Author's response to reviews

Title: Establishment of a canine model of cardiac memory using endocardial pacing via internal jugular vein

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Author's response to reviews:

Dear Editor:

Thank you for your kind letter of May 21, 2010. We have revised the entire manuscript entitled “Establishment of a canine model of cardiac memory using endocardial pacing via internal jugular vein” (MS:4632813633756619) from start to finish in accordance with the reviewers’ and editorial comments. We acknowledge your help and the reviewers’ comments and constructive suggestions very much, which are very valuable in improving the quality of our manuscript.

Here below is our description on revision according to the comments.

Reviewer 1

The reviewer’s comment: In their methodological paper, Yue-Chun and colleagues report on a canine model for studying cardiac memory. The authors performed endocardial ventricular pacing via the internal jugular vein in conscious Beagle dogs, which were permanently paced for periods of one hour and one week, respectively. After pacing was discontinued, electrocardiographic recordings were obtained and the lasting time for T-wave recovery was monitored. The canine model established by the authors neither requires thoracotomy nor epicardial lead positioning. The authors demonstrate the feasibility of this experimental animal model for studying cardiac memory. The paper is well written and covers the existing literature on this topic.

The authors’ Answer: We acknowledge the reviewer’s comments very much.

Reviewer 2

The reviewer’s comment: The authors claim to have established a new canine model using endocardial pacing via internal jugular vein for the study of cardiac
memory. They also claim that this model is not associated with pathologic myocardial changes as is the case with the relevant epicardial model. However, right ventricular pacing is associated with mismatching of perfusion and innervation with perfusion abnormalities of both the septum and free wall (myocardial perfusion and innervation were not evaluated in this study). As the mechanisms of cardiac memory have been evaluated in human studies and several canine models in the past (J Physiol 2006; 570.2:209–218), the innovation in this study is not clear to me.

The authors’ Answer:

We agree with the reviewer that the myocardial perfusion and innervation should be evaluated in the study, which might further improve the quality of the study. However, Many previous studies (Lee MA, et al: Effects of long-term right ventricular apical pacing on left ventricular perfusion, innervation, function and histology. J Am Coll Cardiol, 1994;24(1):225-32. Tse HF and Lau CP: Long-term effect of right ventricular pacing on myocardial perfusion and function. J Am Coll Cardiol, 1997;29(4):744-9.) examined the effects of long-term right ventricular apical pacing on left ventricular perfusion and innervation. Thus, we believe that the conclusions from other studies are available.

The innovation in this study is also clear that the canine cardiac memory model established by us neither requires thoracotomy nor epicardial lead positioning as the reviewer 1’s comments. The closed-chest canine cardiac memory model was based on permanent transvenous ventricular pacemaker implantation using right ventricular endocardial pacing. The surgical procedure in this approach is less severe than the traditional method in which the pacing lead is positioned on the epicardial ventricular apex after performing a thoracotomy. In addition, this novel approach is similar to the pacemaker lead placement in patients improving comparisons between this model and data from the clinical setting. The basic and clinical research on the mechanisms of cardiac memory is in progress (Özgen N and Rosen M: Cardiac memory: A work in progress. Heart Rhythm 2009;6:564–571). In conclusion, the canine cardiac memory model established by us was feasible for studying cardiac memory.

Editorial comments:

1) Experimental research that is reported in the manuscript must have been performed with the approval of an appropriate ethics committee. Research carried out on humans must be in compliance with the Helsinki Declaration (http://www.wma.net/e/policy/b3.htm), and any experimental research on animals must follow internationally recognized guidelines. A statement to this effect must appear in the Methods section of the manuscript, including the name of the body which gave approval, with a reference number where appropriate.

The authors’ Answer: The study was approved by the Wenzhou Medical University Committee on Ethics in the Care and Use of Laboratory Animals. All animals received humane care in compliance with the Guide for the Care and Use of Laboratory Animals, published by the National Institutes of Health (NIH publication No.85-23, revised 1985).

2) We recommend that you copyedit the paper to improve the style of written
The authors’ Answer: About the English writing of the manuscript, we carefully proof-read the manuscript to minimize typographical, grammatical, and bibliographical errors. We don’t know whether it has reached to your magazine’s standard.

The manuscript has been also revised to conform to the style and format guidelines of the journal.

Thank you and all the reviewers for the kind advice.

Sincerely yours,
Li yue-chun
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