Author’s response to reviews

Title: Clinical features and the degree of cerebrovascular stenosis in different types and subtypes of cerebral watershed infarction

Authors:

Yue Li (9119yueyue@sina.com)
Man Li (pkumanli@163.com)
Xiaoyu Zhang (cyzxy731@126.com)
Shuna Yang (medicalyangshuna@163.com)
Huimin Fan (fanhuimin0106@163.com)
Wei Qin (qinwei5658@163.com)
Lei Yang (yangl1228@163.com)
Junliang Yuan (yuan_doctor@163.com)
Wenli Hu (huwenli@sina.com)

Version: 1 Date: 25 Jul 2017

Author’s response to reviews:

Dear Prof. Francisco Alvarez, Prof. Yoo-Im Choi and Prof. Serrati Carlo:

Thank you very much for your letter and for the comments on our manuscript entitled “Clinical features and the degree of cerebrovascular stenosis in different types and subtypes of cerebral watershed infarctions” (NURL-D-17-00174). We have studied those valuable and helpful comments and revised our manuscript accordingly. We hope the latest, thoroughly revised vision of our manuscript would have your approval. Point-by-point responses to editors and reviewers are as follows:

Responses to the reviewers:

Yoo-Im Choi (Reviewer 1): This study is a very interesting paper that differentiates the mechanisms of different types and subtypes of WSI.
Response: Thank you very much for positive comments.

Serrati Carlo (Reviewer 2):

1) The topic is interesting but the conclusions are not enough supported. In particular the presence of a critical internal carotid stenosis is not equivalent of hemodynamic pathogenesis, because artery to artery embolism is a plausible alternative mechanism. 67 patients with watershed infarctions were excluded from the analysis because of the presence of atrial fibrillation (32), Patent Foramen Ovale (24) or for incomplete examinations (11). The presence of subjects with watershed infarctions and possible cardiac source of embolism supports the alternative hypothesis of an embolic pathogenesis of this type of cerebral infarctions. The inclusion of these patients in the analysis might clarify the interpretation of the data.

Response: Thank you for your constructive suggestion. We have defined the following factors as potential sources of cardioembolism (PSCE): recent myocardial infarction (<3 weeks), atrial fibrillation, dilated cardiomyopathy, acute bacterial endocarditis, mitral stenosis, prosthetic valve replacement, and sick sinus syndrome or patent foramen (Line 103, Page 7), and redone all the statistical analyses.

2) As second main result of the paper, the authors find that subjects with IWI (in which critical internal carotid stenosis is more prevalent) deteriorate after the admission more frequently and have a worst prognosis. In multivariate analysis the presence of IWI results an independent factor influencing poor outcome, but the presence of internal carotid stenosis was not included in the analysis.

Response: Thank you for your careful reviewing and comments which are very helpful to improve our study. We have included the presence of critical internal carotid stenosis as an independent variable in multivariate analysis (Line 183, Page 12), and found that the presence of IWI, critical stenosis of ICA and the initial NIHSS score were independently associated with a poor outcome 3 months post stroke. (Line 217, Page 14)

3) The method of evaluation of carotid stenosis degree is not described: ECST (European Carotid Surgery Trial) method or NASCET (North American Symptomatic Carotid Endarterectomy Trial) method for example.

Response: Thank you for pointing this out. We have clarified the evaluation method accordingly as follows:
We used North American Symptomatic Carotid Endarterectomy Trial (NASCET) method to measure the degree of cerebrovascular steno-occlusion. (Line 145, Page 10)

4) In the abstract section the authors say that watershed infarctions were identified in diffusion weighted imaging templates but in the MRI Imaging Analysis description, they were defined "hypertintense areas" and the kind of MRI sequence is not indicated.

Response: Thank you for your careful review. We are very sorry for the previous obscure description. We have corrected as follows: CWI was defined as hyperintense areas on DWI sequence in the junctions of the anterior cerebral artery (ACA), middle cerebral artery (MCA), and posterior cerebral artery (PCA) territories (Line 134, Page 9) and IWI was defined as hyperintense areas on DWI sequence between the deep and superficial perforating arteries of the MCA (Line 139, Page 9).

Responses to the editor’s comments:

Please consider the comments of Reviewers.

Additionally, an English grammar review is necessary.

Response: Thank you very much for your suggestion. We have turned to a specialist in the English language for help. Hopefully the latest manuscript would be better.

Thank you again for all the valuable comments and suggestions. Please let us know if there should anything else to be revised.

Yours sincerely,

Wenli Hu