Acute coronary syndromes observed from an international perspective


I love to read studies that compare disease presentation, management, and outcome from an international perspective. Perhaps this interest is the result of factors present in my own life, i.e. frequent contact with family and close friends who live outside the United States. For nearly 40 years, I have maintained close contact with colleagues and members of my spouse’s family in Denmark. Of course, a common topic of conversation with these individuals is the difference in concepts, expectations and delivery of healthcare between the United States and Denmark. Consequently, my interest is piqued whenever I read a study that reports comparative international data concerning disease presentation and management. Two such studies are reported in this issue: Management of acute coronary syndromes — variations in practice and outcome: findings from the Global Registry of Acute Coronary Events (GRACE) and, a prospective survey of the characteristics, treatments and outcomes of patients with acute coronary syndromes in Europe and the Mediterranean Basin: The Euro Heart Survey of Acute Coronary Syndromes (Euro Heart Survey ACS)[1,2].

The GRACE Registry is a multinational (14 countries) registry involving 95 hospitals. The Euro Heart Survey ACS involved 103 hospitals in 25 countries. All of the hospitals in both studies had active cardiology services with busy coronary care units and each hospital entered consecutive patient data from individuals who were admitted with a subsequently confirmed diagnosis of acute coronary syndrome. The data collection process employed by these two registries adhered to previously suggested guidelines for the performance of registry studies as suggested in an earlier editorial (see Table 1).

This issue contains the initial report from the GRACE and Euro Heart Survey ACS registries based on information collected from approximately 11,000 patients with acute coronary syndromes in each study. Approximately 40% of the patients in each registry had unstable angina, one quarter to one third had non-ST elevation myocardial infarction (MI), and one quarter to one third had ST elevation MI. Mortality rates were appropriately low, as were reinfarctions. Although early aspirin use was nearly universal, far fewer patients were discharged on aspirin than would have been expected had European Society of Cardiology or American College of Cardiology/American Heart Association guidelines been followed. Not unexpectedly, the GRACE Registry demonstrated significant differences in the use of interventional therapies between countries. This is not surprising since the GRACE Registry included patients from the United States where interventional procedures and platelet glycoprotein IIb/IIIa blockers are more commonly employed. This latter observation raises an interesting question: were outcomes substantially different for patients treated in the U.S. with ‘higher tech’, more costly therapies, as compared with outcomes from countries applying less expensive therapeutic endeavours?

Previous international comparisons of this type have, at times, resulted in conflicting conclusions. For example, in the In TIME-II trial, North American patients had lower mortality rates than did patients in Eastern Europe and Latin America. However, mortality did not correlate with the increased use of interventional therapy in the U.S.[4]. Other international comparison studies have shown that quality of life outcomes such as angina frequency are indeed improved in countries where more aggressive therapy is performed on patients with acute coronary syndromes[5]. I look forward to seeing where future data analysis from the GRACE Registry will fall with respect to this question.

Interesting information relating to other questions will also emanate from these registries, for example, the degree to which different countries adhere to guidelines written for the care of patients with acute coronary syndromes (ACS) by the European Society of Cardiology and/or the American College of Cardiology/American Heart Association. It seems apparent from the Euro Heart Survey ACS data that significant deviation from guideline recommendations already exists.
Various economic issues can also be explored in the future using data from these registries. For example, one interesting economic analysis could be performed on variations in estimated costs for patients with ACS between countries and between differing levels of hospital complexity, e.g. teaching vs non-teaching institutions. Finally, GRACE and Euro Heart Survey ACS will be able to track patient management and outcomes over time as therapeutic interventions evolve for patients with ACS.

The 21st century promises to be a fascinating era for those of us in cardiology that have been involved for a long time in managing patients with acute ischemic heart disease. The advances in our understanding of the pathophysiology of this condition as well as the remarkable improvement in our ability to care for these patients makes this area of cardiology particularly exciting at the present time. I am personally looking forward to future reports from the GRACE and Euro Heart Survey ACS registries as they monitor the clinical course and outcomes for patients with ACS throughout the world. The longer the registries run, the more interesting will be the trends observed in the collected data.

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**Table 1** Criteria for judging the scientific value of a clinical data registry

(1) Standardized disease definitions should be employed and stated clearly in the methods sections. All participants in the data collection should be completely familiar with these disease definitions.
(2) Sampling techniques should also be standardized and followed with great care.
(3) Randomized selection of hospitals or clinics is strongly encouraged. Community-wide data collection is even better.
(4) All participants should have a clear understanding of the information being sought for each entry on the data sheet. Although gender and age are self-explanatory, misunderstandings can easily arise when the data collection form requests information on 'softer' outcomes such as 'the presence of refractory angina'.
(5) All collected data should be reported. Selection or exclusion of some centres of some data forms increases bias.
(6) All original data sheets or electronic submissions should be centralized. Analysis should be performed by a central data collection and analysis centre.
(7) A professional statistician should monitor the data collection and analysis.
(8) Each data sheet or electronic submission should be carefully examined by the central data centre to ascertain completeness and accuracy. Individual investigators should be promptly queried concerning incomplete or confusing responses.
(9) The registry protocol should be reviewed at each participating centre by an institutional review board for studies involving human subjects. Appropriate consent for participation must be obtained.
(10) The names of all participating investigators should appear in the published report of the registry.
(11) Sponsorship for the trial should be clearly stated in all published reports so that commercial bias can be easily identified.
(12) One principal investigator or a small steering committee should be designated to maintain administrative order, adjudicate disagreements, and encourage timely submission of documents and data analysis.

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**References**


