Strategies of patient care in acute coronary syndromes: rationale for the Global Registry of Acute Coronary Events (GRACE) registry

Much evidence is available from large clinical trials to support the efficacy of a range of therapies for ACS.[1–7] However, identifying the optimal therapeutic strategy in this group of patients presents difficulties. Unlike patients with STEMI, little information is available on how medical and interventional therapies are being integrated into routine practice for patients with NSTEMI.[8–10] Furthermore, data on the prevalence of ACS are urgently needed.

To evaluate current treatment practices for ACS, several important issues need to be taken into consideration. First, clinical trials, by their nature, are selective, thus limiting extrapolation of their findings to the 'real world'. Second, there is a trend at present towards reduced length of hospitalization, and third, there are geographic variations in the availability of resources. There is therefore a need for a large observational registry, such as GRACE, to provide multinational and regional data on clinical practice patterns and patient outcomes for the full spectrum of ACS. This type of data can provide essential information to allow better interpretation and implementation of the results of clinical trials.

GRACE is a large, observational, population-based registry. It has been designed to ensure that a representative sample of patients is enrolled from each country. Ideally, the sociodemographic characteristics of the centers will reflect the country or region as a whole. The study is broad ranging: all patients aged over 18 years are eligible for inclusion, and hospitals are required to enroll all consecutive patients who meet the inclusion criteria. The targets for hospital enrollment vary within each cluster, depending on the number of hospitals and the number of ACS patients seen at each site annually. The GRACE investigators aim to enroll 10,000 patients per annum in order to ensure stable, statistically significantly estimates of treatments and outcomes. The sites are organized into geographic clusters, chosen to represent populations with varying demographic, clinical and treatment characteristics including size, academic versus community hospitals, public versus private status, and type of facilities. The GRACE study is designed so data are collected on the first 20 ACS patients each month in each hospital, of a cluster which is sociodemographically representative of its region or country (Figure). A national coordinator heads the program for each country, and data are collected by the Center for Outcomes Research at the University of Massachusetts, Massachusetts, USA.

The overall purpose of GRACE is to obtain data on outcomes, including long-term outcomes, in the full spectrum of patients hospitalized for ACS. The specific goals are to:

- describe diagnostic and treatment strategies and hospital-associated outcomes for patients with ACS;
- improve the quality of care for these patients;
- develop hypotheses for future clinical research.

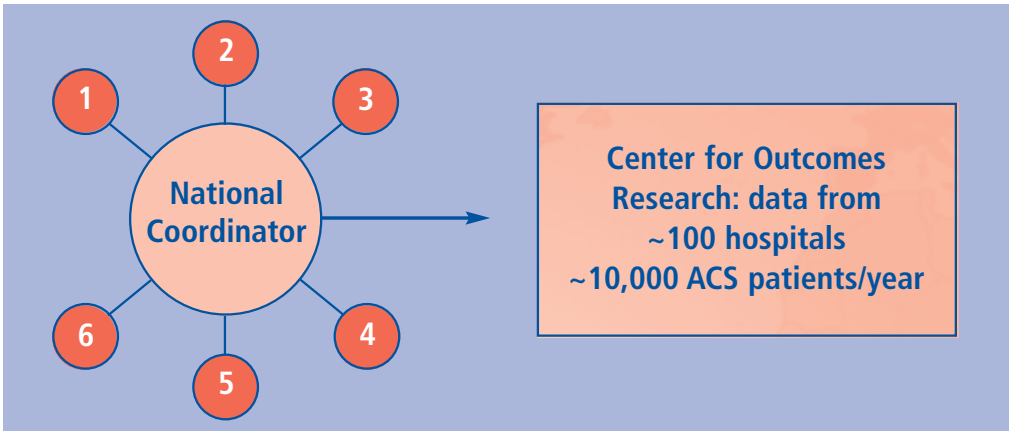

Figure.
Cluster strategy for GRACE study sites

C.B. Granger
Duke Clinical Research Institute, Durham, North Carolina, USA
Am J Cardiol 2000; 86 (suppl 2): M4–9.

Unlike clinical trials, which involve specific therapies and approaches, in GRACE the type of treatment is chosen solely at the discretion of the patient's physician. Thus, the data collected should reflect diagnostic and treatment approaches found in routine clinical practice. A standardized case report form is used, which collects information on the patient's demographic characteristics, medical history, time of presentation, presenting symptoms, clinical and treatment characteristics, and hospital-associated outcomes. Patients are followed up 6 months after discharge from hospital, and a one-page case report form is completed, covering death after discharge from hospital, development of selected clinical events, and use of various treatments following hospital discharge.

Quality assurance data are sent to each of the investigators for them to give feedback to participating sites. Information is disseminated regularly in the form of quarterly reports, which compare individual hospital management practices and outcomes to local, national and multinational practice patterns.

Early data indicate marked variations in the management of patients with ACS both geographically and across different types of hospitals. For example, patients with UA or non-Q-wave MI are more likely to receive GP IIb/IIIa inhibitors and to undergo PCI if admitted to hospitals with access to cardiac catheterization facilities or to hospitals in the USA.[11] By contrast, the use of aspirin is consistent irrespective of hospital type or geographic region.[11] Furthermore, up to 20% of patients with AMI who are eligible for reperfusion fail to receive any form of reperfusion therapy.[12]

These preliminary findings indicate that there is room for improvement in the implementation of both new and established therapies for ACS. GRACE may overcome some of the limitations of previous registries and databases, and may help to improve outcomes for ACS patients by encouraging the use of evidence-based therapies.

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