

Critical appraisal – Randomised controlled trial questions

Polson et al. 2012

Introduction	
Are the aims clearly stated?	Yes. The aim of the study was not the same as the aim of our BET.
Methods	
Is the study design suitable for the aims?	Yes – testing treatments so RCT appropriate
Which population was studied?	100 healthy cats admitted to 2 RSPCA clinics for OVH
Were the treatments randomly allocated? If yes, how was the randomisation done?	Yes Using random number generator
Were the groups comparable prior to intervention?	No significant difference between groups in relation to body weight, age (ranged from 1 month to 6 years) or resting heart rate or respiratory rate; states that the majority of cats were domestic shorthairs
Was the person who administered the interventions blinded?	Not stated
Is it clear what measurements were carried out in the study?	Yes
Were the correct measurements chosen? Do they reflect (or are they strongly related to) the outcome of interest?	Yes Yes

Were previously established validated methods used to make the measurements? (e.g. Glasgow pain score, International Units etc)	For some of the measurements, specifically the descriptive and visual pain scores, they provide references but unknown if previously validated
What outcomes were measured?	Duration of surgery, duration of recovery, surgical condition as judged by the surgeon, any abnormalities (e.g. pregnancy) noted, clinical features (heart and respiratory rate), level of sedation, pain on a descriptive scale, pain on a visual scale, mechanical nociceptive threshold Midline surgical approach only
Are the outcomes clinically relevant?	Yes
Were the outcomes assessed blind?	States all assessments were made by a blinded observer
Are the statistical methods described?	Yes
Was the statistical significance level stated?	No
Was the sample size justified?	They carried out a power calculation using unpublished data from 30 cats
Was ethical approval obtained?	Yes
Are the methods described in enough detail that you could repeat them?	Yes
Results	
Were the basic data adequately described?	Would have been nice to have more (mostly aggregated data) – data mostly displayed in small graphs which are not easy to read numbers from

<p>Do the numbers add up?</p> <p>Are all subjects accounted for?</p>	<p>Don't give absolute numbers in the results so this cannot be assessed</p> <p>Information not given</p>
<p>Was the statistical significance (p value) stated in the results?</p> <p>Is this consistent with the methods? (It should be stated in the sample size or power calculation)</p>	<p>Yes for some tests, but not all in the text; more values given in the figure and table headings</p> <p>Don't really identify which tests resulted in which results – particularly if using more than one test to look at the same parameters?</p> <p>Not stated so cannot be assessed</p>
<p>Were any side effects of the intervention reported if applicable?</p>	<p>No side effects stated as occurring – state surgery and anaesthesia 'unremarkable' and 'uneventful', respectively. No mention of rescue analgesia being given (say in the discussion none was required)</p>
<p>What were the main findings/key results?</p>	<p>No significant differences seen in duration of surgery, duration of recovery, surgical condition as judged by the surgeon, abnormalities, clinical features, level of sedation, pain on descriptive or visual scale or mechanical nociceptive threshold</p> <p>Surgical time in kittens was significantly less than in adults, pain on visual scale significantly less in kittens than adults at 24hr time point</p> <p>Surgical time in pregnant animals longer</p>
<p>Discussion and conclusion</p>	
<p>What do the main findings/key results mean?</p>	<p>The regimes used are comparable in relation to preventing pain up to 24 hours' time point</p>
<p>Are the negative findings discussed?</p> <p>How are the negative findings interpreted?</p>	<p>Yes</p> <p>State that because the anaesthetic protocol included drugs such as medetomidine and ketamine which have analgesic properties, it is</p>

	likely they achieved the result they did; also that using a multimodal regime with NSAIDs and opioids is likely to have resulted in the no difference finding
Does the discussion reflect the results?	Yes
Interpretation	
What are the clinical implications of this study?	That either opioid is okay to use
Are the subjects in the study similar to those in the BET/your own?	Use different anaesthetic regimes so not quite the same
General	
Who funded this study?	States that the study was not funded by anyone in particular. Some conflicts of interest declared (corresponding author owns company that produces the device that measures nociceptive threshold)