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GUIDELINES ON CONSCIOUS SEDATION FOR DENTAL PROCEDURES

1. INTRODUCTION

Sedation for dental procedures (with or without local anaesthesia) includes the administration by any route or technique of all drugs which result in depression of the central nervous system. The objective of these techniques is to produce a degree of sedation of the patient, **without loss of consciousness**, so that uncomfortable procedures may be facilitated. The drugs and techniques used should provide a margin of safety which is wide enough to render loss of consciousness unlikely. Loss of consciousness constitutes general anaesthesia and carries specific risks. These guidelines are not intended for very light techniques such as nitrous oxide/oxygen mediated sedation (see para 9).

These techniques are not without risk because of the:

1.1 Potential for unintentional loss of consciousness.

1.2 Depression of protective reflexes.

1.3 Depression of respiration.

1.4 Depression of the cardiovascular system.

1.5 Wide variety and combinations of drugs which may be used, with the potential for drug interactions.

1.6 Possibility of excessive amounts of these drugs being used to compensate for inadequate analgesia.

1.7 Individual variations in response to the drugs used, particularly in children, the elderly and those with pre-existing medical disease.

1.8 Wide variety of procedures performed.

1.9 Differing standards of equipment and staffing at the locations where these procedures may be performed.

It is important to recognise the variability of effects which may occur with sedative drugs, however administered, and that over-sedation, airway obstruction or cardiovascular complications may occur at any time. To ensure that standards of patient care are satisfactory, equipment and staffing of the area in which the patient is being managed should satisfy the requirements in the appropriate ANZCA Professional Documents.

2. GENERAL PRINCIPLES

2.1 The patient should be assessed before the procedure and this assessment should include:

2.1.1 A concise medical history, examination (including blood pressure measurement), performance of appropriate investigations and identification of risk factors. The American Society of Anesthesiologists classification system is convenient for this purpose. (See Appendix 1)

2.1.2 Informed consent for sedation as well as the planned procedure.

2.1.3 Instructions for preparation for the procedure (**including the importance of fasting**), the recovery period, and discharge of the patient (including avoidance of driving, other dangerous activities, undertaking responsible business).

2.2 If the patient has any serious medical condition then the appropriate treating general medical practitioner and/or their specialist should be consulted prior to any planned treatment under sedation. If the patient is deemed to be seriously medically compromised then an anaesthetist should be present to administer sedation and to monitor the patient during the procedure.

2.3 The practitioner administering sedation requires sufficient knowledge to be able to:

2.3.1 Understand the actions of the drug or drugs being administered.

2.3.2 Detect and manage appropriately any complications arising from these actions. **In particular medical and dental practitioners administering sedation must be skilled in airway management and cardiovascular resuscitation.**

2.3.3 Anticipate and manage appropriately the modification of sedative drug actions by any concurrent therapeutic regimen or disease process which may be present.

2.4 Techniques intended to produce loss of consciousness must not be used unless an anaesthetist is present.

2.5 A written record of the dosages of drugs and the timing of their administration must be kept as a part of the patient's records. Such entries should be made as near the time of administration of the drugs as possible. This record should also note the regular readings from the monitored variables.

2.6 Techniques which compensate for inadequate local analgesia by means of heavy sedation must not be used unless an anaesthetist is present.

3. STAFFING

3.1 If an appropriately trained medical or dental practitioner is not present to administer sedation and monitor the patient, there must be an assistant present during the procedure, appropriately trained in observation and monitoring of sedated patients, and in resuscitation whose **sole** duty shall be to monitor the level of consciousness and cardio-respiratory function of the patient.

3.2 If at any time spontaneous respiration and/or protective reflexes are lost, or the patient does not respond to verbal commands or stimulation, both the proceduralist and assistant must devote their entire attention to monitoring and treating the patient until recovery, or until such time as another medical or dental practitioner becomes available to take responsibility for the patient's care.

3.3 If general anaesthesia or loss of consciousness is sought for the procedure, then an anaesthetist must be present to care exclusively for the patient.

4. FACILITIES

The procedure must be performed in a location which is adequate in size and staffed and equipped to deal with a cardiopulmonary emergency. This must include:

4.1 An operating table, trolley or chair which can be readily tilted.

4.2 Adequate uncluttered floor space to perform resuscitation.

4.3 Adequate suction and room lighting.

4.4 A supply of oxygen and suitable devices for the administration of oxygen to a spontaneously breathing patient.

4.5 A self inflating bag suitable for artificial ventilation together with a range of equipment for advanced airway management.

4.6 Appropriate drugs for cardiopulmonary resuscitation and a range of intravenous equipment. (See Appendix II)

4.7 A pulse oximeter.

4.8 Ready access to a defibrillator.

5. MONITORING

All patients undergoing intravenous sedation must be monitored continuously with pulse oximetry and this equipment must alarm when certain set limits are exceeded. There must be regular recording of pulse rate, oxygen saturation and blood pressure. According to the clinical status of the patient, other monitors such as ECG or capnometry may be required.

6 OXYGENATION

Degrees of hypoxaemia occur frequently during intravenous sedation without oxygen supplementation. Oxygen administration diminishes hypoxaemia during procedures carried out under sedation and should be routinely available.

Pulse oximetry enables the degree of tissue oxygenation to be monitored and must be used on all patients during sedation.

7. DRUGS USED FOR SEDATION

A variety of drugs and techniques are available for sedation. The most common intravenous agents used are small doses of a benzodiazepine (such as midazolam) for sedation and small doses of opioid (such as fentanyl) for analgesia. Even small doses of such drugs may result in loss of consciousness in some patients.

Intravenous anaesthetic agents must only be used by an appropriately trained medical or dental practitioner, and titrated in doses which do not allow intended loss of consciousness. Continuous monitoring of consciousness by whatever means must be established. These agents must not be administered by the proceduralist without the presence of an appropriately trained assistant whose sole duty is to monitor the level of consciousness of cardio-respiratory function of the patient (see 3.1).

8. TRAINING IN SEDATION FOR DENTAL PROCEDURES

An appropriately trained medical or dental practitioner should be present and be responsible for administration of sedation. The clinician is to be one of the following:

8.1 A dentist who has successfully completed relevant postgraduate training leading to an accredited qualification accepted by the relevant Health Authority. An example is the Diploma in Clinical Dentistry (Sedation and Pain Control) from the University of Sydney, or an equivalent course (as defined by the relevant regulating authority).

8.2 A medical practitioner with formal training at least equivalent to the Diploma in Clinical Dentistry (Sedation and Pain Control) from the University of Sydney, or training in accordance with ANZCA current professional requirements.

8.3 A specialist anaesthetist.

9. SPECIALISED EQUIPMENT FOR NITROUS OXIDE SEDATION

When nitrous oxide is being used to provide sedation, the following equipment requirements must be satisfied:

9.1 There must be a minimum oxygen flow of 2.5 litres/minute with a maximum flow of 10 litres/minute of nitrous oxide, or in machines so calibrated, a minimum of 30% oxygen. There must be the capacity for the administration of 100% oxygen.

9.2 The circuit must include an anti-hypoxic device which cuts off nitrous oxide flow in the event of an oxygen supply failure, and opens the system to allow the patient to breathe room air.

9.3 There must be a non-return valve to prevent re-breathing, and a reservoir bag.

9.4 The patient breathing circuit must provide low resistance to normal gas flows, and be of lightweight construction.

9.5 Installation and maintenance of any piped gas system must be according to appropriate standards.

9.6 Servicing of equipment and piped gases must occur on a regular basis and at least annually.

9.7 An appropriate method for scavenging of expired gases must be in use.

9.8 There must be a low gas flow alarm.

9.9 Risks of chronic exposure to nitrous oxide should be considered.

10. DISCHARGE

The patient should be discharged only after an appropriate period of recovery and observation in the procedure room, or in an adjacent area which is adequately equipped and staffed. Oxygen must be available in any area used for patient recovery.

Discharge of the patient should be authorised by the practitioner who administered the drugs, or another appropriately qualified practitioner. The patient should be discharged into the care of a responsible adult to whom written instructions should be given. Transport should normally be by car.

Adequate staffing and facilities must be available in the Recovery Area for managing patients who have become unconscious or who have suffered some medical mishap. Should the need arise the patient must be transferred to appropriate medical care.

A number of ANZCA Professional Documents should be noted where appropriate, particularly the following:

PS1 *Recommendations on Essential Training for Rural General Practitioners in Australia Proposing to Administer Anaesthesia*
PS2 *Recommendations on Privileges in Anaesthesia*
PS4 *Recommendations for the Post-Anaesthesia Recovery Room*
PS6 *Recommendations on Minimum Requirements for the Anaesthesia Record*
PS7 *Recommendations on The Pre-Anaesthesia Consultation*
PS15 *Recommendations for the Perioperative Care of Patients Selected for Day Care Surgery*
PS16 *Guidelines on the Standards of Practice of a Specialist Anaesthetist*
PS18 *Recommendations on Monitoring During Anaesthesia*
T2 *Recommendations on Minimum Facilities for Safe Anaesthesia Practice Outside Operating Suites*
TE3 *Policy on Supervision of Clinical Experience for Trainees in Anaesthesia*

APPENDIX I

The American Society of Anesthesiologists' physical status classification system:

Class I: A normal, healthy patient.

Class II: A patient with mild systemic disease.

Class III: A patient with severe systemic disease.

Class IV: A patient with severe systemic disease that is a constant threat to life.

Class V: A moribund patient who is not expected to survive without the operation.

Excerpted from American Society of Anesthesiologists Manual for Anesthesia Department Organization and Management *2001. A copy of the full text can be obtained from ASA, 520 N Northwest Highway, Park Ridge, Illinois 60068-2573*

APPENDIX II

Emergency drugs should include at least the following:

adrenaline
atropine
dextrose 50%
lignocaine
naloxone
flumazenil
portable emergency oxygen supply

ANZCA PROFESSIONAL DOCUMENTS

ANZCA Professional Documents are progressively being coded as follows:

TE Training and Educational
EX Examinations
PS Professional Standards
T Technical

***POLICY** – defined as 'a course of action adopted and pursued by the College'. These are matters coming within the authority and control of the College.*

***RECOMMENDATIONS** – defined as 'advisable courses of action'.*

***GUIDELINES** – defined as 'a document offering advice'. These may be clinical (in which case they will eventually be evidence-based), or non-clinical.*

***STATEMENTS** – defined as 'a communication setting out information'.*

This document is intended to apply wherever anaesthesia is administered

This document has been prepared having regard to general circumstances, and it is the responsibility of the practitioner to have express regard to the particular circumstances of each case, and the application of this document in each case.

Professional documents are reviewed from time to time, and it is the responsibility of the practitioner to ensure that the practitioner has obtained the current version. Professional documents have been prepared having regard to the information available at the time of their preparation, and the practitioner should therefore have regard to any information, research or material which may have been published or become available subsequently.

Whilst the Colleges endeavour to ensure that professional documents are as current as possible at the time of their preparation, they take no responsibility for matters arising from changed circumstances or information or material which may have become available subsequently.

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