Original Article

The Foundation and Launch of the Melbourne Interventional Group: A Collaborative Interventional Cardiology Project

A.E. Ajani, MBBS, MD, FRACP[a,i,*], G. Szto, MBBS, FRACP[b], S.J. Duffy, MBBS, PhD, FRACP[c], D. Eccleston, MBBS, FRACP, MMed Sci[a,h,i], D.J. Clark, MBBS, FRACP[d], J. Lefkovits, MBBS, FRACP[a], D.P. Chew, MBBS, MPH, FRACP[e], R. Warren, MBBS, PhD, FRACP[a], A. Black, MBBS, FRACP[f], G. New, MBBS, PhD, FRACP[g], A. Walton, MBBS, FRACP[h], R. Lew, MBBS, PhD, FRACP[b], J. Shaw, MBBS, PhD, FRACP[c], M. Horrigan, MBBS, FRACP[d], M. Sebastian, MBBS, FRACP[f], B.P. Yan, MBBS[a], A. Brennan, RN[i], A. Meehan[i], C. Reid, PhD[i] and H. Krum, MBBS, PhD[i],

On behalf of the MIG (Melbourne Interventional Group) investigators

[a] *Department of Cardiology, Royal Melbourne Hospital, Melbourne, Australia*
[b] *Department of Cardiology, Frankston Hospital, Melbourne, Australia*
[c] *Department of Cardiology, Alfred Hospital, Melbourne, Australia*
[d] *Department of Cardiology, Austin Hospital, Melbourne, Australia*
[e] *Department of Cardiology, Melbourne and Flinders Hospital, Adelaide, Australia*
[f] *Department of Cardiology, Geelong Hospital, Melbourne, Australia*
[g] *Department of Cardiology, Box Hill Hospital, Melbourne, Australia*
[h] *Department of Cardiology, Western Hospital, Footscray, Melbourne, Australia*
[i] *NHMRC Centre of Clinical Research Excellence in Therapeutics, Department of Epidemiology & Preventive Medicine, Monash University, Melbourne, Australia*

The Melbourne Interventional Group (MIG) is a voluntary collaborative venture of interventional cardiologists practicing at 12 major public and private hospitals in Victoria, designed to record data pertaining to percutaneous coronary interventions (PCI) and perform long-term follow-up. The potential advantages of collaboration involve large-scale analysis of current interventional strategies (e.g. drug-eluting stents, evaluation of new technologies and cost-effective analysis), provide a basis for multi-centred clinical trials and allow comparison of clinical outcomes with cardiac surgery. The established registry documents demographic, clinical and procedural characteristics of consecutive patients undergoing PCI and permits analysis of those characteristics at 30 days and 12 months. The registry is co-ordinated by the Centre of Clinical Research Excellence (CCRE), a research body within the Department of Epidemiology and Preventive Medicine (Monash University, Melbourne). The eventual goal of MIG is to provide a contemporary appraisal of Australian interventional cardiology practice, with opportunities to improve in-hospital and long-term outcomes of patients with coronary artery disease.

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Introduction

The ability to record clinical data pertaining to interventional coronary angioplasty procedures is the foundation for evaluating future outcomes. In Australia, the majority of institutions collect information for local use only, with varied data elements collected and variable definitions used. At present, no uniform data collection or clinical follow-up exists, indicating a need for a large-scale collaborative group. Multicentre data collection has proven to be a useful tool in examining short and long-term success, with an ability to identify variables associated with higher

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[*] Corresponding author. Department of Cardiology, Royal Melbourne Hospital, Grattan St., Parkville, Melbourne 3050, Australia. Tel.: +61 3 93427133; fax: +61 3 93472808.
E-mail address: andrew.ajani@mh.org.au (A.E. Ajani).

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risks. These variables can ultimately be used to develop predictive risk-adjusted multivariate models.[1–4] Cardiology registries also address the gap between the highly selected type of patient enrolled in randomised clinical trials and real-world practice.[5] Retrospective analyses also bring in to play problems of missed data and recall bias; hence, prospective data collection via a central standardised registry is essential.

The Melbourne Interventional Group is a collaborative venture to record current interventional coronary procedures and perform longer term follow-up. This model is similar to the established Cardiac Surgical database (Australasian Society of Cardiac and Thoracic Surgeons).[6,7] The potential advantages of collaboration involve large-scale analysis of current interventional strategies (e.g. drug-eluting stents, evaluation of new technologies and cost-effective analysis), provide a basis for multi-centred clinical trials and allow comparison of clinical outcomes with our surgical colleagues.

Aims of Melbourne Interventional Group

The goals of MIG are twofold: (1) To establish a collaborative coronary angioplasty registry with 30-day and 12-month clinical follow-up and (2) facilitation of multi-centred randomised clinical trials targeted at interventional cardiology. The development and implementation of the registry appears critical as it provides a basis for performing clinical trials. The eventual goal of MIG is to provide a contemporary appraisal of Australian interventional cardiology practice, with opportunities to improve in-hospital and long-term outcomes of patients with coronary artery disease. Ultimately, it is hoped that if this model is successful, it may become the platform to launch a national interventional cardiovascular registry.

The collaborative group of interventionists is envisaged to act as a 'sounding board' for individual research ideas and projects. All participants have access to and utilisation of the MIG database. It is anticipated that opportunities will arise for education and training (e.g. by attracting interventional cardiology trainees) with plans for a regular annual meeting around the Cardiac Society of Australia and New Zealand annual meeting, or ultimately stand-alone meetings. Interaction with other collaborative groups and educational bodies, e.g. the Cardiac Society of Australia and New Zealand appears paramount. Future involvement in internationally based clinical trials will be a central goal of MIG.

Methodologic Approaches

Establishing a Dataset

MIG case report forms are designed to document detailed demographic, clinical and procedural characteristics and current interventional practice patterns for patients undergoing PCI in Victoria (Supplementary data, Appendix B). Additionally, we aim to document medical therapy in the peri-procedural period. These factors are analysed with reference to in-hospital and 12-month clinical outcomes.

The four-page standardised data abstraction form was developed by a database working group within MIG. The members of this group have had considerable experience in the implementation and analysis of cardiology databases. Consensus was achieved for the final fields for the MIG registry after a number of interventional workshops.

Reference was made to a number of current interventional databases including the American College of Cardiology-National Cardiovascular Data Registry (ACC-NCDR), and established interventional databases at Cleveland Clinic and Washington Hospital Centre (USA).[1] A spreadsheet of the potential data fields from all referenced databases was developed and these were then compared and refined. We anticipated somewhere between 100 and 120 data fields would be sufficient to provide a comprehensive yet manageable dataset. It was important to ensure this dataset was not too large, yet detailed enough to address important clinical questions. It was not designed to cover all research needs as this would potentially lead to a cumbersome dataset that would likely remain incomplete. Each patient-related variable and clinical diagnosis required a standardised definition for uniform application across different hospitals. The dataset (current MIG database) was finalised for field use after field testing at two interventional centres (Royal Melbourne and Austin Hospitals).

The specific data, which we felt were important to record, included indication for the interventional procedure, peri-procedural anticoagulation strategies and planned duration of clopidogrel use post-procedure (Supplementary data, Appendix B). Lesion characteristics are captured in significant detail, as is the interventional treatment including stent type, size and length. At 30-day and 12-month follow-up, standard events are documented (e.g. death, myocardial infarction, target lesion and vessel revascularisation). Additionally, we targeted medication therapy and the development of heart failure.

Data Collection

Consecutive patients undergoing PCI by participating interventionalists are enrolled in the registry. The data abstraction form is completed at each site by interventional cardiology fellows or research nurses. Case-report forms are then transmitted via fax to the central registry for entry of de-identified data into a computerised database (Department of Epidemiology and Preventive Medicine, Monash University) where they are checked for possible errors or omissions. The registry is co-ordinated by the Centre of Clinical Research Excellence (CCRE), a research body within the Department of Epidemiology and Preventive Medicine (Monash University, Commercial Road, Melbourne). Data queries are referred to the originating centre before being processed into the databank. A contact phone number is provided for the central site to optimise communication with participating centres, and allows data queries to be addressed. Individual hospital or composite MIG updates can be readily obtained. The data are queried and a regular audit program is planned to ensure data are of high quality.