UNIVERSITY OF LIVERPOOL

C-VA.1 Small Animal Anaesthesia and Analgesia

Credits: 10 (100 hours)

Provider: Veterinary Postgraduate Unit – Institute of Veterinary Science

RCVS Content Covered

The following outlines the modular content as set out by the RCVS.

At the end of the module, candidates should be able to:

- Provide appropriate care for the unconscious patient, including support / maintenance of normal homeostasis
- Demonstrate a sound knowledge of the physiology, pharmacology and biophysics of relevance to anaesthesia
- Demonstrate knowledge of the anatomy of the thorax, abdomen, head and neck as they relate to anaesthesia
- Appreciate the impact of commonly encountered pathological processes in the various species, on the conduct of anaesthesia, and be able to appropriately modify the anaesthesia in light of these
- Understand the pharmacology and clinical use of drugs used for premedication and sedation
- Understand the pharmacology and clinical use of analgesic drugs (opioids, nonsteroidal anti-inflammatories, local anaesthetic agents)
- Demonstrate familiarity with commonly performed regional nerve blocks
- Understand the pharmacology and clinical use of intravenous anaesthetic drugs, and their use in total intravenous techniques
- Appreciate how a generic anaesthetic machine and vaporizer function, and be able to perform appropriate safety checks
- Understand the pharmacology of the inhalational anaesthetic agents, and how this dictates their clinical use
- Understand the functional characteristics of anaesthetic breathing systems ("circuits")
- Understand the pharmacology and clinical use of neuromuscular blocking drugs
- Appreciate the advantages and disadvantages of intermittent positive pressure ventilation, and how this may be delivered
- Appreciate how the electronic monitoring systems used during anaesthesia function, and be able to interpret the information they provide
- Plan and deliver appropriate fluid therapy (including blood transfusion) for the range of patients encountered in small animal practice
- Provide appropriate anaesthesia for specific clinical situations, e.g paediatric and geriatric anaesthesia, ophthalmological procedures, caesarean section etc
- Appreciate the unique characteristics of small mammals, birds, reptiles and fish which may complicate the anaesthetic process
- Recognise and deal with common anaesthetic emergencies
- Review and constructively criticise current literature on the speciality, to determine its relevance to their current practice
- Utilise their understanding of Evidence Based Medicine and Decision Analysis to develop practical treatment protocols for their patients

- Review the outcomes of at least part of their clinical work, using the process of clinical audit to improve performance
- Recognise when they require support from more experience anaesthetic colleagues for a particular case

Aim of the Module

The aim of the module is to enable the candidate to extend and consolidate clinical knowledge and skills gained at undergraduate level and to develop an in-depth understanding of the application of that knowledge in a practice environment in relation to anaesthesia and analgesia.

Learning Outcomes

By the end of this module successful candidates should be able to:

1. demonstrate a comprehensive understanding of the fundamental physiological and pharmacological tenets that underpin current knowledge and clinical practice of veterinary anaesthesia;
2. demonstrate in depth knowledge of the theoretical basis and practical skills relating to supportive care of the anaesthetised patient including the preoperative and postoperative periods;
3. demonstrate in depth knowledge and practical application of the instrumentation used in the maintenance and monitoring of anaesthetised patients;
4. demonstrate a critical awareness of the theoretical basis underpinning the practice of pain management in animals;
5. review and constructively criticise current literature in the subject area.

Module Structure

The syllabus will be divided into four study units:

Study unit 1 will review the relevant anatomy and physiology with particular emphasis on those body systems predominantly affected by anaesthesia and analgesia.

Study unit 2 will include in depth study of the pharmacology of the commonly used anaesthetic and analgesic drugs including the relevant interactions between these medications.

Study unit 3 will explore the techniques used in small animal anaesthesia along with their clinical application. The focus will be on the provision of co-ordinated anaesthesia and analgesia plans from pre-anaesthetic assessment to post-operative care including specific techniques and concepts such as multi-modal analgesia and local anaesthetic techniques.

Study unit 4 will review the variety of anaesthetic apparatus available and the safe and effective implementation of techniques using this apparatus. There will be an examination of aspects of biophysics relevant to anaesthesia including a review of the techniques of biological measurement.

Assessment Strategy

Portfolio of cases (20 case log book), 3 x reflective case reports (1500 words), 1 x short answer question and/or MCQ test and 1 x journal critique/journal club presentation (pass/fail)

PLEASE NOTE**:** It is your responsibility to ensure that you have access to sufficient appropriate cases where you were the primary decision maker to produce adequate material for the module. This may not be possible with some internship positions. You must also be aware of any limitations of your facilities that may make the accumulation of appropriate cases difficult or impossible.