Qualitative Risk Assessment of Chronic Renal Failure Development in Healthy, Female Cats as Based on the Content of Eicosapentaenoic Acid in Adipose Tissue and That of Arachidonic Acid in Plasma Cholesteryl Esters

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Abstract:

A study was carried out to assess the qualitative risk of development of chronic renal failure (CRF) in young healthy, female cats as based on the content of arachidonic acid (AA) in plasma cholesteryl esters (CE) and eicosapentaenoic acid (EPA) in adipose tissue. It has been suggested that the content of AA in CE should be <10% of total fatty acids (TFA) and of EPA in adipose tissue be >1.4% of TFA. Subcutaneous adipose tissue and blood samples were obtained from 48 female cats. There was a statistically significant correlation between linoleic acid content of adipose tissue and that of plasma CE. In all cats the EPA content of adipose tissue was lower than 1.4% of TFA and in 30 cats that of AA in plasma CE was higher than 10% of TFA. The EPA content of adipose tissue and the AA content of plasma CE are determined by the contents of these fatty acids in the diet. It is concluded that the fatty acid composition of cat foods should be determined and that, if deemed necessary, the ingredient composition should be altered so that the content of EPA is raised and that of AA is lowererd.

Keywords: chronic renal failure; cats; adipose tissue; plasma cholesteryl esters; arachidonic acid; eicosapentaenoic acid

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