



An investigation into the use of a Parasympathetic Tone Activity (PTA) Monitor™ in veterinary anaesthesia & analgesia

Sophie Horton-Smith – MSc Postgraduate Harper Adams Student, RVN
(sehs@btinternet.com)

Kat Hart – Lecturer at Harper Adams University, RVN



Introduction

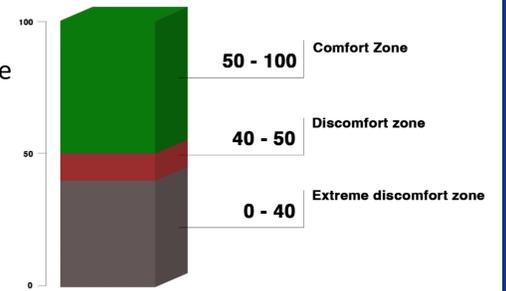
Due to the unconscious nature of general anaesthesia, monitoring nociception can be difficult. Typically, **haemodynamic reactivity** is the most accurate way of identifying **nociception** in anaesthetised veterinary patients (Hernandez-Avalos et al., 2019; Grubb et al., 2020). But this may be misinterpreted and cause detriment to the patient.

The Parasympathetic Tone Activity (PTA) Monitor™ (MDoloris Medical Systems; MDoloris Medical Systems, France) has been developed, looking at **parasympathetic tone** and quantifies this in the anaesthetised patients using heart rate variability and respiratory patterns to identify nociception.

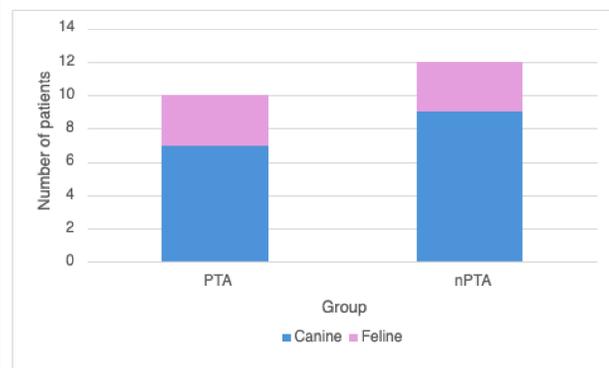
- The aim of the study was to understand the value of the PTA Monitor™ in a clinical veterinary setting and to investigate its potential impact of frequency of rescue analgesia administration.

Methods

- **Prospective, non-randomised controlled study** with retrospective and questionnaire element.
- **36 patients (canine & feline)** undergoing general anaesthesia for elective **spay** surgery.
- PTA values taken at 5-minute intervals
- Frequency of **intra-operative rescue analgesia administration** between group with PTA Monitor™ (PTA n=16) and retrospective group without PTA Monitor™ (nPTA n=20) was **compared**.
- **Questionnaires** were given to five RVNs to comprehend their understanding of machine and the possible value it adds to their monitoring.



Results



During the surgical procedure, 62% (n=10) in group PTA and 60% (n=12) of patients in group nPTA were administered rescue analgesia (RA).

- There is not a significant association between the frequency of RA administration and the use of a PTA Monitor™ (P=0.87).
- When RA drug groups were separated, there was shown to be no significant association between the type of drug used for RA given and the use of a PTA Monitor™ (P=0.96).

Questionnaire results showed 100% participants found the machine easy to use and interpret.

When using the monitor alongside their usual monitoring, 80% (n=4) found the PTA Monitor™ valuable in monitoring nociception and would want to use it in other veterinary surgical procedures.

Discussion/Conclusion

There was no difference in the administration of rescue analgesia whether the PTA Monitor™ was present or not. This could potentially indicate that for these patients, nociception was being identified accurately by the RVNs already.

The clinical significance of the machine was highlighted with its user-friendly set up, easy interpretation and confirmation of anticipated nociception alongside multi-parameter monitoring. However, there were some limitations to the machine such as poor electrode contact and reliability issues in patients with arrhythmias.

The results of both impact on RA use and perceived value of machine may be different in different practices and with varying anaesthetic knowledge across the UK's RVN population. Future research is required to understand the value of this machine further, in clinical practice. Understanding its place in a variety of anaesthetic procedures and the opinions of a greater variety of RVNs is needed.

Acknowledgements

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References

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