Variation in the definitions of bleeding in clinical trials of patients with acute coronary syndromes and undergoing percutaneous coronary interventions and its impact on the apparent safety of antithrombotic drugs.

BACKGROUND: This review compares and contrasts the various criteria used to characterize bleeding (particularly major bleeding) during recent studies of antithrombotic therapies in acute coronary syndromes (ACSs) and/or percutaneous coronary intervention (PCI). METHODS: This review includes an analysis of recent large randomized clinical trials (published between January 2000 and September 2006; n> 3000 patients) evaluating antithrombotic drugs in patients with ACS or patients undergoing PCI who were identified using Medline searches. RESULTS: Bleeding has been shown to correlate with patient mortality and major cardiovascular events. Different definitions of bleeding, other than Thrombolysis In Myocardial Infarction or Global Utilization of Streptokinase and t-PA for Occluded coronary arteries bleeding criteria, were used in 9 of the 13 randomized trials that were identified and enrolled over 178,000 patients in total. These definitions overlapped to a degree but differed substantially. Bleeding rates according to several bleeding criteria within one trial illustrate that different bleeding definitions can lead to markedly different conclusions about the safety of an antithrombotic regimen. The shift toward identifying therapies that specifically attempt to reduce bleeding while maintaining efficacy at reducing ischemic complications increases the
need of standardized bleeding definitions. CONCLUSIONS: A task force should be initiated to formulate an internationally accepted, meaningful, and standardized approach for reporting bleeding events. A fixed definition may not work for all disease states throughout ACS and PCI. Rather, a predefined scale of bleeding can be proposed, which moves from a more liberal definition of bleeding for elective PCI to a more conservative definition in other settings such as rescue angioplasty.