

Abstract

The use of the antiemetic Cerenia (Maropitant) in the veterinary field is used to reduce vomiting and nausea post-surgical procedures. Medical journals state that there is a pain associated with Cerenia injections upon administration. The veterinary clinic that I am employed in will add Vitamin B12 Complex to Cerenia injections to reduce or remove pain. Vitamin B12 is also said to increase levels of energy and alertness in patients. To determine if these two effects were true, I collected data with several variables. These variables included: Breed, Age, Amount of Cerenia given, Amount of B12 given, reaction, intubation time, Isoflurane off time, and extubation time. To determine if B12 reduced or removed pain upon injection, I recorded the amount of Cerenia given as well as the amount of B12 given, if applicable, and the reaction of the patient. Reactions were based on a scale of: None, Mild, Severe. To determine if B12 increased energy and alertness, I recorded three separate times during the anesthetic procedure and found the difference between 'Isoflurane off time' and 'Extubation time'. I expected the addition of B12 to reduce or remove pain from Cerenia injections and for patients to be extubated sooner if they were given B12. Upon completing my data collection and analysis, B12 does not reduce or remove pain associated with Cerenia injections and B12 does not decrease extubation time post-surgery.

Introduction

As mentioned above, Cerenia (Maropitant) is given prior to surgeries to reduce vomiting and nausea post-surgery. At Family Pet Clinic of Redondo Beach, we administer Cerenia to any patients going under anesthetic procedures if their owners accept the service. In the research that I conducted revolving around Cerenia, medical journals claim that there is a pain associated with Cerenia injections. The drug manual directly from the box of Cerenia states that in a study of the effects of the drug, 3 dogs in a sample of 77 (4%) experienced pain (Zoetis, 2015). Cerenia is composed of maropitant which binds to Sulphobutylether-beta-cyclodextrin to mitigate pain. The objective of another medical journal was to determine if temperature alters binding and effects pain associated with injection. The journal discovered that as binding decreased, pain increased as temperature increased and as binding increased, pain decreased as temperature decreased. The journal concluded that refrigerated Cerenia may reduce the pain associated with subcutaneous injections of Cerenia (Narishetty, et al., 2009). This is important because my clinic will put Cerenia in the fridge at all times when not in use. Vitamin B12 has been thought to be a supplement that provides energy by increasing red blood cell production which provides the necessary energy for dogs to function. Vitamin B12 helps maintain normal function of the brain and spinal chord. This may increase alertness and recovery post surgery (Williams, 2018). It plays a key role in energy production but does not provide extra energy. However, those that are deficient in B12 will receive higher energy levels when given supplements of B12 (Berkheiser, 2018).

Objectives

- I. To determine if the addition of Vitamin B12 in Cerenia injections reduce or removes the pain associated with administration.
- II. To determine if the administration of B12 Pre-Surgical procedures allows patients to be extubated and regain normal motor functions sooner.

Materials and Methods

I. Materials

- a. Cerenia (Maropitant)
- b. Vitamin B12 Complex
- c. Appropriate Syringes and Needles
- d. Data Collection Sheets
Breed:
Age:
Amt. Cerenia:
Amt. B12:
Reaction: None/Mild/Severe
Intubation:
Iso-Off:
Extubation:
Please put in Matty's locker
- e. Patients that are being administered Cerenia
- f. Access to online resources
- g. Access to excel to compile and analyze data

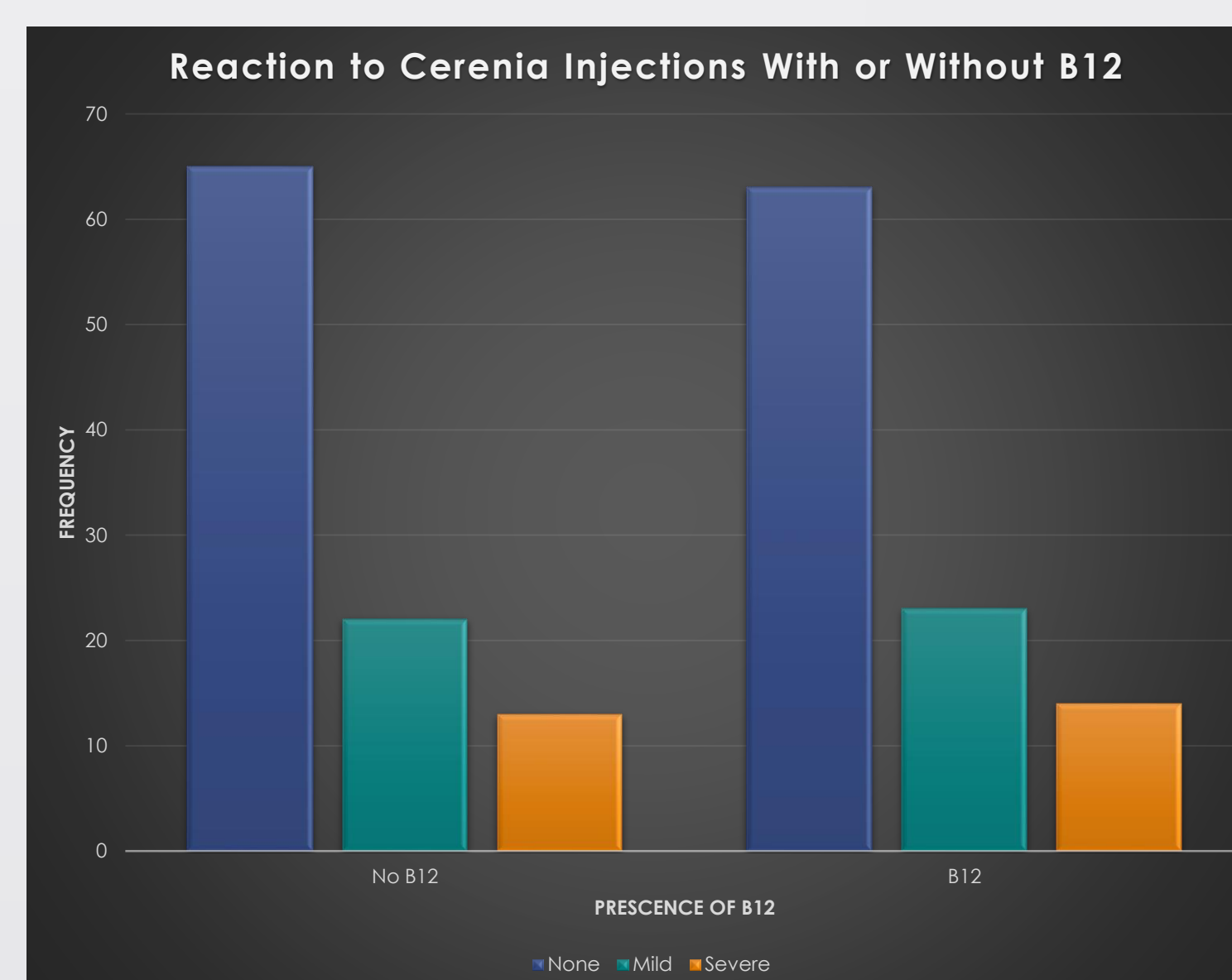
II. Methods

- a. Determine if the patient is receiving Cerenia
- b. Determine if the Patient is receiving Vitamin B12
- c. Record Breed, Age, Amount of Cerenia given, and Amount of B12 given
- d. Record reaction
- e. Record Intubation time, Iso-Off time, and Extubation Time
- f. Compile Data
- g. Calculate time difference between Iso-Off and Extubation Time
- h. Analyze Data

Results and Data Analysis

Data Analysis

- I. 117 total data sample collected
- II. 31 did not received B12
 - a. Average wake up time was 12 minutes and 14 seconds
 - b. 20 of the 31 (65%) of patients had no reaction
 - c. 7 of the 31 (22%) of patients had mild reactions
 - d. 4 of the 31 (13%) of patients had severe reactions
- III. 86 received B12
 - a. Average wake up time was 15 minutes and 10 seconds
 - b. 54 of the 86 (63%) of patients had no reaction
 - c. 20 of the 86 (23%) of patients had mild reactions
 - d. 12 of the 86 (14%) of patients had severe reactions



Conclusion

After collecting and analyzing the data, the results are very similar. There is no significant difference in reaction to Cerenia injection with patients that did and did not receive Vitamin B12. Patients that did not receive B12 on average were extubated sooner than those that did. All reactions varied amongst groups of dogs, breeds, and ages. My results conclude that Vitamin B12 has no effect on reactions associated with Cerenia injection or recovery time post-surgery. If I were to repeat this experiment, I would collect more data for patients that did not receive B12. The little amount of samples that did not receive B12 may not be representative of a larger population.

References

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