

## Abstracts presented at the Association of Veterinary Anaesthetists Spring Meeting, Liverpool, UK, April 2006

*The following studies have all received ethical approval by institutional and/or national review committees*

### Does acepromazine modulate the nociceptive withdrawal reflex characteristics in dogs?

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The use of the nociceptive withdrawal reflex (NWR) has been described as a non-invasive technique to investigate nociception in dogs (Bergadano et al. 2006). To implement NWR in clinical patients, tranquillization facilitates the measurements. We hypothesised that a low-dose of acepromazine (Plumb 2002) would not affect NWR characteristics.

Surface electromyograms evoked by transcutaneous electrical stimulation of the ulnar nerve (ramus dorsalis) were recorded from the deltoid muscle in eight male Beagles. Current intensity was increased to reach NWR threshold ( $I_t$ ); latency and amplitude were analysed. Behavioural response (0–6 scale; no

movement-vocalisation) and sedation (0–8 scale; awake-deep sedation) were scored. Dogs received in a randomized, double-blinded, cross-over fashion 10 mcg kg<sup>-1</sup> acepromazine (ACP-group) or saline IV (PLB-group) at 1 week intervals. Measurements were done before (Baseline) and 20, 60, 100 minutes after drug administration. Repeated measures ANOVA on ranks was used to analyze  $I_t$ , latency, amplitude, behavioral response and sedation scores over time; Wilcoxon-signed-rank test to compare drug's effect ( $p < 0.05$  significant). Results are median (range).

There was no significant difference in  $I_t$ , latency, amplitude, behavioral response scores between groups. Sedation scores at 20, 60, 100 minutes were significantly higher than Baseline in both groups while ACP versus PLB only at 20 minutes ( $p = 0.016$ )\*.

Low-dose acepromazine exerted a minimal tranquillization and facilitated instrumentation/measurements without affecting NWR characteristics or behavioral responses. Acepromazine can be used to reduce anxiety in dogs without altering the validity of this model.

**Table 1**

Group	NWR	Baseline	20	60	100
ACP	$I_t$ (mA)	2.4 (2–7.4)	2.8 (2–6.4)	2.8 (1.6–6.8)	2.8 (1.6–4.8)
	Latency (ms)	22 (13.7–24.5)	22 (13.7–24.5)	23.5 (13.7–25.4)	22 (15.4–23.5)
	Amplitude	24.5 (15.1–38.3)	28.1 (16.4–41.5)	20.1 (13.1–32.7)	16.5 (12.8–35)
	Behavior	2 (1–3)	1 (0–2)	1 (1–2)	1 (0–2)
	Sedation	0 (0–1)	2 (1–6)*	2 (1–4)°	2.5 (0–5)°
PLB	$I_t$ (mA)	2.7 (1.8–7)	2.8 (1.8–7.2)	2.6 (1.8–7)	2.7 (1.8–7)
	Latency (ms)	22 (20.5–30.3)	21.5 (20.5–25.4)	20.5 (13.7–24.5)	21.5 (13.7–25.4)
	Amplitude	22.1 (12.6–31.9)	18.6 (10.7–40.7)	13.5 (10.83.4)	19.5 (11.5–40)
	Behavior	1 (1–2)	1.5 (1–3)	1 (1–2)	1.5 (1–2)
	Sedation	0 (0–0)	1 (0–3)°	2 (0–4)°	0.5 (0–3)°

\*Data presented as mean (SD), °Data presented as median (range)

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The experiments were approved by the committee for animal experimentation of Basel, Switzerland (approval number 2090).

## References

- Bergadano A, Andersen O, Arendt-Nielsen L et al. (2006) Quantitative assessment of nociceptive processes in conscious dogs by use of the nociceptive withdrawal reflex. A methodological study. *Am J Vet Res* 67, 882–889.
- Plumb D. (2002) *Veterinary Drug Handbook*. (4th edn.) PharmaVet Publishing, White Bear Lake, MN, USA.

## Evaluation of the short and long term stability of the nociceptive withdrawal reflex threshold in Beagles

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The nociceptive withdrawal reflex (NWR) has been described as a novel non-invasive model to investigate nociception in dogs (Bergadano et al. 2006). If within-subject changes in NWR threshold ( $I_t$ ) are to be attributed to drugs designed to modulate nociception or to change central excitability, it is important to demonstrate that  $I_t$  remains stable over time (French et al. 2005). To demonstrate the reliability of  $I_t$  in dogs we analyzed its within-session and intersession variability.

Surface electromyograms evoked by transcutaneous electrical stimulation of the ulnar nerve (ramus dorsalis) were recorded from the deltoid muscle of the forelimb in 8 healthy, male Beagles. A train-of-5 pulses was used; current intensity was stepwise increased to reach  $I_t$  (minimum stimulus intensity evoking EMG activity from the deltoid muscle in a 20- to 100-millisecond epoch with an amplitude >10 times the EMG background activity, lasting >10 milliseconds, and accompanied by a flexion of the carpus). The  $I_t$  was determined as the mean of three assessments. The  $I_t$  was re-determined within-session at 20, 60, and 100 minutes (short-term stability) and after 1 week (intersession, long-term stability). Repeated measures ANOVA on ranks was

used to analyze within-session  $I_t$  and Wilcoxon test for intersession  $I_t$  variability ( $p < 0.05$  significant). Results are expressed as median (range).

The  $I_t$  was 2.7 mA (1.8–7), 2.8 (1.8–7.2), 2.6 (1.8–7), 2.7 (1.8–7) at baseline, 20, 60 and 100 minutes, respectively without any statistical differences ( $p = 0.43$ ). After 1 week the  $I_t$  was 2.4 mA (2–7.4) again without any difference compared to the previous measurement ( $p = 0.84$ ).

The present findings provide important evidence which supports the short- and long-term temporal stability of the NWR thresholds. This allows the application of the model in canine studies examining the antinociceptive effects of drugs over time or the individual changes in  $I_t$  as an objective tool to investigate chronic pain (Curatolo et al. 2001).

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The experiments were approved by the committee for animal experimentation of the canton Basel-city, Switzerland (approval number 2090).

## References

- Bergadano A, Andersen O, Arendt-Nielsen L et al. (2006) Quantitative assessment of nociceptive processes in conscious dogs by use of the nociceptive withdrawal reflex. A methodological study. *Am J Vet Res* 67, 882–889.
- Curatolo M, Petersen-Felix S, Arendt-Nielsen L et al. (2001) Central hypersensitivity in chronic pain after whiplash injury. *Clin J Pain* 17, 306–315.
- French DJ, France CR, France JL et al. (2005) The influence of acute anxiety on assessment of nociceptive flexion reflex thresholds in healthy young adults. *Pain* 114, 358–363.

## Is first recorded mean arterial blood pressure (1st MAP) linked to mortality in horses undergoing colic surgery?

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This study investigated the effect of first recorded mean arterial blood pressure (1st MAP) on intra-operative and postoperative mortality in colic cases.

Anaesthesia records were retrospectively examined and the 1st MAP noted for 679 colic cases between March 1998 and August 2003. Intraoperative and

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