LETTER

Total ambulatory management of patients undergoing coronary angiography and intervention: a pilot study
Theo Gudex, Jonathon White, Steph Madenholt-Titley, Michael McAleer, Sue Savage, Peter Ruygrok

The use of transradial access (TRA) for coronary angiography and percutaneous coronary intervention (PCI) has pervaded cardiac catheterisation centres internationally with the benefits of reduction in access site bleeding, rapid post-procedural ambulation, shorter hospital stay and improved patient satisfaction.

Recent studies have suggested that excellent outcomes are achievable in patients undergoing day case angiography and PCI employing a total ambulatory approach. This approach, using medically approved reclining chairs rather than beds, with a more relaxed, ‘de-hospitalised’ environment and allowing patients to ‘walk-in’ and ‘walk-out’, aims to reduce anxiety and need for intravenous sedation.

We aimed to assess the feasibility of implementing a ‘radial lounge’ for day case coronary angiography/PCI at Auckland City Hospital by screening consecutive outpatients undergoing elective day-stay angiography. The study protocol was approved by the institutional ethics committee and written informed consent was obtained.

Participating patients were admitted to the angiography day ward on the morning of their procedure and underwent usual assessments and insertion of upper limb intravenous access, while in medically-approved reclining chairs. They remained in their own clothing, drank clear fluids up until one hour before and ate until 4 hours prior to the procedure.

Patients walked into the catheterisation laboratory where intravenous sedation was administered at the discretion of the operator. At the conclusion of the procedure, under nursing supervision, patients walked from the catheterisation laboratory to the ‘radial lounge’ where they recovered in medically-approved reclining chairs. Those administered intravenous sedation returned in a wheelchair. All patients were encouraged to drink at least 1 litre of water. Satisfaction survey forms were posted following discharge.

Over a 2-month period (December 2013–January 2014), 199 patients were screened for inclusion. Fifty (25%) were enrolled and underwent angiography on the total ambulatory care pathway. 36 (72%) were male and 14 (28%) female, with a median age of 65 (range of 41–83 years). New Zealand European and Maori comprised 68% and 18% of the population respectively. Clinical indications for angiography were suspected coronary artery disease in 38/50 (76%), valvular heart disease in 9/50 (18%) and other indications (abnormal echocardiogram, arrhythmia, syncope) in 3 (6%).

Transradial angiography was successfully completed in 47/50 patients (94%) with 3 failing due to: radial arterial spasm, radial loop and guidewire perforation, respectively who underwent transfemoral angiography without complication. Intravenous sedation was administered to 9/50 (18%) patients, due to anxiety, puncture site pain, radial spasm or operator preference (Figure 1). Intravenous fluids were administered to 6/50 (12%).
All patients walked into the catheterisation laboratory prior to the procedure while 40/50 (80%) walked out following, without assistance. Five (10%) patients left in a wheelchair due to the administration of intravenous sedation while 5 required bed transfer (vasovagal reaction, critical coronary anatomy, 3 due to femoral access). Admission to hospital was required in one case for observation of a forearm hematoma while two patients were admitted because of critical coronary disease. All other patients, 45/50 (90%), were discharged on the same day at a median time of 185 minutes (range 130–422 minutes) following return to the ‘radial lounge’. No major complications were observed with 2 minor complications (vasovagal reaction and haematoma).

Ad hoc percutaneous coronary intervention was performed in 10/50 (20%) patients of whom 9 (90%) were discharged on the same day as the procedure after a median time of 237 minutes after return to the radial lounge (range 130–420 minutes). Sedation was administered to 4 of this group (40%) and IV fluids to 3 (30%) (Figure 1).

All 50 patients were posted satisfaction surveys following their discharge. The 30 responders (60%) were satisfied with the ambulatory care pathway and environment. Most were highly satisfied with the
comfort of the reclining chair, information delivery, treatment with respect and dignity and involvement in decisions regarding their care.

Although radial access for angiography and PCI has become increasingly common, radial spasm can limit to procedural success in a minority of cases and is frequently managed pre-emptively with conscious sedation. Although one randomised trial has shown that moderate doses of an opioid/benzodiazepine combination resulted in a reduction in spasm, we felt a selective approach could be considered as reduced sedation may speed ambulation and recovery, in an era when avenues to shorten hospital stay are being explored, yet retaining high levels of safety.

This pilot study suggests that total ambulatory care of selected transradial coronary angiography and interventional patients can be successfully introduced with a decreased sedation, low complication rate and high patient satisfaction. Further studies to evaluate this management strategy and compare it more rigorously with bed-based care appear warranted. Greater degrees of ambulation could also be considered in other areas of hospital based medical care.

Competing interests: Nil.

Theo Gudex
Summer Student, Green Lane Cardiovascular Service
Auckland City Hospital, Auckland, New Zealand

Jonathon White
Cardiology Fellow, Green Lane Cardiovascular Service
Auckland City Hospital, Auckland, New Zealand

Steph Madenholt-Titley
Nurse Specialist, Green Lane Cardiovascular Service
Auckland City Hospital, Auckland, New Zealand

Michael McAleer
Nurse Educator, Green Lane Cardiovascular Service
Auckland City Hospital, Auckland, New Zealand

Sue Savage
Nurse Specialist
Green Lane Cardiovascular Service
Auckland City Hospital, Auckland, New Zealand

Peter Ruygrok
Consultant Cardiologist
Green Lane Cardiovascular Service
Auckland City Hospital, Auckland, New Zealand

Honorary Professor of Medicine
University of Auckland, Auckland, New Zealand
PRuygrok@adhb.govt.nz

References


