



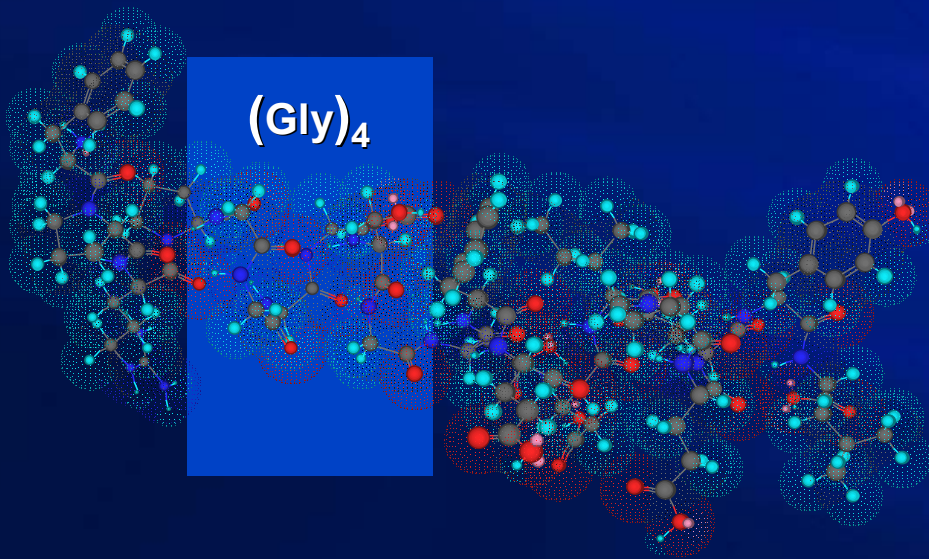
The HERO-2 Trial Background

Design and Baseline Characteristics

Bivalirudin Pharmacology



Gly-Pro-Arg-Pro
(active site binding region)



C-terminal dodecapeptide
(exosite 1-binding region)

- **Bivalent direct thrombin inhibitor**
- **High specificity and potency**
- **Lack of dependence on antithrombin-III**
- **Effect on clot-bound & free thrombin**
- **No platelet activation**
- **No inhibition by PF4 and others**
- **Reversible**

Objectives



Comparison of **bivalirudin** vs. **heparin**

- 30-day mortality
- Re-infarction
- Bleeding

Statistical Plan



Assumptions

- 7% control group mortality rate at 30-days
- 15% relative risk reduction on bivalirudin
- $\alpha = 0.05$, $1-\beta = 0.80$
- Sample size 8,500 patients per group
- Analysis adjusted for GUSTO risk factors

Main Entry Criteria



Inclusion

- Chest pain
<6h since onset
>30 min duration
- ECG
ST elevation
New LBBB

Exclusion

- Active bleeding
- Prior stroke
- Major surgery <6 wks
- GI bleeding <6 wks
- Severe hypertension
(>180/110)

Risk Factors



	Bivalirudin <i>n = 8516</i>	Heparin <i>n = 8557</i>
	(%)	(%)
Previous MI	15.1	15.2
Previous angina	46.9	47.1
Cerebrovascular disease	1.3	1.4
Prior PTCA / CABG	1.9	1.9
Diabetes mellitus	14.0	14.0
Hypertension	51.8	51.6
Hypercholesterolaemia	24.6	25.4
Current Smoker	43.8	44.2

Enrolment Event



	Bivalirudin	Heparin
	<i>n</i> = 8516	<i>n</i> = 8557
Infarct location	(%)	(%)
Anterior	45.3	44.1
Inferior	49.9	50.8
Killip Class		
I	78.0	78.9
II	18.1	17.1
III	2.8	2.5
IV	1.4	1.5

Time to Treatment



	Bivalirudin		Heparin	
	<i>n</i> = 8516		<i>n</i> = 8557	
	<i>Median (LQ, UQ)</i>			
Symptom onset to antithrombin (hrs)	3.3	(2.4, 4.5)	3.3	(2.4, 4.3)
Randomisation to antithrombin (mins)	10.0	(7.0, 17.0)	10.0	(5.0, 15.0)
Randomisation to lytic (mins)	15.0	(10.0, 20.0)	13.0	(10.0, 18.0)
Antithrombin to lytic (mins)	3.0	(1.0, 5.0)	3.0	(1.0, 5.0)
Lytic before antithrombin (%)	1.2		1.1	