Reviewer's report

Title: Rapid decrease in carotid plaque lipid content as assessed by magnetic resonance imaging during treatment of rosuvastatin

Version: 3  Date: 3 May 2014

Reviewer: Tzung-Dau Wang

Reviewer's report:

Major Compulsory Revisions

1. MRI analysis of plaque composition: Despite the authors described that the lipid-rich necrotic core (LRNC) was identified by using multicontrast weightings plus post-contrast T1W images, it is still hard for readers to image how to decide LRNC once there are discrepancies among different MRI-weighted images. Therefore, a hierarchical algorithm for the MRI analysis of LRNC should be provided (Yuan C, et al. In vivo accuracy of multispectral magnetic resonance imaging for identifying lipid-rich necrotic cores and intraplaque hemorrhage in advanced human carotid plaques. Circulation 2001;104:2051-6.).

2. Figure 3. According to the MRI diagnostic criteria of LRNC as stated in this manuscript and the above-cited reference (Yuan C, et al. Circulation 2001;104:2051-2056.), the selected lipid content was obviously overestimated since LRNC should be hypointense in T2W. However, the yellow circle included hyperintense area in T2W. This discrepancy again reflects the importance of the hierarchical algorithm for identification of LRNC. The authors should redraw the selected lipid content in Figure 3. The abbreviation CETIW should be detailed as well.

3. Given that there were no statistically significant differences in LRNC measured at 3 months, 12 months, and 24 months, it would be not appropriate to state that “LRNC volume and %LRNC continued to decrease moderately at 12 and 24 months”. It should be interpreted as no further decrease in LRNC volume or %LRNC after 3 months. Please revise or provide reasonable explanations.

Minor Essential Revisions

1. Natural course of LRNC: According to the references cited by the authors (8, 9, 31, 32), we cannot find evidence showing that LRNC would generally become larger in the future. In the ESTABLISH trial, the coronary plaque volume (rather than LRNC) increased gradually in the usual care group. However, there are no previous studies reporting that the LRNC would increase in size. Please clarify.

2. Title: The word “rapid” may be too strong for the findings. “Early decrease” looks more neutral. Please revise.
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests