



ω -6/ ω -3多不饱和脂肪酸比例对生长期扬州鹅血脂代谢及冠脉事件预测因子的影响

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Effect of ω -6/ ω -3 PUFA Ratios on Blood Lipid Metabolism and Predictive Factors for Coronary Artery Disease in Growing Yangzhou Geese

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摘要 本文旨在初步探讨不同 ω -6/ ω -3多不饱和脂肪酸(PUFA)比例对扬州鹅血脂、血清超敏C反应蛋白(hypersensitive C-reactive protein, HsCRP)及可溶性CD40配体(sCD40L)的影响。试验选择160只同批出雏、体重接近的21日龄的扬州鹅,随机分成4组,每组4个重复,每个重复10只。分别饲喂 ω -6/ ω -3 PUFA比例为3:1、6:1、9:1、12:1的饲料,并分别于42、56、70日龄时进行采血和血脂等指标的测定。结果表明:56、70日龄时, ω -6/ ω -3 PUFA比例为6:1组扬州鹅的血清中有较低的总甘油三酯(TG)($P<0.05$)、总胆固醇(TC)($P<0.05$)和低密度脂蛋白(LDL)($P<0.05$),且该组的高密度脂蛋白(HDL)在4组中最高($P<0.05$)。HsCRP或sCD40L水平总体上随 ω -6/ ω -3 PUFA比例的增加呈现上升趋势,基本都以3:1组最低,但各处理间的差异多不显著($P>0.05$)。综上所述, ω -6/ ω -3 PUFA比例为6:1组有较好的降低血脂的效应,而低 ω -6/ ω -3 PUFA比例(3:1)饲料有降低扬州鹅HsCRP和sCD40L的趋势。

关键词: ω -6/ ω -3 PUFA比例 扬州鹅 血脂 HsCRP sCD40L

Abstract: The objective of this trial was to investigate the effect of different ω -6/ ω -3 PUFA ratios on blood lipid metabolism, and predictive factors for coronary artery disease in growing Yangzhou geese. Hundred and sixty 21-day-old healthy Yangzhou geese with average body weight of (0.407 0.023) kg were randomly divided into 4 groups. They were fed diets with different ω -6/ ω -3 PUFA ratios, which were 3 : 1, 6 : 1, 9 : 1 and 12 : 1, respectively. The blood samples were obtained to determine the blood lipid, hypersensitive C-reactive protein (HsCRP), and soluble CD40 ligand (sCD40L) at the age of 42, 56, and 70 days, respectively. The results showed as follows: the geese fed the diet with the ω -6/ ω -3 PUFA ratio of 6 : 1 had much lower blood total triglyceride (TG) ($P<0.05$), total cholesterol (TC) ($P<0.05$), low-density lipoprotein (LDL) ($P<0.05$), and the highest high-density lipoprotein (HDL) ($P<0.05$) among the 4 groups at the age of 56 or 70 days. It was further observed that blood HsCRP or sCD40L levels were increased along with the ω -6/ ω -3 PUFA ratio increasing, and generally were all the lowest in 3 : 1 group, although no significant differences were found among the 4 groups ($P>0.05$). In conclusion, the diet with ω -6/ ω -3 PUFA ratio of 6 : 1 can decrease blood lipid; moreover, the diet with low ω -6/ ω -3 PUFA ratios (3 : 1) has a tendency to decrease blood HsCRP and sCD40L levels in Yangzhou geese. [Chinese Journal of Animal Nutrition, 2011, 23 (8) : 1289 - 1295]

Keywords: ω -6/ ω -3 PUFA ratio, Yangzhou goose, blood lipid, HsCRP, sCD40L

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