

C-VC.3 Cardiovascular Therapeutics

Credits: 10 (100 hours)

Provider: Veterinary Postgraduate Unit – Institute of Veterinary Science

RCVS Content Covered

Module Content

On successfully completing this module, candidates would be expected to have knowledge of the following:

- Drug therapy (candidates should understand the basic mechanism of action and clinical utility of the following classes of drugs)
 1. Diuretics
 2. ACE inhibitors and other vasodilators
 3. Positive inotropes
 4. Negative inotropes
 5. Bronchodilators
 6. Anti-dysrhythmic agents typically used in veterinary medicine for treating supraventricular and ventricular arrhythmias in small and large animals.
- Non-pharmacological therapy
 1. nutraceuticals
 2. diet
 3. exercise
 4. other managemental or therapeutic tools (e.g oxygen supplementation).
- Surgical options for treatment / management of cardiovascular defects (congenital and acquired disease)
 1. Candidates should be aware of, but not necessarily have an in depth knowledge of, interventional minimally invasive catheter based procedures
 2. Candidates should be aware of, but not necessarily have an in depth knowledge of, thoracotomy for closed heart vs. open heart surgery options
 3. Candidates should be aware of, but not necessarily have an in depth knowledge of, the role of cardiac pacemakers for the treatment of cardiac rhythm disturbances
 4. Candidates should be aware of how and why to perform pericardiocentesis.
- Effect of fluid therapy, anaesthetics and other systemic agents on the cardiovascular system.
- Cardiopulmonary resuscitation.
- Other cardiovascular therapies, for example:
 1. treatment of bacterial endocarditis
 2. treatment of septic pericarditis
 3. treatment of aortic thromboembolism
 4. treatment of systemic hypertension etc.

Aim of the Module

The aim of this module is to:

1. increase the student's depth of knowledge and understanding of the therapeutic management of cardiorespiratory disorders in veterinary species;
2. develop the student's knowledge and understanding of how to reduce deleterious effects of procedures such as anaesthesia and other interventions on the cardiorespiratory system and to manage any complications that occur.

Learning Outcomes

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

1. evaluate critically the pharmacology and clinical application of the major drug groups and their applicability to the cardiovascular and respiratory body systems;
2. demonstrate an in-depth understanding of the relevance and utility of non-pharmacological therapy;
3. demonstrate an awareness of the surgical options available for management of cardiac and respiratory conditions and an appreciation of when it is appropriate to perform these procedures;
4. demonstrate an in-depth understanding of the effects of fluid therapy, anaesthetics and other systemic agents on the cardiovascular system;
5. demonstrate an in-depth understanding of the principles and application of cardiopulmonary resuscitation;
6. appraise critically the literature relevant to clinical cases in the topics covered and discuss how the literature can be used to inform practice;
7. demonstrate the ability for critical reflection on the clinical work, including identifying potential clinical audit points translating to new protocols or measureable outcomes;
8. demonstrate the ability to recognise the appropriate case for onward referral.

Module Structure

The module will be divided into 5 study units:

Study Unit 1: This unit will cover cardiac medications. The focus will be on the mechanism of action, pharmacology and clinical application of the commonly used medications in the treatment of cardiorespiratory disorders.

Study Unit 2: This unit will cover non-pharmacological therapy. The focus will be on the role of nutraceuticals, diet, exercise and other management tools when treating patients with cardiorespiratory disorders

Study Unit 3: This unit will cover surgical therapy for cardiorespiratory patients. The focus will be on awareness of the procedures and appropriate patient selection rather than the specifics of the procedures themselves.

Study Unit 4: This unit will cover management of the most common cardiorespiratory disorders. The focus will be on integrating medication and non-medical therapies to create a treatment plan and therapeutic goals, then monitoring patient response.

Study Unit 5: This unit will cover the effects of fluid therapy, anaesthetics and other

systemic agents on the cardiovascular system and cardiopulmonary resuscitation. The focus will be on understanding pathophysiological changes and how to identify and manage them..

Assessment Strategy

Portfolio of cases (20 case log book), 3 x reflective case reports (1500 words each), 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.