What is EuroSIVA?

The European Society of Intravenous Anaesthesia

There has been a long tradition of intravenous anaesthesia being developed and used in Europe. In 1992 during the World Congress in The Hague a European task force for TIVA was initiated, with national groups running workshops and other educational programs. From there onwards, translating new knowledge on intravenous drugs into sound clinical concepts was key to many European research groups. This eventually led to the introduction of Target Controlled Infusion (TCI) in 1996. In 1997, EuroSIVA was founded in Lausanne (CH).

A European idea

The European Society of Anaesthesiology (ESA) has recently emerged as the pre-eminent scientific Society for Anaesthesiologists in Europe and there was a desire to develop an associated European Society for Intravenous Anaesthesia with the responsibility to co-ordinate, facilitate and to provide high quality presentations and cutting edge information related to TIVA. EuroSIVA is a foundation and registered in The Netherlands. The foundation aims to develop and promote the highest quality of education for those involved in drugs administered intravenously and to develop programs for introducing these new techniques into the standard curriculum and examination system in the individual countries. Within Europe, many of these aims have been achieved and regular training courses have now been established. Over the past decade most countries within Europe have developed a major interest in intravenous anaesthesia. This has been triggered in many cases by the increased availability of improved drugs such as propofol and remifentanil. In addition, the introduction of target controlled infusion systems has led to growing awareness of the value of these new techniques for routine anaesthesia.

Challenges ahead

Recent years have brought an even wider spread of intravenous anaesthesia with the advent of more economical techniques, the availability of open TCI and advances in monitoring of drug effect by EEG-derived devices. Finally, new applications of refined intravenous techniques on procedural and ICU sedation as well as patient-controlled analgesia became increasingly important, as well as applications in Intensive Care sedation. The improvement in intravenous anaesthesia has led to an increasing demand in education and standardized training for doctors and partners from industry alike, mainly for the following reasons: Introduction of new drugs with often confusing dosing and prescribing information and the evolution of computer-controlled drug delivery, like effect-site TCI and the validation of new PkPd models.

EuroSIVA is a platform that attracts expert researchers, clinicians and developers in equal shares. We are working hard to maintain this success.

Greetings from the Chairman

News from the board of EuroSIVA. It has been reshuffled with a new chairman after Professor Kenny has retired from chairmanship. But he will remain active in international EuroSIVA business.

Tivatrainer 8.0

The latest version of Tivatrainer (v 8.0) is now available for download from our website.

Latest publications in intravenous pharmacology

Keep up to date and read about the latest developments and research findings in intravenous pharmacology and technology. A brief review on this years publications.

New slides on TCI

Visit our website to explore a new set of teaching tools on TIVA and TCI.

Commitment to teach

There is a continuous improvement in the well acknowledged and very popular teaching modules, EuroSIVA has developed over the last decade in its postgraduate course. Read more on Page 4

12th Annual Meeting

will be held in Milan

The next Annual Scientific Meeting will be held in Milan, Italy on 5-6 June 2009. See website for details.

Latest publications in intravenous pharmacology

Many developments in anaesthesia over the last 15 years have improved patient safety and contributed to better outcome. One of them certainly is intravenous anaesthesia.
Greetings from the Chairman

Welcome to the European Society of Intravenous Anaesthesia!

For those who don’t know us, the aim of EuroSIVA is to bring all those with a major interest in the development, research and education of intravenous anaesthesia under one European organisation. We welcome you to take part in many activities, such as scientific and educational meetings, interactive discussions on our website and exchange of research and academic debate in intravenous pharmacology.

During the past decade, one of the most distinguished and enthusiastic clinicians and researchers in intravenous anaesthesia, Professor Gavin NC Kenny, was on the helm of EuroSIVA. Among other things, he committed his career into the development of Target Controlled Infusion and many aspects evolving from this ground breaking idea, like patient-controlled sedation and analgesia. Maybe even more important was his gift to teach and to encourage many doctors to take up intravenous anaesthesia and to make it a clinical success story in Europe and in many parts of the world.

After retiring from active work, he is now taking up the role as International Ambassador for EuroSIVA. I am pleased and honored that I was recently voted to succeed him as Chairman by the Board and I am equally aware that it will prove quite a challenge to follow his example.

Every period has its own interesting facets. The world of intravenous anaesthesia is emerging further and going fast with developments in pump technology, new drugs and formulations and our knowledge of drug effect and monitoring. The open TCI initiative has been brought into life to tackle challenges with pharmacokinetic models and we already witnessed the 1st World Congress on TIVA and TCI in Venice in 2007. I hope you enjoy this newsletter, as I am committed to improve communication and collaboration between all of us.

With best wishes,

Stefan Schraag

Educational material - New slides on TCI

A core element of any successful teaching program are comprehensive and state-of-the-art educational resources.

In the past 10 years members of EuroSIVA have produced and collated a wide range of teaching material and PowerPoint slides about various aspects of intravenous anaesthesia. The content has been continuously updated on recent developments and research.

We have the desire to make these presentations available on our website in not too distant future to be used as a personal educational tool and the basis for an e-learning course. An example about assessing depth of anaesthesia has already been made available as a start. So keep up with our website.

Tivatrainer 8.0

The latest version of Tivatrainer is now available for download from our website.

The well known Tivatrainer pharmacokinetic simulation software is now available in an updated version (version 8.0). It offers new features, such as downloading and editing the drug database which can be shared in a central internet-based database. Other helpful improvements comprise an integration with PowerPoint, a keyboard-free input and a more detailed option to work with decrement times. You can also download an excel spreadsheet with LBM calculation that shows the limitation of the James equation implemented in some newer TCI pumps.

For those who are new to the simulation software or want to visualize how Tivatrainer works, there is now a section on e-learn instructions in addition to the manual to be found on the EuroSIVA website. Using flash-animated movies, most of the key operations in Tivatrainer are demonstrated.

You can download a trial version that works 30 days. You are then asked to purchase a key for the full version. Any queries about Tivatrainer can be directed to tivatrainer@eurosiva.org.

What we all want: The Open TCI initiative

Diversity usually is a good thing. But enthusiastic developments may also have a down side when the result is too diverse. This can be witnessed with the recent introduction of new Pk models and their implementation in various infusion pumps.

Open TCI is a newly used acronym for any TCI device that is able to run non-proprietary TCI applications. Over the recent years, various manufacturers of infusion devices, such as Fresenius, Braun and Cardinal, have implemented TCI algorithms for some intravenous anaesthetics, also allowing generic drugs to be used. This was heralded rightly as a major progress in intravenous anaesthesia. There is now TCI prescribing information for propofol, remifentanil and sufentanil. However, this applies only for plasma TCI and not for effect-site TCI. Unlike the original Diprifusor®, various implementations of these algorithms, have now made TCI a fairly heterogenous application with significant clinical implications.

Realizing this, there has been a general desire among clinical users and pump manufacturers to achieve a unified approach for future TCI developments. The Open TCI Initiative has recently been initiated to create an open database of raw data to improve the understanding of TCI and potentially create new unified PK models, as well as to create an open source code based for TCI technology. Support comes from many distinguished individuals and societies and industry alike. Access is unrestricted and the data is open to anyone who has an interest in TCI. Contributions to the project are welcomed.

Visit the OpenTCI website on http://opentci.org/docu.php

EuroSIVA website improvements

Over the next few months EuroSIVA is planning to overhauls its website to offer more content and easily accessible information around TIVA.

The key element will be information!

Apart from the well known section about our meetings, there will be more to find on various aspects of education. We also keep an archive of previous scientific symposia with abstracts and posters to be looked up.

The most obvious change will be in the look of the website. The improved layout should help you to navigate more easily through the various pages. All the links will be updated and new features will be found.

As always, we would like to hear your feedback.
Latest publications in intravenous pharmacology

There have been many important publications on intravenous anaesthesia in 2008. A small selection of them is presented and explained here.

Previous research has shown that genetic variability of certain domains in the human μ-opioid receptor gene alters the patient’s response to intravenous morphine. Recently, a multinational group of researchers from Geneva, Oxford and Singapore genotyped blood samples from 588 female patients who received intrathecal morphine after cesarian section. It was found that pain scores, incidence of pruritus and the total self-administered morphine was dependent on the expression of the position 118 allele on the receptor gene. Thus, interindividual differences in pain scores and opioid effects may be explained by genetic polymorphism (Sia AT et al. Anesthesiology 2008, 109:520-6).

In the attempt to describe the age and gender related variability of propofol pharmacokinetics in adults, White and co-workers analyzed data from 113 patients receiving propofol anaesthesia by TCI. Applying a nonlinear mixed-effects modeling objective function for each patient, a simple and practical co-variate model was achieved. Both the clearance of propofol and the central compartment in male patients changed little with age, whereas in female these had a higher initial value but decreased progressively with older age. This information can be helpful when anaesthetising elderly patients using TCI systems that use the Marsh pharmacokinetic model (White M et al. Clin Pharmacokinet 2008, 47:319-27).

We all believe and teach that TCI is superior compared to manual controlled TIVA. But is this notion really supported by evidence? Kate Leslie and colleagues have produced a Cochrane review on this question which was updated in 2008. Interestingly, in their conclusion they state that the review, that was based on 20 RCTs and 1759 patients, does not provide sufficient evidence to make a firm recommendation about the use of TCI versus MCI in clinical practice. However, they also point out that the studies were quite heterogenous in data quality (Leslie K et al. Cochrane database of Systematic reviews, Issue 4, 2008).

Strategies to manage propofol-opioid interaction in practice

Most Anaesthetists who use TIVA give their patients more than one anaesthetic, usually some combination of hypnotic and analgesic. Find out what you need to know about drug interaction and synergy.

Pharmacodynamic drug interaction between opioids and hypnotics is generally understood as synergistic or supra-additive, although some studies have found only an additive character of interaction. This has major implication on the principles how we balance our components of anaesthesia. We have always based our anaesthetic on the drug with the fastest recovery, so previously with sufentanil and alfentanil it was based on propofol, a hypnotic-based anaesthetic. However, now with the availability of an even faster opioid compared to propofol, we can switch to an opioid-based anaesthetic and only supplement the hypnotic.

Context-sensitive half times are often quoted to describe the relative decay of action after infusing the drug. We have to remember that a 50% decrease in alfentanil blood concentration may be appropriate to reach the point where the patient can safely be extubated. But with sufentanil this clinical condition may require to let the drug concentration fall by more than 60%. Thus, it is important to report relative decrement times rather than context-sensitive half times, which do not consider pharmacodynamic information.

TCI may be useful to combine and control propofol and opioids in the optimal concentrations and retain fine control over concentrations to help minimise the possibility of adverse effects, while optimising effect site concentrations and facilitating rapid awakening times.

Commitment to teach

From the beginning, EuroSIVA has been committed to promote education and support quality teaching by running a variety of courses, workshops and lecture series related to the practice of intravenous anaesthesia.

A few years ago, EuroSIVA has set up a formal postgraduate course of state-of-the-art lectures and practical hands-on workshops on TIVA during the Annual Winter Meeting in Switzerland. Those delegates interested in obtaining an official EuroSIVA certificate will be asked to sit an MCQ examination based on the course material. Successful candidates will receive a certificate of knowledge and a pack of teaching material on core topics in intravenous anaesthesia.

This Annual Winter Meeting, which is held in Crans-Montana (Switzerland) comprises a series of state-of-the-art lectures and practical hands-on workshops on many aspects of intravenous anaesthesia for a limited number of delegates. This forms a postgraduate course, which leads to a certificate of knowledge and expertise in TIVA. The activities are split into formal lectures in the morning and related practical simulation sessions for in depth practice in the afternoon. This is often assisted with pump demonstration and technical updates.

A fine example of the popularity of the course is a Swiss delegate who first attended in 2001 and has returned to every course ever since.

The setting and the course structure gives the delegates the opportunity of getting involved in informal discussions with experts and experienced colleagues alike. The relaxed atmosphere in the Swiss mountain resort proved to provide stimulating days of learning within a magnificent alpine scenery. This event appeared equally popular for our partners from industry representing drug and medical device companies, both to learn and to discuss and consult on developments around intravenous pharmacology, drug delivery and monitoring.

Meanwhile, based on the popularity and versatility of the course program, EuroSIVA had many requests to export this idea and have since held similar educational meetings in Italy and, most recently, in Eastern Europe.
First Announcement

The 12th EuroSIVA Annual Meeting on Intravenous Anaesthesia will be held in Milan, Italy on the 5th-6th June 2009. Here you can have a first look at the program which reflects cutting edge aspects of our specialty. Join us in Milan to enjoy a stimulating meeting in an environment of lifestyle and fashion.

Session 1: Will new drugs change our anaesthetic practice?
- Will Sugammadex change our way of controlling muscle relaxation?
- Can we reduce opioid side effects with methylnaltrexone?
- Are we expecting better benzodiazepines in the future?
- Is dexmedetomidine a good alternative to propofol?

Session 2: How to improve intravenous anaesthesia in children?
- Principles of pharmacokinetic and pharmacodynamic models in children
- Pharmacology and toxicity of anaesthetic drugs in children explained
- Do anaesthetic depth and awareness monitoring work in children?

Session 3: How do we optimize intensive care sedation?
- Anxiolysis, sleep or analgesia for our ICU patients?
- Does propofol become dangerous? Propofol Infusion-Syndrome.
- Effects of propofol on microcirculation
- Intravenous sedation and lung function in ICU

Session 4: Key note lecture on pharmacology
- Mechanism of anaesthetic

Workshops (incl. Tivatrainer simulation software)
WS 1: Advances in Pk/Pd modelling for the clinical practitioner.
WS 2: How to use TIVATrainer for teaching IV anaesthetic pharmacology.
WS 3: Practical set-up of TCI with propofol/oxytocin

Lunchtime lecture: “The year in intravenous anaesthesia”

You have a say - register today

What should EuroSIVA be in the future? - How should it look like and do what do you want us to do? Are we covering the right things or do you feel we should change anything?

All of these questions and many more have been discussed in the Board for many years and we always tried hard to shape our activities in the best possible way. But nevertheless, we may have missed something or we are not getting those responses which suggest changes. The feedback from our meetings usually is extremely positive, but only reflects one part of our activities.

Therefore we are planning to host a web-based questionnaire. All those who had contacts with EuroSIVA in the past will receive an invitation to take part. Based on the results we will improve our future activities in order to meet the demands and expectations that people have from EuroSIVA.

In particular, we want to find out about the following issues:
- Membership — Should we formally adapt a membership program in our statutes?
- Meetings — What is the best format for scientific and educational meetings?
- E-learning — How would you like us to set up a web-based teaching module for CME?

Please also feel free to give us any additional comments that you think are important to you by e-mailing to the webmaster.

www.eurosiva.org

Board of EuroSIVA

Stefan Schraag — Chairman
Luc Barvais — Treasurer
Frank Engbers — Secretary and Webmaster

Gavin Kenny (Past-Chairman and International Ambassador), Alain Borgeat (Meeting Coordinator), Johan Raeder (Scientific Program Manager), Michel Struys (Research&Development), Nick Sutcliffe (Workshops and Education), Claude Meistelman (ESA link man)

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