Lymphatic fatty acids in canine with pharmaceutical formulations containing structured triacylglycerols - DTU Orbit (31/12/2018)

Lymphatic fatty acids in canine with pharmaceutical formulations containing structured triacylglycerols

The intramolecular structure of dietary triacylglycerols (TAG) influences absorption. In this study, two different pharmaceutical formulations were compared containing TAG differing in fatty acid profiles and intramolecular structures: LML and MLM, where M represented medium-chain fatty acids (MCFA; 8:0) and L represented long-chain fatty acids (LCFA). Lymph was collected from thoracic duct-cannulated canines for 12 h and the fatty acid composition was determined. The lymphatic transport of total fatty acids was significantly higher than the amount dosed; hence, the small exogenously dosed lipid recruited a large pool of endogenous fatty acids. The LML vehicle led to a significantly higher total fatty acid transport than the MLM vehicle. The amount of 8:0 recovered in lymph was almost similar and low for both groups. The amount of LCFA recovered from the animals dosed with the LML vehicle was generally higher than from the animals dosed with the MLM vehicle; however, statistically significant differences were only found for 18:0 and 18:3n-3. In conclusion, these results indicated that the fatty acid profile and intramolecular structure of administered TAG influenced the absorption of fatty acids in canines, also when the TAG was incorporated into a pharmaceutical formulation in low amounts.

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