

Characteristics of Subjects with Very Low Serum Low-Density Lipoprotein Cholesterol and The Risk for Intracerebral Hemorrhage

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Abstract

Some clinical studies and meta-analyses including CTT have shown increased risk of intracerebral hemorrhage (ICH) with statin therapy. The Stroke Prevention with Aggressive Reductions in Cholesterol Levels (SPARCL) trial was a prospective, double-blind, RCT which showed that treatment with a high dose of atorvastatin (80 mg per day) resulted in a 16% reduction in the combined risk of fatal and nonfatal stroke in patients with a recent stroke or TIA and no known coronary heart disease, with unadjusted HR for hemorrhagic stroke was 1.68, 95% CI 1.09 to 2.59). Post hoc analysis of data from patients with prior cerebrovascular disease enrolled in the Heart Protection Study found a non-significant increase in hemorrhagic stroke in those treated with simvastatin 40 mg per day vs placebo. It is yet not clear why there is an increased risk of ICH in those who receive high dose of statins. Although some epidemiologic studies have found an association between low cholesterol levels and an increased risk of ICH, such a relationship has not been found in more recent clinical trials of statins given for CAD patients with a strategy of intensive reductions in LDL cholesterol. Elderly male patients with previous history of hemorrhagic stroke and patients with hypertension are at increased risk of ICH. Also an increased risk of hemorrhagic strokes was also observed in subjects with an investigator-designated small-vessel distribution stroke at entry, which requires further studies about this association. Currently, various modes of therapies are possible to lower LDL cholesterol level to a very low level than ever. This review aimed to discuss about whether very low LDL cholesterol level is associated an increased risk of ICH, under various clinical conditions and different modes of cholesterol-lowering therapies.

Keywords

Statin, Low-Density Lipoprotein Cholesterol, Intracerebral Hemorrhage