

ORAL PRESENTATION

Open Access

Dietary supplements to a low protein diet may affect the occurrence of hepatic lipidosis in mink - a strict carnivore

Connie Frank Matthiesen^{1*}, Anne-Helene Tauson^{1,2}

From Animal Obesity - causes, consequences and comparative aspects
Uppsala, Sweden. 14-16 June 2015

Introduction

Hepatic lipidosis is a multifactorial disease and may be caused by a number of factors such as low protein provision, feed deprivation, rapid accretion or mobilisation of body fat all resulting in metabolic imbalances.

Objectives

The objectives were to investigate if supplementation of a low protein diet (LP) with nutrients acting as methyl donors, antioxidants or having insulinogenic properties could lower the incidence of hepatic lipidosis in growing mink from August to November when mortality, caused by hepatic lipidosis, often is high.

Material and methods

Seventy-two growing mink were allocated into six groups with 6 males and 6 females. The control group was fed a conventional diet (30% of metabolisable energy (ME) from protein) whereas the 5 remaining groups were fed a LP diet (20% of ME from protein) and supplemented with crystalline amino acids (0.8% alanine, 0.5% taurine, 0.5% arginine, 0.5% methionine) or 2.5% dextrose. Balance and respiration experiments were performed and the animals were weighed and blood sampled every third week. The liver and body weights were recorded for all animals.

Results

Livers from animals with hepatic lipidosis were significantly heavier and contained more fat than livers from healthy animals. The survival rate was significantly

higher for the control and methionine groups (100%) than for the dextrose group (75%) and numerically higher than for alanine (92%), taurine (92%) and arginine (83%).

Conclusion

It can be concluded that our results indicate that the methionine level in a low protein diet plays an important role for the occurrence of hepatic lipidosis.

Authors' details

¹Department of Veterinary Clinical and Animal Sciences, University of Copenhagen, Copenhagen, Denmark. ²Department of Animal Nutrition and Management, Swedish University of Agricultural Sciences, Uppsala, Sweden.

Published: 25 September 2015

doi:10.1186/1751-0147-57-S1-O17

Cite this article as: Matthiesen and Tauson: Dietary supplements to a low protein diet may affect the occurrence of hepatic lipidosis in mink - a strict carnivore. *Acta Veterinaria Scandinavica* 2015 **57**(Suppl 1):O17.

Submit your next manuscript to BioMed Central and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



* Correspondence: cmt@sund.ku.dk

¹Department of Veterinary Clinical and Animal Sciences, University of Copenhagen, Copenhagen, Denmark

Full list of author information is available at the end of the article