Abstract

Concomitant administration of statins with food may alter statin pharmacokinetics or pharmacodynamics, increasing the risk of adverse reactions such as myopathy or rhabdomyolysis or reducing their pharmacological action. This paper reviews major interactions between statins and dietary compounds. Consumption of pectin or oat bran together with Lovastatin reduces absorption of the drug, while alcohol intake does not appear to affect the efficacy and safety of Fluvastatin treatment. Grapefruit juice components inhibit cytochrome P-4503A4, reducing the presystemic metabolism of drugs such as Simvastatin, Lovastatin and Atorvastatin. Follow-up studies on the therapeutic effect of statins in patients consuming a Mediterranean-style diet are necessary to assure the correct prescription because the oil-statin and minor oil compound-statin possible interactions have been only briefly studied. Preliminary study suggests that olive oil can increase the hypolipaemic effect of Simvastatin with respect sunflower oil. The consumption of polyunsaturated rich oils, throughout the cytochrome P-450 activation could decrease the half-life of some statins and therefore their hypolipaemic effects. The statins and n-3 fatty acids combined therapy gives rise to pharmacodinamic interaction that improves the lipid profile and leads greater cardioprotection. Although statins are more effective in high endogenous cholesterol production subjects and plant sterols are more effective in high cholesterol absorption efficacy subjects, plant sterols-statins combined therapy gene-rates very positive complementary effects. This review ends suggesting possible diet-stain interactions that require further investigations (e.g. types of olive oils, fruit juices other than grapefruit, fibre or consumption of alcoholic beverages rich in polyphenols or ethanol).

Keywords

Statins, Diet-drug interactions, Fibre, Alcohol, Grapefruit juice, Oils, Plant sterols, N-3 fatty acids.