Comparison of 0.2 Mg/kg Vs. 1.0 Mg/kg of Oral Meloxicam for Safe and Effective Analgesia in Domestic Rabbits.

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Hi, my name's Kate Neilds and I'm a final year veterinary medicine student at the University of Sydney. I wrote my Knowledge Summary with the help of Dr. Meerran Govendir entitled comparison of 0.2 milligrams per kilogram versus one milligram per kilogram of oral Meloxicam, for safe and effective analgesia in domestic rabbits.

I chose this topic because meloxicam is the current analgesic of choice for post-operative and musculoskeletal pain in rabbit patients due to its reduced risk of gut stasis in comparison to opioids and its palatable oral form. I'd read several studies, which suggested the current minimum recommended dose rate 0.2 milligrams per kilogram may not provide adequate analgesia. And so, I wanted to know if the maximum recommended dose rate of one milligram per kilogram would be safe and more effective to use as the standard dose rate.

After a comprehensive literature search, I found five studies, which analyze the effects of meloxicam on pain behaviour and kidney and liver biochemical analytes. The two dose rates based on these, I found that oral Meloxicam at a dose rate of 0.2 milligrams per kilogram daily, when used as the sole analgesic does not provide effective analgesia in rabbits. Although one study demonstrated this lower dose rate may provide effective analgesia if the treatment is combined with low dose buprenorphine, furthermore, a dose rate of one milligram per kilogram daily was shown to be more efficacious than the 0.2 milligrams per kilogram, but may also be an adequate analgesia post-operatively based on a single study. The literature supported the safety of both dose rates daily for healthy rabbits based on liver and kidney biochemical analytes.

The chosen studies were a mix of randomized controlled trials and prospective clinical trials, which are both strong types of study designs. And the findings in the articles are consistent with each other. However, the available studies selected small treatment groups and sample sizes with no statistical justification, which weakened the statistical power of the evidence. Also, the two prospective clinical trials did not demonstrate safety for postoperative or sick rabbits, meaning their safety data may not be generalizable to the rabbits, most likely to be receiving the Meloxicam treatment. Interestingly, the terminal half-life of Meloxicam in rabbits was approximately eight hours in comparison to 12 to 38 hours in dogs. This is likely due to the high metabolic rate of rabbits. Therefore more frequent dosing and rabbits may provide greater analgesic efficacy. This hypothesis is supported by several case reports released in 2019, where more frequent dosing at one milligram per kilogram dose rate or greater was trialed successfully. So, the clinical bottom line is that based on the current evidence, it would be beneficial to choose the higher recommended dose rate of Meloxicam for analgesia in rabbits and consider multimodal analgesia for severe postoperative pain.

Although there's reasonable evidence for the safety of Meloxicam at higher dose rates, it may be beneficial to monitor for any liver or kidney compromise. Thank you for listening to this Audio Summary.

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