Author's response to reviews

**Title:** Previous chronic cerebral infarction is predictive for new cerebral ischemia after carotid endarterectomy

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Reviewer 1:

Comment 1: The present series represents a heterogeneous population including mixed symptomatic and asymptomatic patients as well as a large part of patients also needing CABG. Why not a more homogenous population?

Answer: Firstly, we thank you for your valuable comment. As indicated in the introduction section, the purpose of the study was to investigate the relation between preoperative chronic cerebral ischemia and postoperative newly developed cerebral ischemia in patients undergoing CEA. We compared the patients with previous chronic cerebral ischemia versus without previous chronic cerebral ischemia in terms of newly developed cerebrovascular events. Therefore, the effect of symptomatic status of the patient on postoperative newly developed cerebral ischemia is not the main question of the study. Moreover, detailed data of symptomatic vs asymptomatic patients are shown in Table 1 and 3. However, as you stated, a more homogenous group composed of purely symptomatic or asymptomatic patients could secure more clear data to make a stronger conclusion.

Comment 2: Most studies on white matter lesions use 3T MRI. Why did THE authors use 1.5 T?

Answer: We certainly agree with you on this point. In many recent studies, 3T MRI is preferred method to detect white matter lesions. However, 1.5 T MRI is the only available medical device in the hospital where the study had been taken place. There are also studies in which 1.5 T MRI was used to detect cerebral ischemia (Wolf O et al. Stroke 2004;35:373-5.), (Stojanov D et al. AJNR 2012;33:708-14) (Leo H Bonati et al. Lancet Neurol. 2010;9(4):353-62).

Comment 3: Possibly, more lesions will be scored with the postoperative scan being performed after three days instead of within 48 hrs. Please discuss.

The restricted cerebral H2O diffusion associated with ischemic change persists for approximately 4-6 days. Thereafter, diffusion starts to increase and hyperintensity on DWI images begins to vanish. (Augustin et al. Diffusion-weighted Imaging of Patients with Subacute Cerebral Ischemia: Comparison with Conventional and Contrast-enhanced MR Imaging. AJNR 2000 21: 1596-1602.)

Cerebral MRI are being done after 24 hours following CEA or carotid stenting to scan newly developed cerebral ischemia in the postprocedural period in various studies. Below, you may see the relevant studies:

- Stojanov D et al. New Ischemic Brain Lesions on Diffusion-Weighted MRI after Carotid Artery Stenting with Filter Protection: Frequency and Relationship with Plaque Morphology. AJNR 2012;33:708-714


Therefore, in the present study, cerebral MRI scans were done in the time period between 24 - 48 hours after CEA operations. We have also add this information to indicate the timing of cerebral MRI scans in Methods section by a small revision. Finally, you are certainly agree about having cerebral MRI scans done after 72 hours in the postoperative period may secure to detect even more silent lesions.

Comment 4: Introduction. Ref 6 is not appropriate. Better look for example at Huibers et al EJVES 2015 PMID 26160210.

Answer: Thank you again for your valuable notice. We replaced reference 6 by the reference 'Huibers, D. Calvet, F. Kennedy, K.R. Czuriga-Kovács, R.L. Featherstone, F.L. Moll et al. Mechanism of Procedural Stroke Following Carotid Endarterectomy or Carotid Artery Stenting within the International Carotid Stenting Study (ICSS) Randomised Trial. http://dx.doi.org/10.1016/j.ejvs.2015.05.017.'
Comment 5: Discussion is too lengthy.
Answer: We have shortened the discussion as you recommended. Deleted parts of the discussion are painted by red color.
Comment 6: The conclusions should be weakened due to heterogeneous and SMALL population. Please adjust.
Answer: The statements in the conclusion section are weakened due to heterogeneous and relatively small number of patients.
Thank you.