



Levels of phytosterols in the blood and tissues may reach high levels during parenteral lipid administration and may be toxic to cells” Zaloga (2015).

Abstract:

Phytosterols are plant-derived sterols that are structurally and functionally analogous to cholesterol in vertebrate animals. Phytosterols are found in many foods and are part of the normal human diet. However, absorption of phytosterols from the diet is minimal.

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Most lipid emulsions used for parenteral nutrition are based on vegetable oils. As a result, phytosterol administration occurs during intravenous administration of lipid. Levels of phytosterols in the blood and tissues may reach high levels during parenteral lipid administration and may be toxic to cells. Phytosterols are not fully metabolized by the human body and must be excreted through the hepatobiliary system. Accumulating scientific evidence suggests that administration of high doses of intravenous lipids that are high in phytosterols contributes to the development of parenteral nutrition-associated liver disease. In this review, mechanisms by which lipids and phytosterols may cause cholestasis are discussed. Human studies of the association of phytosterols with liver disease are reviewed. In addition, clinical studies of lipid/phytosterol reduction for reversing and/or preventing parenteral nutrition associated liver disease are discussed.

Reference:

Zaloga, G.P. (2015) Phytosterols, Lipid Administration, and Liver Disease During Parenteral Nutrition. JPEN. 39(1), p.39S-60S.

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