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Anaesthesia as a process

– a focus for continual improvement in clinical practice



Alfaxan[®] Anaesthetic Injection

Anaesthesia as a process

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The anaesthetic process is one of the most widely varying areas of veterinary practice. This variability is brought about by a number of factors, including the different species and breeds that veterinarians handle, the wide array of disease processes with which animals present, the variety of medications used in the peri-operative period, the different equipment and machinery available for maintenance and monitoring and the huge variation in understanding of what is actually happening during the anaesthetic process.

Because anaesthesia is generally not a therapeutic process in its own right, it is often not held in as high a view as definitive veterinary practices such as surgical or medical interventions. Despite this lower profile, few other procedures intentionally interfere with a patient's homeostatic functions as severely as anaesthesia does, and it is for this reason that anaesthetic-associated mortality is one of the more commonly used measures of how well anaesthesia is being performed. The much publicised CEPSAF study^[1] highlighted that anaesthesia in veterinary practice is an area that should be a focus for continual improvement.

Table 1. Risk of anaesthetic or sedation associated death in dogs and cats

Species	Overall risk of death	Risk of death in healthy patients
Dog	0.17 % (1 in 601)	0.05 % (1 in 1849)
Cat	0.24 % (1 in 419)	0.11 % (1 in 895)

Data from Brodbelt *et al*^[1]

Most clinical staff are experienced enough in anaesthesia to handle the majority of cases, and to even reduce the risks associated with the more challenging cases. However few practices have a systematic approach to continual improvement of their standard of care surrounding anaesthesia. Following is a list of considerations that you may wish to set in place as continuous improvement processes for anaesthesia in your practice.

1. Patients

Patients always come first. Understanding the status of your patients and putting in place a robust set of pre-anaesthetic evaluations that are performed consistently will help identify many situations where patient variation or disease may increase their individual risk. These evaluations on their own are not enough however, there must be guidelines in place that explain how to deal with findings that don't fit the norm. Spending more time looking at the patient, pre- and post-operatively will result in a better understanding of the patient's requirements, especially for supportive medications like analgesics.

2. People

Ongoing improvement in anaesthetic care requires staff to continually develop their skill, knowledge and understanding. This can be achieved in a number of ways.

- Formal CE training – whether in-clinic or at conferences, staff should be encouraged to spend time learning something new about anaesthesia each year.
- Sharing of new knowledge or findings in staff meetings.
- Difficult case discussions – staff should be encouraged to discuss anaesthesia, both prior to the event if an increased risk is identified and after the event if a less than ideal outcome has occurred.
- Developing a mentoring or specialist relationship – most specialist anaesthetists enjoy helping practitioners improve their standard of care, so developing a relationship like this is often very worthwhile.

3. Records

Reviewing anaesthetic records is a powerful tool for improving the standards of anaesthetic care in a practice. Setting time aside each week to assess the quality of the information being recorded on monitoring charts, the trends that occur during anaesthesia and between anaesthetics and the overall acceptability of the outcomes can help practices identify potentially important issues such as:

- errors in staff understanding of the parameters they are monitoring;
- issues with consistency of equipment delivering anaesthetic agents;
- techniques that will improve the quality of anaesthesia for the patient and the surgeon;
- need for servicing and calibration of monitoring devices.

4. Equipment

Having a well defined testing and maintenance regime is more important for anaesthetic equipment than is commonly considered. Equipment delivering fluids and gases are meant to be precision instruments; however in a busy practice it is common for bumps, knocks and handling mishaps to occur. Any such mishap can lead to deficiency in the ability of the equipment to do what it is designed to do and may lead to significant over- or under-delivery of the gaseous agent. Monitoring devices must be properly understood to obtain meaningful information and also to know when to ignore what they are saying and check the patient. Heating devices should be correctly maintained, as the risk of thermal injury is real with many older devices.

5. Reviewing

An annual or biennial review of what you have done – or considered doing differently – in your anaesthetic process is very important. Critically evaluating if that change in drug has made a positive or negative impact on the intra-operative blood pressure or some other parameter, or if the new monitoring chart you are using is capturing all the information that you really want it to capture, is vital to ensure that the steps your practice is taking are moving forwards.

Anaesthetic processes are complicated, variable and challenging. In many cases there is a degree of misunderstanding of what is actually occurring during the anaesthetic process. Only by putting in place a system of improving the standards of anaesthesia in your practice will staff become more aware of this important process, increase their confidence and competence in performing anaesthesia and as a result improve patient outcomes. A positive anaesthetic outcome has to be greater than just surviving, ideally it is returning the patient to normal as soon as possible.

References

1. Brodbelt, D.C., *et al.*, *The risk of death: the confidential enquiry into perioperative small animal fatalities*. *Vet Anaesth Analg*, 2008. 35(5): p. 365-73.





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