

Comparison of pain response after subcutaneous injection of two maropitant formulations to beagle dogs¹



- The proprietary injectable formulation of maropitant (*Cerenia™*, Zoetis) contains maropitant (10 mg/ml), sulphobutylether- β -cyclodextrin and **metacresol** as preservative. The generic maropitant injectable formulation (*Prevomax®*, Dechra) contains **benzyl alcohol** as a preservative.
- Pain and vocalisation during subcutaneous injection occurs frequently with the proprietary injection, particularly in cats. This response may be reduced by refrigeration of the product prior to injection.
- Benzyl alcohol has been reported to have local anaesthetic properties and it is hypothesised that a maropitant formulation containing benzyl alcohol (Prevomax) would be less painful on injection than a formulation containing metacresol (Cerenia).

This study compares the local pain response following subcutaneous injection of two maropitant formulations, Prevomax and Cerenia.

- 32 beagle dogs aged 8 months - 3 years (15 male and 17 female).
- Each dog received four subcutaneous injections of 1 mg/kg maropitant with at least 3 days between treatments.
- Two different formulations were each tested at two temperatures:
 - Metacresol-preserved maropitant (Cerenia) at 4°C and 25°C – MM
 - Benzyl alcohol-preserved maropitant (Prevomax) at 4°C and 25°C – MBA
- Injection pain was assessed independently by two veterinarians blinded to treatment allocation
 - Pain was scored immediately after injection using a visual analogue scale (VAS) – using a vertical line transecting a 10 cm long horizontal line scale with 0 cm being no pain and 10 cm being worst imaginable pain.
 - Following 2 minutes of observation post injection: A simple descriptive score was assigned ranging from 0 (no pain) to 3 (severe reaction).
- Specific clinical signs were also observed shortly after injection and 24 hours later
 - Pain scores following benzyl alcohol-preserved maropitant (Prevomax) were lower than pain scores following metacresol-preserved maropitant (Cerenia).
 - Pain scores with benzyl alcohol-preserved maropitant (Prevomax) are low but are further reduced by refrigeration.
- In this study, refrigeration of metacresol-preserved maropitant (Cerenia) made no significant difference to pain scores after injection in this study.
- More clinical signs were observed after injection of MM than MBA. Scratching at the injection site and vocalisation were observed most often.

IN SUMMARY:

'In healthy beagle dogs, subcutaneous injection of the generic maropitant solution for injection containing benzyl alcohol as preservative (Prevomax), both at room temperature and at refrigerated temperature, is significantly less pain than maropitant solution for injection with metacresol as preservative (Cerenia).'

FOR EVERY 1 PREVOMAX TREATED DOG (ROOM TEMP)

1



15.8 DOGS WHO RECEIVE CERENIA AT (ROOM TEMP) WOULD HAVE A HIGHER PAIN SCORE.

15.8



1. Deckers, N., Ruigrok, CA., Verhoeve, HP., Lourens, N. (2018) Comparison of pain response after subcutaneous injection of two maropitant formulations to beagle dogs. *Veterinary Record Open* 5: e000262. doi: 10.1136/vetreco-2017-000262