Author's response to reviews

Title: Acupuncture at homotopic acupoints exerts dual effects on bladder motility in anesthetized rats

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Version: 5 Date: 5 May 2015

Author's response to reviews: see over
Dear Editor,

We are submitting a second revision of manuscript (ID: 1230726949149816) entitled “Acupuncture at homotopic acupoints exerts dual effects on bladder motility in anesthetized rats” for your consideration of publication in the BMC Complementary and Alternative Medicine.

In the revision, we revised the manuscript based on the reviewers’ comments.

Regarding the detailed responses point by point to the reviewers’ comments, please see the Responses to the reviewers attached.

Thank you in advance for your kind consideration. We look forward to hearing from you.

Sincerely,

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Authors’ answer to reviewers’ comments

Reviewer 1

Minor Essential Revisions.

1. Statistical analysis was described that data was analyzed by a paired t-test or
one-way ANOVA. However, data was only analyzed by a paired t-test in figures.

Answer: We are sorry for this error and thank you for your reminder. We already deleted “or one-way ANOVA followed by a q test where appropriate” in this revision.

2. Bladder motility with or without acupuncture in the active state of bladder was shown in figure. 1 (a). MA 1min was marked at the bottom of the picture. In my opinion, with or without acupuncture should be marked in the contractile wave. It is the same for figure. 2 (a).

Answer: Scale bar in X axis is only to show when and how long manual acupuncture was performed. To keep consistent with the scale bar in Y axis, here we also marked it at the bottom of the waves. On the other hand, labeling it at the bottom can also avoid confusion which was caused by marking in the contractile wave. In fact, in the previous publications including our papers, labeling the scale bar at the bottom is very common and acceptable in the representative electrophysiological traces. Here we listed several references.

References


Reviewer 2

We thank you for your comment. Because you provided us two comments: one is brief and another is detailed, here we will follow the detailed comment to answer your concerns through point by point.

Abstract.

1. Background: “It is well-known that dual effects of acupuncture on the 32 bladder can be generated based on different contractile states of the bladder, However, the dual effects of single acupoint stimulation and acupoint site-specificity on the bladder have yet to be investigated.”

Answer: We revised the sentence as: It is well-known that dual effects of acupuncture on the bladder can be generated based on different states of the bladder, however, the dual effects of single acupoint stimulation and acupoint site-specificity (homotopic acupoints and heterotopic acupoints) on the bladder have yet to be investigated.”
2. Conclusions: “MA at homotopic acupoints may produce dual effects on bladder motility that is dependent on the bladder’s contractile state.”

Answer: We revised the sentence as “MA at homotopic acupoints may produce dual effects on bladder motility: inhibiting bladder motility when in an active state and enhancing bladder motility when in a static state.”

Background.

1. At the end of the second paragraph: “Conversely, acupuncture at heterotopic acupoints, which utilize different spinal segments to innervate a visceral organ than the where the afferent signal originates, has been shown to induce gastrointestinal –peristalsis in complete spinal rats.”

Answer: We revised the sentence as “Conversely, acupuncture at heterotopic acupoints, which utilize different spinal segments to innervate a visceral organ has been shown to induce gastrointestinal facilitation in complete spinal rats.”

Methods – Intravesical pressure recording. – Need to be specifically addressed!

1. It is still NOT clear to me how the different contractile states (active vs static) of the bladder is achieved and maintained in this experiment. Did the authors do something to create and maintain these states, OR, does the bladder go into these states by themselves? Since the state of the bladder is critical to the hypothesis and experiments in this paper, it is critical for the authors to explain how different states of the bladder are maintained. I could not find the answer to this question anywhere in this draft.

Answer: In “methods”, we mentioned “A manometric balloon was inserted into the bladder, filled with approximately 0.5 mL warm water, and was connected to polyethylene tubing, providing a pressure of approximately 100 mmH₂O”. At this
pressure, the bladder’s active and static state automatically switched in between them. We did not further control the states through increasing water or decreasing water.

**Results** – much improved, suggestion below is not mandatory

1. The last paragraph is titled “MA produced dual effects on the intravesical pressure,” while the majority of this paragraph talked about bladder motility (MI). I suggest adding “and motility” to the title sentence and also add a Part B) to Figure 3, in a similar format as the original Figure 3, but plot MI on the vertical axis rather than bladder pressure. This way, your paragraph will match its title as well as its picture.

Answer: We thank you for your suggestion. As we mentioned in the response to your comment we submitted last time, intravesical pressure is the parameter which represents the bladder motility. In another word, the bladder motility could be expressed through the intravesical pressure. This is why we use intravesical pressure in the title here. If we add “and motility”, that will be repetitious. Figure 3 is the pooled data shown in Figure 1 and 2. We pooled them together to show clearly which acupoint has dual effects on bladder motility, not new data.

**Discussion** – overall much improved, except for the very last sentence.

1. Last sentence: “Here, we would also like to note that the results of acupuncture at the heterotopic acupoints in hind limbs were different than a previous report [42]. These differences might be due to the degree of 301 bladder distension (half-filling of the bladder in this study vs how much in the other study) or different stimulations (MA vs electrical??).”
Answer: The differences between our experiment and the reference 42 are as follows: (1) In our experiment, we used manual acupuncture; but they used electrostimulation. (2) In our experiment, the bladder pressure is approximately 100 mmH₂O at which the bladder’s active and static state automatically switched in between them. But in their experiment, the pressure was changed through increasing or decreasing water from 100 mmH₂O to maximum of 300 mmH₂O. (3) In our experiment, MA at heterotopic acupoint didn’t produce excitatory or inhibitory effect when the bladder is active but produced excitatory effect when the bladder is static. In their experiments, stimulating hindlimb (similar to heteropic acupoints) could induce excitatory and inhibitory effects when the bladder pressure was low or high. To know the differences well, we also provided additional references as the below.

References:


Conclusion: Fine.

Overall: one minor comment. You redundantly add the Chinese name to each of your acupuncture point throughout your paper. No need to do that. Once you introduce the points of your choice in Materials and Methods under “Acupuncture Stimulation,” you
can just use the standardized English name alone, ie “RN3,” instead of “RN3 (Zhongji)” throughout the rest of your manuscript. It is less cumbersome and everyone reading your paper is expected to know what RN3 is.

Answer: Thanks for your suggestion. We already deleted redundantly added Chinese name of acupoints.