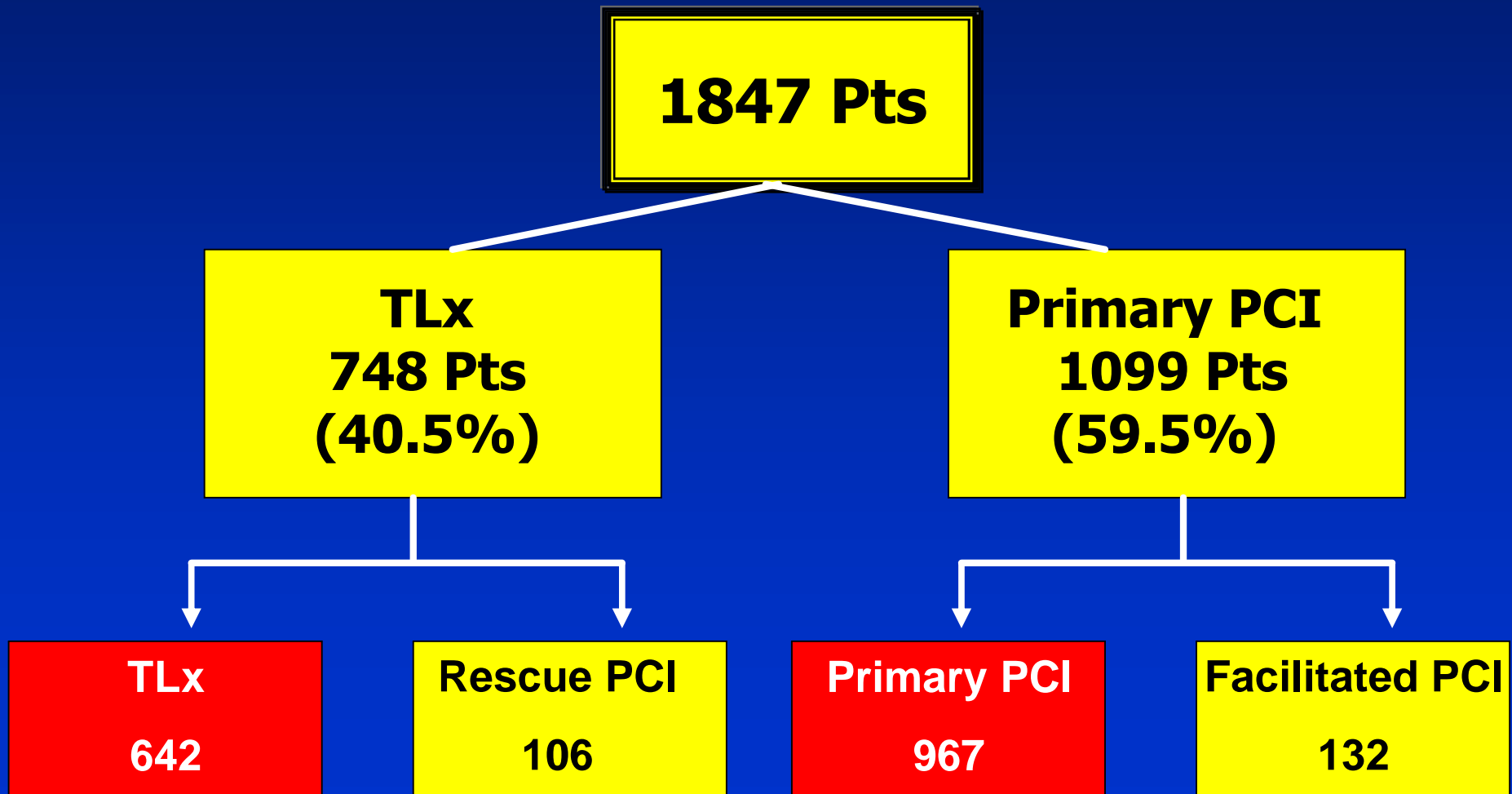
## Admission Type of ACS



# Primary Reperfusion Frequency in ACS II

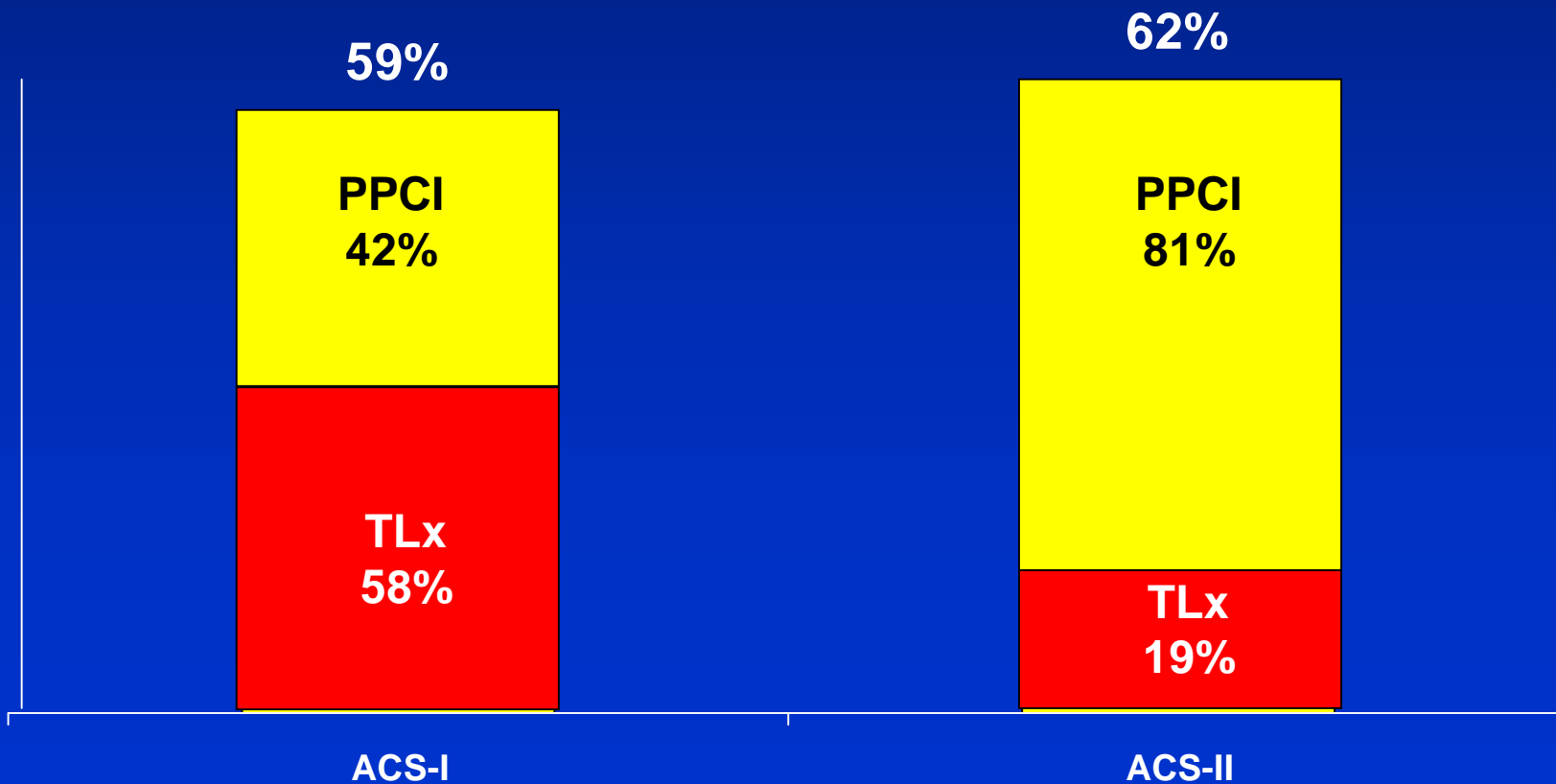


# Mode of Primary Reperfusion in STE-ACS II patients



# Comparison between ACS-I and ACS-II in the *Same Hospitals*

## STE-ACS - Primary Reperfusion Therapy



## Reasons for not giving Primary Reperfusion Therapy in STE-ACS II Patients

	1192 (%)
<b>Late arrival</b>	<b>26</b>
<b>Uncertain diagnosis</b>	<b>15</b>
<b>Early ST resolution</b>	<b>11</b>
<b>Contra-indication</b>	<b>7</b>
<b>Advanced age</b>	<b>3</b>
<b>Other</b>	<b>26</b>
<b>Missing</b>	<b>12</b>

## STE-ACS II : Patient Characteristics and Risk Factors

	Primary Reperfusion 1847 (%)	No Primary Reperfusion 1192 (%)
<b>Age (mean) yrs</b>	<b>61±12</b>	<b>66±14</b>
Men	78	68
Diabetes	19	26
Hypertension	46	59
Hyperlipidemia	44	42
Current Smoking	<b>50</b>	35

## STE-ACS II : History and Presentation

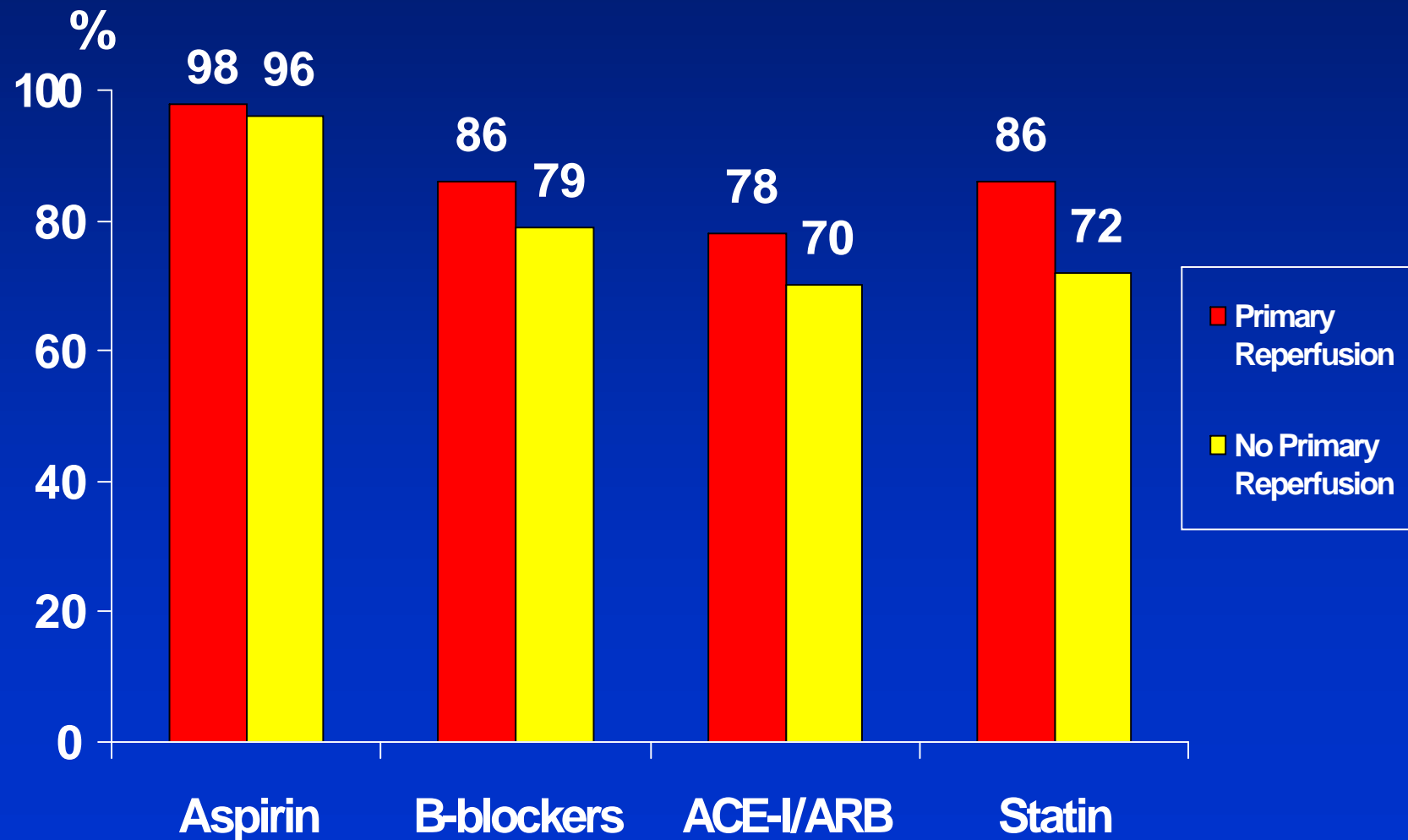
	Primary Reperfusion 1847 (%)	No Primary Reperfusion 1192 (%)
MI	13	21
PCI	8	8
CABG	2	5
Killip $\geq 2$	18	24
Onset to ER arrival*	120 (70-220)	240 (110-731)

\* Minutes (25%-75%)

**STE-ACS II : In-hospital Management**

	<b>Primary Reperfusion 1847 (%)</b>	<b>No Primary Reperfusion 1192 (%)</b>
<b>Heparin</b>	<b>78</b>	<b>71</b>
<b>Clopidogrel</b>	<b>80</b>	<b>56</b>
<b>IIb-IIIa</b>	<b>38</b>	<b>19</b>
<b>Coronary angio.</b>	<b>81</b>	<b>53</b>
<b>PCI</b>	<b>76</b>	<b>29</b>
<b>CABG</b>	<b>2</b>	<b>4</b>

## STE-ACS II : In-hospital Management



**STE-ACS II : Patient Characteristics**

	<b>TLx 748 (%)</b>	<b>Primary PCI 1099 (%)</b>
<b>Men</b>	<b>78</b>	<b>78</b>
<b>Age (mean) yrs</b>	<b>61±12</b>	<b>61±12</b>
<b>Prior MI</b>	<b>12</b>	<b>14</b>
<b>Diabetes</b>	<b>18</b>	<b>20</b>
<b>Hypertension</b>	<b>45</b>	<b>47</b>
<b>Hyperlipidemia</b>	<b>42</b>	<b>46</b>
<b>Current smoking</b>	<b>49</b>	<b>51</b>

**STE-ACS II : Admission Parameters**

	<b>TLx 748 (%)</b>	<b>Primary PCI 1099 (%)</b>
<b>Killip Class I</b>	<b>85</b>	<b>80</b>
<b>II/III</b>	<b>13</b>	<b>17</b>
<b>IV</b>	<b>2</b>	<b>3</b>
<b>Onset→ ER arrival (minutes 25%-75%)</b>	<b>110 (60-199)</b>	<b>122 (75-240)</b>
<b>ER→reperfusion (minutes 25%-75%)</b>	<b>36 (20-60)</b>	<b>70 (38-120)</b>

**STE-ACS II : In-hospital Treatment**

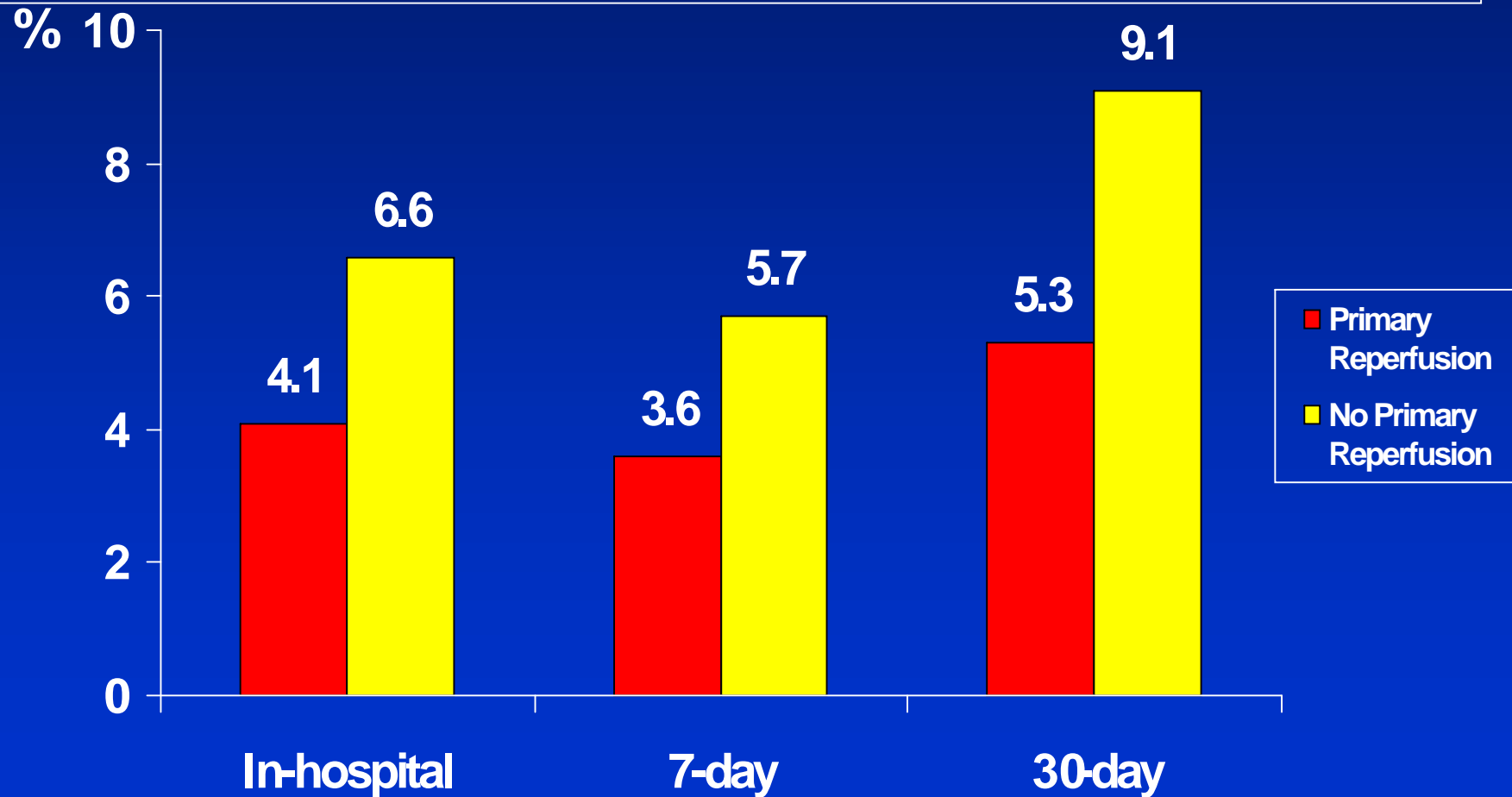
	<b>TLx 748 (%)</b>	<b>Primary PCI 1099 (%)</b>
<b>Aspirin</b>	<b>97</b>	<b>98</b>
<b>Heparin</b>	<b>79</b>	<b>78</b>
<b>IIb-IIIa</b>	<b>13</b>	<b>55</b>
<b>Clopidogrel</b>	<b>55</b>	<b>96</b>
<b>β-blockers</b>	<b>86</b>	<b>85</b>
<b>ACE-I/ARB</b>	<b>75</b>	<b>79</b>
<b>Statins</b>	<b>82</b>	<b>88</b>

**STE-ACS II : Invasive Procedures**

	<b>TLx 748 (%)</b>	<b>Primary PCI 1099 (%)</b>
<b>Coronary angio</b>	<b>54</b>	<b>100</b>
<b>PCI</b>	<b>40</b>	<b>100</b>
<b>CABG</b>	<b>3</b>	<b>1</b>

## STE-ACS II : Mortality

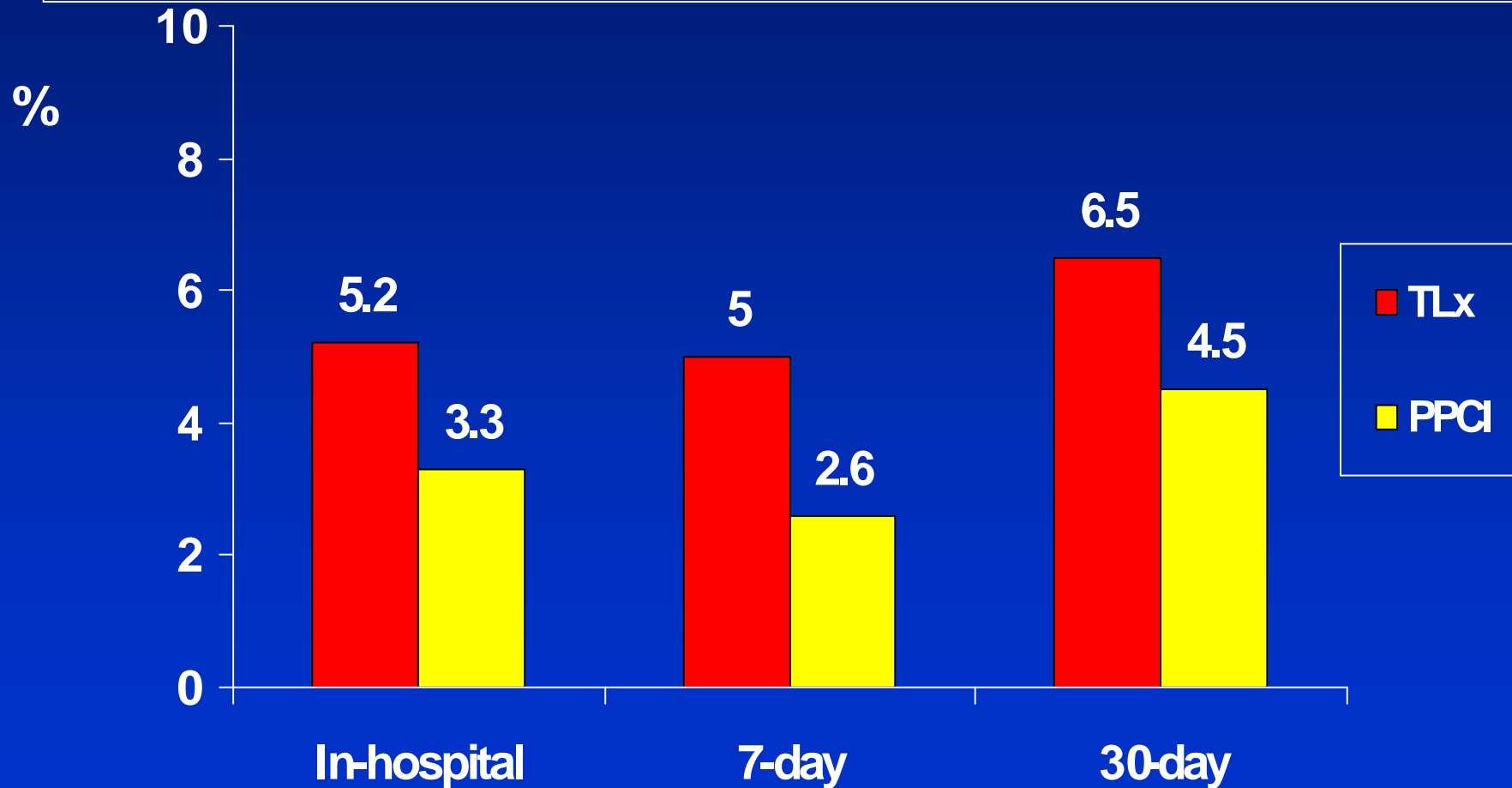
### Reperfusion vs. No Reperfusion Therapy



Adj OR(95% CI) 0.88 (0.62-1.26) 0.89 (0.61-1.30) 0.84 (0.60-1.17)

## STE-ACS II : Mortality

### Primary PCI vs. Thrombolysis



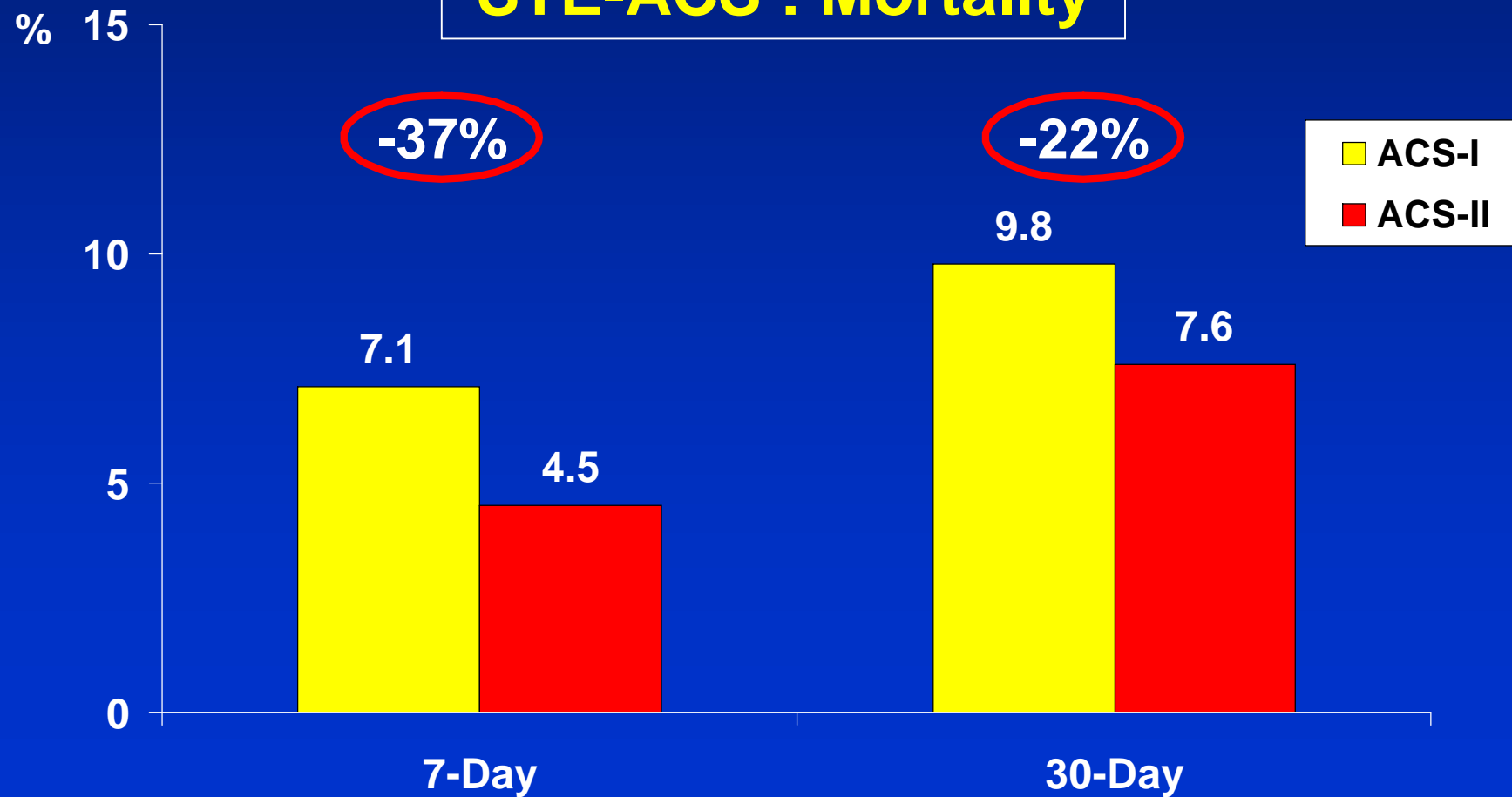
Adj OR(95% CI) 0.55 (0.34-0.91) 0.46 (0.27-0.78) 0.59 (0.37-0.94)

**Mortality (%) by Mode of Primary Reperfusion**

	<b>TLx (n=642)</b>	<b>Rescue PCI (n=106)</b>	<b>Primary PCI (n=967)</b>	<b>Facilitated PCI (n=132)</b>
<b>In-hospital</b>	<b>4.7</b>	<b>8.5</b>	<b>3.5</b>	<b>3.0</b>
<b>At 7 days</b>	<b>4.6</b>	<b>7.6</b>	<b>2.7</b>	<b>1.5</b>
<b>At 30 days</b>	<b>6.1</b>	<b>9.1</b>	<b>4.6</b>	<b>3.6</b>

# Comparison between ACS-I and ACS-II in the *Same Hospitals*

## STE-ACS : Mortality



- 1. The frequency of STE-ACS was significantly higher in ACS-II (53%) than in ACS-I (42%) when considering hospitals that participated in both surveys.**
- 2. Patient characteristics were comparable and the rate of primary reperfusion did not change significantly (59% vs. 62%).**

- 3. The use of reperfusion therapy did not increase substantially. There was however a significant increase in the use of primary PCI in ACS-II.**
- 4. To what extent the lower early mortality in STE-ACS patients in ACS-II in hospitals participating in both surveys is related to improved management, better adherence to guidelines or change in diagnostic criteria for MI remains to be investigated.**

# EHS – ACS-II



EUROPEAN  
SOCIETY OF  
CARDIOLOGY

**Patient Characteristics by Mode of Primary Reperfusion**

	<b>TLx (n=642)</b>	<b>Rescue PCI (n=106)</b>	<b>Primary PCI (n=642)</b>	<b>Facilitate d PCI (n=106)</b>
<b>Men(%)</b>	<b>76</b>	<b>85</b>	<b>78</b>	<b>80</b>
<b>Age (mean) yrs</b>	<b>61±12</b>	<b>61±12</b>	<b>61±12</b>	<b>61±12</b>
<b>Prior MI</b>	<b>13</b>	<b>9</b>	<b>14</b>	<b>13</b>
<b>Diabetes</b>	<b>18</b>	<b>20</b>	<b>21</b>	<b>18</b>
<b>Hypertension</b>	<b>45</b>	<b>43</b>	<b>47</b>	<b>43</b>
<b>Hyperlipidemia</b>	<b>41</b>	<b>44</b>	<b>45</b>	<b>55</b>

**Patient Characteristics by Mode of Primary Reperfusion**

	<b>TLx (n=642)</b>	<b>Rescue PCI (n=106)</b>	<b>Primary PCI (n=642)</b>	<b>Facilitate d PCI (n=106)</b>
<b>Men(%)</b>	<b>76</b>	<b>85</b>	<b>78</b>	<b>80</b>
<b>Age (mean) yrs</b>	<b>61±12</b>	<b>61±12</b>	<b>61±12</b>	<b>61±12</b>
<b>Prior MI</b>	<b>13</b>	<b>9</b>	<b>14</b>	<b>13</b>
<b>Diabetes</b>	<b>18</b>	<b>20</b>	<b>21</b>	<b>18</b>
<b>Hypertension</b>	<b>45</b>	<b>43</b>	<b>47</b>	<b>43</b>
<b>Hyperlipidemia</b>	<b>41</b>	<b>44</b>	<b>45</b>	<b>55</b>

**In-hospital Treatment by Mode of Primary Reperfusion**

	<b>TLx (n=642)</b>	<b>Rescue PCI (n=106)</b>	<b>Primary PCI (n=967)</b>	<b>Facilitated PCI (n=132)</b>
<b>Aspirin</b>	<b>97</b>	<b>98</b>	<b>99</b>	<b>96</b>
<b>Heparin</b>	<b>80</b>	<b>74</b>	<b>77</b>	<b>84</b>
<b>Clopidogrel</b>	<b>49</b>	<b>92</b>	<b>96</b>	<b>95</b>
<b>IIb-IIIa</b>	<b>10</b>	<b>36</b>	<b>52</b>	<b>78</b>
<b>β-blocker</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>82</b>
<b>ACE-I/ARB</b>	<b>74</b>	<b>79</b>	<b>80</b>	<b>75</b>
<b>Statin</b>	<b>82</b>	<b>83</b>	<b>89</b>	<b>83</b>