

CSANZ Position Statement on Sedation for Cardiovascular Procedures (2014)



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The Cardiac Society of Australia and New Zealand (CSANZ) Position Statement describes evidence-based standards of training, pre-procedural assessment, procedural conduct and post-procedure care with respect to sedation for cardiovascular procedures. It also describes the environment in which sedation for electrophysiological and other cardiac procedures may be performed. This Statement was developed by a Working Group of the Cardiac Society of Australia and New Zealand. It was reviewed by the Continuing Education and Recertification Committee and ratified at the CSANZ Board meeting held on Friday 7 March 2014.

Keywords

Sedation • Catheter ablation • Transoesophageal echocardiography • Coronary intervention
• Anaesthesia

Background

Administration of intravenous sedation (IVS) has become an integral component of procedural cardiology. In Australia, sedation is employed as part of a wide range of cardiac procedures including electrophysiological studies, transoesophageal echocardiography and cardiac catheterisation. In the subspecialty field of clinical cardiac electrophysiology, IVS is widely employed in both diagnostic and ablation procedures for the treatment of cardiac arrhythmias, electrical cardioversion of arrhythmias and also the insertion of implantable electronic devices including pacemakers, defibrillators and loop recorders. The sedation is often administered by nursing staff, under the direct supervision of a procedural cardiologist.

As the relevant procedures have evolved during the last 20 years, so procedural cardiologists have developed the skills and expertise required to administer the necessary sedation. Furthermore, cardiologists have also taken responsibility for teaching sedation skills as an essential component of procedural training for trainees in cardiology and, in conjunction with cardiovascular nurse specialists, of training of registered nurses participating in these procedures.

This Position Statement describes the current standards of training, pre-procedural assessment, procedural conduct and post-procedure care, with reference to the available evidence base which is the foundation for these standards. This Statement also describes the environment in which sedation for electrophysiological and other cardiac procedures may be performed.

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The Cardiac Society of Australia and New Zealand (CSANZ) has previously published a brief statement on IVS for cardiac procedures (CSANZ Position Statement. *Sedation in Association with Cardiological Procedures*, 2011). There is also a separate CSANZ statement regarding the use of IVS for transoesophageal echocardiography (CSANZ Position Statement on *Sedation in Conjunction with Transoesophageal Echocardiography*, 2011). Several general guidelines and position statements dealing with the administration of sedative medications for medical procedures have been published [1–4]. With the exception of the North American Society of Pacing and Electrophysiology (NASPE) guidelines of 1998, these published statements are designed for use in a very wide range of clinical environments and procedures and are not focussed upon cardiovascular procedures. This Statement is the first comprehensive document for Australian cardiovascular practice, developed by experts in the field of cardiac sedation, including interventional cardiologists, electrophysiologists and cardiac nurses.

Only the NASPE consensus document is specifically focussed on cardiac electrophysiological procedures [1]. However, it was produced prior to the publication of much of the current literature dealing with sedation for cardiac procedures. Cardiac procedures are distinct from many other procedures performed under sedation, as the patients frequently have serious cardiac disease and often multi-organ disease. For patients undergoing electrophysiological procedures the patient may have life threatening arrhythmias and inducing these arrhythmias may be a goal of the procedure. Patients may also undergo percutaneous coronary interventions while suffering a myocardial infarction, in order to emergently treat the causative lesion. The environment in which cardiac procedures are performed is highly specialised and such procedures are usually performed with continuous ECG, haemodynamic and pulse oximetry monitoring. Staff are experienced in the treatment of critically ill and unstable patients, and staff are dedicated to monitoring the patient throughout the procedure. Staff members are skilled in treatment of cardiac arrhythmias and cardiopulmonary resuscitation. Whilst there are some common elements with sedation in other environments, such as the similarity between sedation for endoscopy and transoesophageal echocardiography, many aspects of sedation for cardiac procedures are unique.

Methods

This Position Statement was constructed through a process of consultation within the CSANZ. The document has been reviewed by the CSANZ Councils representing staff responsible for administering IVS for cardiac procedures. These are the Interventional Council, the Electrophysiology and Pacing Council, the Interventional Nurses Council, and the Cardiac Imaging Council. The draft Statement was reviewed by the Continuing Education and Recertification Committee of the CSANZ and finally by the Board of the CSANZ.

Where possible, recommendations in this Statement are based on published data. The data was evaluated according to the NHMRC guidelines on evaluation of scientific evidence [5]. There are few randomised trials examining IVS for cardiac procedures so the level of evidence is generally low. However there is a body of published descriptive data addressing the safe practice of procedural sedation and the number of these studies, with a high level of consensus, results in the Grade of many basic recommendations being paradoxically high. Unless specified otherwise, the evidence should be considered Level IV, Grade A.

This Statement is focussed on the requirements related to procedural sedation. There will be additional requirements for environment, equipment personnel and training specific to each procedure type. For example, equipment and skills required to perform pericardiocentesis are necessary where interventional coronary and electrophysiological procedures are performed, but not for transoesophageal echocardiography or electrical cardioversion. Attention was also given to recent studies of cardiac IVS practice by Conway *et al.* [6]. This group performed a comprehensive survey of sedation practice in Australia, concentrating on the nursing perspective.

Pre-procedural Assessment and Patient Selection

Published descriptions of IVS techniques almost universally include a process of pre-procedural assessment and patient selection. Patients not meeting selection criteria either undergo their procedure with the supervision of a specialist anaesthetist or are considered unfit for the procedure.

Therefore a pre-procedural assessment and application of suitability criteria is considered an essential process prior to IVS [7–9]. Pre-procedural assessment should be performed on all patients where the need is not precluded by an urgent requirement for immediate intervention. The pre-procedural assessment should also include elements that may be important in the rare event of requiring airway intervention including paralysis and intubation.

Obstructive sleep apnoea is a relative contraindication and, in some units, may be an absolute contraindication. The use of CPAP to successfully facilitate sedation has been described in these patients.

Recommendations

1. Pre-procedural assessment and application of selection criteria should be performed in all non-emergency cases (Level IV, Grade A).
2. The nature of the procedure should be considered. This consideration should include duration of the procedure, likelihood of pain, the need for immobility and the need for different levels of alertness. These factors will dictate the aims of sedation in each case (Level IV, Grade A).

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