

# Unfractionated Heparin vs Bivalirudin in Primary PCI: The HEAT-PPCI Trial

**History:** Unfractionated heparin (UFH) and bivalirudin are both used in patients undergoing primary percutaneous coronary intervention (PCI) following myocardial infarction. The two have not been directly compared in trials that do not also include treatment with glycoprotein IIb/IIIa.

**Question to answer:** How does the efficacy of UFH compared to that of bivalirudin in the treatment of patients with STEMI who are undergoing primary PCI?

Trial Design	<p><b>Randomized, controlled trial with consecutive, unselected enrollment using delayed consent; N=1,829</b></p> <p><b>Randomization:</b> UFH (70 U/kg IV) vs bivalirudin (0.75 mg/kg IV bolus, then 1.75 mg/kg per hour)</p>				
Primary Endpoints	<ol style="list-style-type: none"> <li>1. Incidence of major adverse cardiac events (MACE [all-cause mortality, cerebrovascular accident, re-infarction, or additional unplanned target lesion revascularization]) within 28 days</li> <li>2. Type 3-5 bleeding based on Bleeding Academic Research Consortium (BARC) definition</li> </ol>				
Trial Results Bivalirudin vs UFH	<table border="1"> <thead> <tr> <th>MACE</th> <th>Major bleeds</th> </tr> </thead> <tbody> <tr> <td>8.7% vs 5.7%</td> <td>3.5% vs 3.1%</td> </tr> </tbody> </table>	MACE	Major bleeds	8.7% vs 5.7%	3.5% vs 3.1%
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**Take Away:** UFH was associated with a significantly lower rate of MACE compared to bivalirudin. There was not a significant difference in major bleeding between the two treatment arms.