



Australian Society of Dental Anaesthesiology

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Federal Council

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<http://www.saaduk.org/>
The Society for the Advancement of Anaesthesia in Dentistry

<http://www.asdahq.org/>
The American Society of Dental Anaesthesiologists

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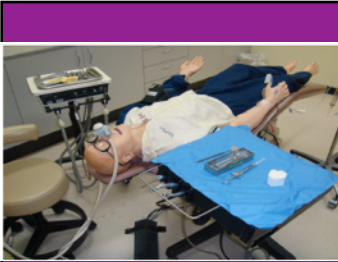
President's Message

As I write this, preparations are well advanced for the 2010 conference at the Noosa Sheraton at the end of November. At the moment, Saturday's program is a little unsettled due to the fluid nature of the situation with accreditation and the new Dental Board of Australia (DBA). Many of us have been justifiably concerned about the lack of certainty and DBA's published guidelines on conscious sedation. One thing that I can say is that the council is working extremely hard for all ASDA members on this as we need to have a resolution of the outstanding issues well before 1st July 2011. It just that that DBA is, understandably, very busy in this changeover period and the number dentists performing conscious sedation is a small proportion of the total oral health care community. The outstanding issues yet to be resolved are:

- Accreditation. Will the published guidelines confirm the Graduate Diploma as the standard for Australia; there remains the issue of accreditation of overseas trained dentist and those that have been grandfathered. Under the COAG agreement (between the State and Federal Governments), it would appear that anyone who is accredited by their State Board should be accredited by the DBA. Where this leaves those who are practicing (safely and for a long time) in other states and who didn't have an accreditation process in their State remains unclear.

- In the DBA guidelines, it stipulates that the third person in the room should be a medical practitioner, dentist, or registered nurse with anaesthetic or ICU qualifications. The council believes that is unworkable as registered nurses with these qualifications are difficult to find given that few practices perform conscious sedation full time. It is the council's belief that the third person should be "a suitably qualified person" and that this person may be a dental assistant with advanced CPR, passed an accredited sedation course (such as the ASDA course) and, have 30 supervised logged cases. In the wider health community, the third person is a suitable qualified person and in many cases this is an EEN or anaesthetic technician. So it is curious that the DBA should require us to have a different standard.

- PS 21 is now withdrawn and ANZCA has released PS9 as a guideline for conscious sedation for all the health professionals and RACDS signed up to it. It is ASDA council's opinion that this is a manifestly inadequate document that will decrease patient safety because;



○It relates only to IV sedation, overseas experience has highlighted the problems of oral sedation and new techniques in nasal delivery. There have been a number of deaths in the USA attributed to these techniques and in the hands of untrained and ill-equipped dentists and staff these techniques could have unfortunate consequences.



○It excludes low dose oral sedatives, not single low dose.

○It excludes the use of specific drugs, which the council believes is dangerous given that new drugs are being introduced and techniques alter with time. The council believes that the phrasing should not mention specific drugs and the more appropriate wording should be along the lines of “ administered drugs should not render the patient unconscious in the doses given”.



The DBA is presently reviewing PS9. In view of this ASDA and the Federal ADA have formulated a draft policy document on the conscious sedation, which is due to be ratified by federal council in November. I have asked that this be posted on the website but I would stress that this is a DRAFT document.

Regards
Greg Mahoney
President of ASDA



Message From The IFDAS President

International Federation of Dental Anesthesiology Societies (IFDAS)

President's Report



A year has passed since the IFDAS meeting was held on the Gold Coast and Council has encountered a few problems accomplishing tasks due to a number of factors. These factors include time differences, language barriers, and local regulations. Council has determined that we should encourage an interest in teaching and education amongst our younger graduates worldwide, and this is proving far more difficult than first thought. Young graduates seem concerned with their post-study debts, the cost of raising a family, real estate costs and the poor “image” of sedation presented to them as students.



I met with a few IFDAS members in San Francisco last month at a combined meeting of the World Society of Intravenous Anaesthesia and the Harvard Medical School's “Pediatric Anesthesia Outside of the Operating Room”. There was a lot of concern expressed over the number of differing regulations governing the administration of sedation, not only in each member country, but also within the states/provinces of those countries.

The next IFDAS Congress is to be held in Hawaii in 2012 and this

meeting should prove to be a very interesting and educational forum with much discussion about future directions in teaching and regulations.

Douglas Stewart
President, IFDAS

From the Editor's Desk

As promised the third quarterly newsletter is here. Our continued goal is to try to keep members up to date on topics relevant to the practice of sedation in Australia and to provide some continuing education and review topics to the members.

To this end we continue to ask anyone wishing to contribute to forward topics/questions or interesting case reports to jherbert@exclusivedental.com.au, and jefffield@hotmail.com. We as a group have a wealth of information and by sharing this information we can all benefit from each other's experience.

Latest Federal Council Meeting Highlights

Since our last publication there has not been a Federal Councilors meeting.

Treasurer's Report

ASDA remains in the black, and annual subs have helped as will the forthcoming Noosa Scientific meeting. There are still a few subs outstanding so if you still want to support ASDA send your cheques ASAP. Also I have an internet deposit for (subs?) from DHHS - could you identify yourself to me please??

See you all in Noosa.

Andre Viljoen

[Q & A \(or try this quick quiz.....\)](#) by Dr Jeffrey Field

The topic for consideration for this Newsletter is Obesity

This month we will look at obesity as it relates to anesthesia/sedation.

Questions

- 1) What is obesity?
- 2) How can one objectively measure obesity?
- 3) What are the net effects on the pharmacokinetics of medications in obese patients?
- 4) Is the absorption of medications different in obese patients?
- 5) What effect does obesity have on volume of distribution?
- 6) What effect does obesity have on protein binding?
- 7) What is the effect of obesity on renal and hepatic clearance?
- 8) Are obese patients at greater risk of thromboembolic incidents?

Answers

- 1) What is the definition of obesity?

Derived from the Latin word *obesus*, which means, "fattened by eating", obesity is a condition of excessive body fat. Although the line between normal and excessive fat is arbitrary, some have defined obesity as existing when the amount of fat tissue is increased to such an extent that physical and mental health are affected and life expectancy is reduced.

- 2) How can one objectively measure obesity

The most accurate methods of measuring body fat, particularly the difficult to estimate intra-abdominal adipose tissue, involve the use of computed tomography (CT) scanning or magnetic resonance imaging. Two commonly used estimates, however, can be made by evaluating weight for a given height: the ideal body weight (IBW) and the body mass index (BMI).

How is ideal body weight calculated?

As weight data generated from life insurance studies noted that lower weights for given heights and genders were associated with lower mortality rates, the terms "desirable" or "ideal" began to be utilized. Ideal body weight (IBW) is derived by the formula (3):

$IBW (kg) = height (cm) - X$, with X being 100 for adult males, 105 for adult females.

The more widely utilized measure for clinical and epidemiologic studies, the body mass index (BMI), is calculated by:

$BMI (kg/m^2) = body\ weight (kg) / height^2 (meters)$, and is assessed as follows (4):

Assessment	BMI (kg/m ²)
Normal	<25
Overweight	25-30
Obese	>30
Morbidly Obese	>35
Super-Morbidly Obese	>55

Morbidity and mortality have been noted to rise sharply when the BMI is >30 kg/m² (5).

Although IBW and BMI are practical and robust measurements of obesity, limitations with the measurements (such as individuals who are heavily muscled), have made some clinicians consider such modifiers as the pattern of adipose tissue distribution and age.

3) What are the net effects on the pharmacokinetics of medications in obese patients?

Obesity leads to alterations in the distribution, binding and elimination of many drugs.

The main factors affecting the tissue distribution of drugs are body composition, regional blood flow and the affinity of the drug for plasma proteins and/or tissue components.

In addition to larger absolute fat masses, obese people have larger lean body masses; unfortunately, the distribution of a drug between fat and lean tissues differs among individuals. As such, the net pharmacologic effect in obese individuals is variable, making monitoring of clinical end points (i.e. heart rate, blood pressure, and sedation) and serum concentrations more important than empirical drug dosing schedules based on ideal or total body weight. Therefore when sedating these individuals one must be very careful with dosing leaving enough time between repeat doses to evaluate clinical effects.

This is especially true when using drugs with narrow therapeutic indexes as toxic reactions have been known to occur when obese patients are dosed according to their body weight.

4) Is the absorption of medications different in obese patients?

Although intramuscular and subcutaneous routes of medications are unpredictable in obese individuals, the oral absorption of drugs remains virtually unchanged when compared to non-obese individuals.

The intravenous absorption is unchanged but remember protein binding, distribution etc (see above) are changed.

5) What effect does obesity have on volume of distribution?

Volume of distribution is an expression of the characteristics of a drug in the body calculated by dividing the dose of a drug by the resulting plasma concentration prior to elimination. A drug that is lipid soluble will concentrate in the tissues, resulting in a low plasma concentration, and thus a high volume of distribution. Due to this low effective plasma concentration, the dose of drugs like thiopental (highly lipophilic) often needs to be increased. Factors that can affect the volume of distribution of drugs in obese individuals include:

- Increased overall lipid tissue
- Increased lean body mass
- Increased blood volume and cardiac output
- Reduced total body water
- Alterations in plasma protein binding
- Overall lipophilicity of drug

6) What effect does obesity have on protein binding?

Various factors can have opposite effects on the protein binding of medications in the obese individual. The increased concentrations of triglycerides, lipoproteins, cholesterol, and free fatty acids work to inhibit protein binding of some drugs, thus increasing their free plasma concentrations (6). By contrast, the increased concentration of alpha-1-acid glycoprotein in obese individuals serves to increase protein binding of certain drugs (especially local anesthetics), thereby reducing the free plasma, active fraction.

7) What is the effect of obesity on renal and hepatic clearance?

Overall hepatic clearance is usually normal or increased in obesity. Phase I reactions (oxidation, reduction and hydrolysis) are usually normal or increased, and phase II reactions (metabolism) are almost consistently increased. Renal clearance usually increases with obesity due to an increase in renal blood flow and glomerular filtration rate.

8) Are obese patients at greater risk of thromboembolic incidents?

The only group of patients thus far to show an increase in thromboembolic events during surgery are patients undergoing non malignant abdominal surgery.

However there are a number of issues that put obese patients at risk for thromboembolism for any surgical intervention and they are as follows:

- Venous stasis
- Polycythemia
- Increased pressure in deep venous channels of the lower limb, secondary to increased abdominal pressure
- Decreased fibrinolytic activity, with increased fibrinogen concentrations
- Cardiac failure