CIG Washington DC

Sedation and non-anaesthesiologists

We are in the midst of a dynamic time for sedation practice as this is probably the fastest growing area in anaesthesia care. There are so many specialities interested and involved in this option as an alternative to general anaesthesia that we have to look closely at safety issues and areas of collaboration. Procedural sedation outside the operating room involves a multitude of providers, and non-anaesthesiologists are part of this group. This will be so in future.

I believe it is about time that we put the issue of whether non-anaesthesiologists can administer sedation behind us. Let us rather explore ways of collaboration. In South Africa we started a sedation society, Society of Sedation Practitioners of South Africa (SOSPOSA), a special interest group of the South African Society of Anaesthesiologists (SASA), where both anaesthesiologists and non-anaesthesiologists are members. We hold yearly seminars in sedation training for anaesthesiologists and non-anaesthesiologists.

The choice of which provider delivers this care and the techniques and drugs used, is usually specific to each institution/country and largely dependent on availability of providers. In developing countries we face a huge problem. There are simply not enough anaesthesiologists available to provide a sedation service. We need non-anaesthesiologists to provide a service as there is a shortage of anaesthesiologists. We can either make them our partners or we may lose whatever influence we have.

Some anaesthesiology societies and departments still resist the use of 'general anaesthetic" agents by non-anaesthesiologists. The prime examples are propofol and ketamine. The sedation literature is full of publications which prove that sedation using the so-called restricted agents is safe and effective even in the hands of non-anesthesiologists. A comparison of the number of journal publications between 2000 – 2011 showed that the number of journal publications for paediatric sedation by anaesthesia, ENT, and paediatrics remained fairly constant. The greatest increase in journal publications occurred in the non-anaesthesiologist group namely gastroenterology and emergency medicine.

We believe what is needed is a combined guidance for anaesthesiologists and non-anesthesiologists and their teams. There need not be separate sedation guidelines for anaesthesiologists and non-anaesthesiologists.
The question still remains who can do what (can non-anaesthetists use the same drugs) as far as sedation techniques are concerned. How are we going to define sedation techniques.
How are we going to bring this all together so that everybody is comfortable to collaborate. The obvious answer to this question is that nobody should be involved in providing paediatric/adult sedation, including anaesthesiologists, without training. This should be the starting point for anaesthesiologists to be involved and to support the involvement of non-anaesthesiologists.

Recent guidelines by the Academy of Medical Royal Colleges in the UK (2013) state clearly, 'safety will be optimised only if sedation practitioners use defined methods of sedation for which they have received formal training". This includes anaesthesiologists.

The Royal College of Anaesthetists in England in their guidelines say, "few anaesthetists in the UK have received formal training in the use of sedation techniques". They believe anaesthetists must be trained to provide safe sedation for patients. They add that anaesthetists can then play a significant role in the training of non-anaesthesiologists.

In South Africa the SASA guidelines on procedural sedation and analgesia (2015) state, "relevant qualifications and ongoing training remain the foundation of safe sedation practice". It is recommended that sedation practitioners

- Have a primary, registered medical qualification.
- Have full registration with the HPCSA (Health Professional Council) as appropriate.
- Have formal training in standard and advanced sedation techniques or be able to demonstrate equivalent experience and training and also provide audit records of safe administration of sedation drugs.
- Provide evidence of regular and recent sedation-related CPD activity appropriate to the sedation techniques they will be providing.
- Have a logbook reflecting cases where sedation was done as well as the technique used.
- Comply with SASA recommendations for safe sedation practice.
- Have evidence available of updated qualifications in airway certification e.g. Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS).

We started an University accredited sedation training program in South Africa in the year 2000, offering a Postgraduate Diploma in Sedation and Pain Control and a Masters program for both anaesthesiologists and non-anaesthesiologists. For training we target anaesthesiologists and non-anaesthesiologists with experience in the administration of general anaesthesia.

We train medical practitioners in two sedation techniques.

We believe sedation practitioners should only use the specific sedation techniques for which they have received formal training, to optimize patient safety.

The choice of techniques for sedation include,

1. Simple/standard sedation techniques: they are induced by single agents and not a combination of agents, for example,

- Oral, transmucosal or rectal drugs, e.g. benzodiazepines; or
- Inhalation of nitrous oxide (N_2O) in oxygen, where the concentration of N_2O must not exceed 50% in oxygen; or

- Titrated doses of midazolam, to a maximum dose of 0.1 mg/kg.

We believe that an operator-sedationist must only use simple or standard sedation techniques and must not administer combinations of drugs. We are aware that non-anaesthesiologists who function as operator-sedationists do use combinations of drugs, and even propofol. There is very little that we as anaesthesiologists can do about this but we can offer collaboration in training and CPD activities.

Simple or standard sedation techniques are for us the entry to sedation training.

If the above drugs are used in combination, simple/standard sedation ceases, and the sedation technique is classified as an advanced sedation technique. When a simple sedation technique is insufficient, the depth of sedation must not be advanced, unless the patient is fasted and a dedicated sedation practitioner is employed.

2. Advanced sedation techniques can be defined as

Any **combination** of drugs, administered via any route; or

- Any sedation administered via the intravenous route, e.g. propofol, etomidate, dexmedetomidine, ketamine, ketofol (with the exception of titrated doses of midazolam to a maximum of 0.1 mg/kg),
- Any inhalational sedation (with the exception of N_2O used as the sole agent in a concentration of less than 50% in oxygen); or
- Infusion techniques, e.g. target controlled infusions (TCI).

Both sedation techniques can be done by anaesthesiologists and non-anesthesiologists who practice as dedicated sedation practitioners who had the necessary sedation training.

What is the current situation

Both anaesthesiologists and non-anaesthesiologists are involved in sedation practice in our country for a wide variety of procedures outside the hospital environment e.g. endoscopic procedures that include gastroscopies, colonoscopies, and bronchoscopies. There is also sedation for egg retrievals, dentistry, minor surgical procedures, plastic procedures, and orthopaedic operations. Sedation for interventional radiology is a fast growing field. Laser therapy for lesions in the face in small children is often done under procedural sedation.

The agents used include all those mentioned under sedation techniques. Opiates are also used for analgesia e.g. alfentanil, sufentanil, and fentanyl.
SASA guidelines suggest that remifentanil is only for use in the in-hospital situation.

Current regulations

The SASA guidelines are seen as a guidance to safe sedation practice. The emergency physicians have guidelines on procedural sedation that they follow. There is a working relationship with them as part of our University training program..
These guidelines are for use by all medical practitioners and their teams.

What is in the future

Sedation services will become more popular as an alternative for general anaesthesia for certain procedures outside the operating theatre. In a 500 case study done by us in collaboration with Sedation Solutions on patient satisfaction after sedation, 94% of patients indicate that they would prefer sedation to general anaesthesia.

Accreditation of sedation services and practice inspections are suggested in the SASA guidelines.
All practitioners involved in sedation practice must keep a logbook of cases performed under sedation, and are required to document and report adverse incidents and accidents. All sedation practitioners are required to be registered as medical practitioners by the HPCSA and are required to comply with current safety regulations of the HPCSA.

It is recommended that:

- All facilities undergo regular inspections to comply with quality assurance policies and procedures.
- Records be kept of staff training with regard to sedation for persons involved in administering sedation, as well as evidence of airway certification, i.e. Basic Life Support.
- Evidence be available as to the training of a sedation practitioner, and possession of airway certification i.e. Advanced Life Support.

The drivers

We see the drivers in the future as the

- Private healthcare sector. Sedation is a cost-effective alternative to general anaesthesia with a low side-effect profile
- Public service. We have been approached by government as to the possibility of sedation clinics
- Medical insurance. Sedation is a cheaper option than general anaesthesia as shown by several studies
- The patient. We often forget about patient satisfaction. In studies done by us patients consistently rate sedation as a better option than general anaesthesia for certain procedures outside the operating theatre; the low

side-effect profile, and quick recovery characteristics play a significant role in their choice.

How have we responded

With the sedation training and CPD activities we have empowered healthcare professionals to become sedation providers. They are able to provide safe sedation for certain procedures outside the operating theatre.

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