Assessment of a new high protein – low carbohydrate diet in dogs with chronic gastrointestinal disease

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Introduction

Dietary therapy plays a major role in the management of most gastrointestinal (GI) disorders. The common strategy is to feed a highly digestible food.

The objective of this study was to evaluate the efficacy of a new dry high protein - low carbohydrate (HP-LC) diet intended for the management of maldigestion-malabsorption in dogs.

Animals, materials and methods

Forty-seven client-owned adult dogs with chronic GI disorders were followed up for 2 months. During the first month (M1), after a 4-day diet transition, they were fed exclusively the test diet (Table 1). During the second month (M2), they were fed again their usual dry diet.

Table 1: Characteristics of the test diet

Metabolisable Energy (ME) (kcal/100g)	411
Protein (% ME)	33
Fat (% ME)	49
Carbohydrate (% ME)	18
Soluble fibre (% DM)	1.4
Insoluble fibre (% DM)	11.8
Apparent digestibility coeff of protein (%)	85
Apparent digestibility coeff of fat (%)	97

No medical management was allowed during the study. Five digestive parameters were assessed 6 times: at inclusion, then each week of M1, and finally at the end of M2 (Table 2). Wilcoxon signed rank and Mc Nemar's tests were used for statistical analyses, with a significant threshold of 5%.

Table 2: List of the digestive parameters

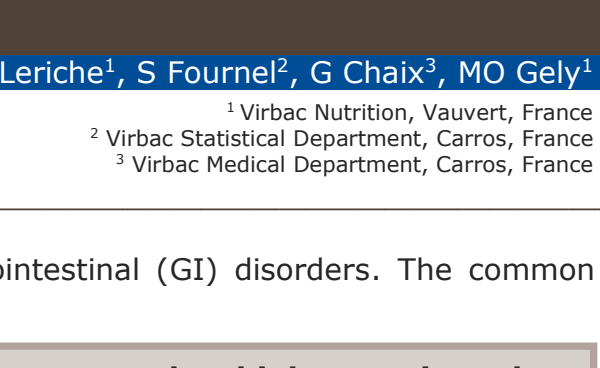
Freq defecation	from <1 to >5 times a day
Faecal score	from 1=dry and firm to 5=watery
Faeces odour	from very slightly odorous (very acceptable) to very odorous (unbearable)
Faeces quantity	from very small to very large
Flatulence	from never to very often (several times a day)

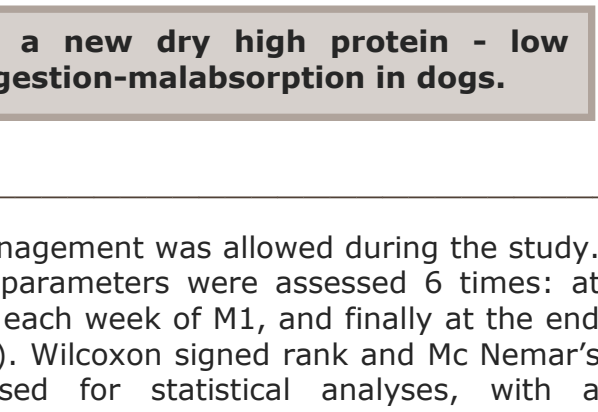
Results

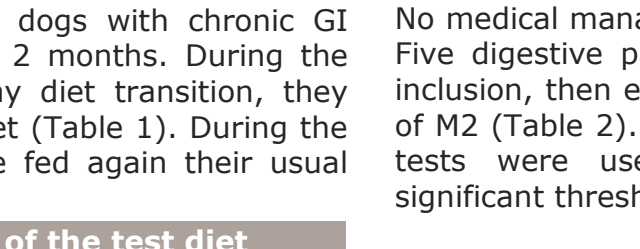
The mean frequency of defecation and the mean faecal score significantly improved between inclusion and M1 ($p<0.0001$), and then degraded between the end of M1 and M2 with the usual diet ($p=0.007$ and $p=0.0005$ respectively) (Figures 1 & 2). Similar development was noticed for all parameters during the 2 months of the study; improvement was seen as soon as the first week of M1 for most dogs (64 to 100% dogs, depending on the parameter). The test diet resulted in clinical improvement, as attested by comparison of % dogs with normal digestive parameters at the different times of the study (Table 3). After 1 month fed the test diet, 86% dogs were improved.

Table 3: Dogs (%) with normal parameters at different time points (*p<0.05, **p<0.01, ***p<0.0001)

Digestive parameter	Considered as normal when :	Dogs (%) with normal parameter		
		Inclusion	End M1	End M2
Freq of defecation	≤2 times/day	68	93**	73*
Faecal score	≤3	75	95*	80
Faeces odour	≤slightly odorous	2	77***	52**
Faeces quantity	≤normal	59	91**	75
Flatulence	never	2	46***	41







Conclusion

This preliminary study shows the benefit of the new highly digestible HP-LC diet for chronic gastrointestinal disorders management and recurrence prevention in dogs.

References: Guilford WG. J Nutr 1994 ; 124 : 2663S-2669S. **Davenport DJ et al.** Small Anim Clin Nutr 2010 ; 1065-1074. **Davenport DJ et al.** Small Anim Clin Nutr 2010 ; 1135-1141.