



## **Audio Summaries: Avril McGinn - In dogs with chronic enteropathies, can oral b12 tablets be used to treat hypocobalaminaemia?**

Avril McGinn

My name is Avril McGinn, and the title of my Knowledge Summary is in dogs with chronic enteropathies, can oral b12 tablets, be used to treat hypocobalaminaemia?

The reason why I chose to do this Knowledge Summary is because we have many dogs presenting to our clinic for b12 supplementation, who either suffer from discomfort of frequent injections. They find the regular visits to the hospital stressful, or that the visits are just costly or time consuming to the owners.

The protocol used in our clinic is a once weekly injection for six weeks followed by an injection four weeks later. The protocols for parental dosing of b12 are based on expert opinion and clinical experience and are not validated protocols.

Normal b12 levels of a dog is considered to be between 252 and 908 nanograms per liter. The PICO question I proposed was in dogs with chronic enteropathy does treatment with oral cobalamin compared to parental cobalamin, provide serum cobalamin levels greater than 270 nanograms per liter.

To answer this question, I performed a search in CAB abstracts and then PubMed. And this resulted in one case series and two block randomised clinical trials. Toresson et al. in 2016 produced a retrospective study based in review of medical records of dogs that have been treated with oral b12. They had been given a once daily dosing of oral b12 tablets, and the study concluded the dogs treated with the oral b12 tablets had normal blood cobalamin levels of greater than 270 nanograms per liter. Following this, a randomized clinical trial was later performed by Toresson et al. in 2018, dogs with low b12 levels were either supplemented with a parental protocol or with once daily dosing of b12 tablets.

The experimental trial concluded that both the oral and the parental b12 supplementation in dogs provided a significant increase in serum b12 levels of greater than 285 nanograms per liter. This was then followed by a study to show that both the oral and parental supplementation of b12 resulted in decreased methylmalonic acid levels with no significant difference between the two groups, a b12 deficiency leads to accumulation of methylmalonic acid, a methylmalonic acid is indicative of the cellular b12 levels. What was interesting in these studies is that in the oral dosing group, some of the owners did not fully comply with the protocol. However these cases were included, included in the results and still had normal b12 levels. It was also found that some of the dogs in the injectable protocol were found to have low b12 levels at the end of the study. So the evidence provided by the block randomized

controlled clinical trial indicated that oral dosing of b12 results in normal cobalaminaemia, with levels similar to that achieved with parental dosing. These studies provide veterinary professionals with a once daily dosing schedule and monitoring serum b12 levels is then recommended to ensure normal cobalaminaemia is achieved. It has been shown that supplementation with both oral and parental b12 correlates with increased intracellular b12 levels, future studies are needed to investigate the outcome of oral b12 dosing in dogs with extra gastrointestinal disease. Thank you.

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