Author's response to reviews

Title: A complementary method to detect qi vacuity

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Author's response to reviews: see over
Dear Iratxe Puebla:

Here we send a revised paper entitled “A complementary method to detect qi vacuity” (MS: 57596242254822). We have revised the content of paper according to the requests of journal and reviewer’s opinions. The revised part was written by red color word. Thank you!

Ming-Feng Chen 12-30-2008

The answers for reviewer’s opinions are as following:

Response to reviewer one:
1. Abstract: It should clearly be stated that it is the authors’ opinion that bio-energy can be measured by skin conductance.
   Answer: We have stated that “It also suggests that the bio-energy of human body can be measured by skin conductance.” in the last 2nd line of page 2 in revised paper.
2. Abstract: Please add numerical values (e.g. mean value of ARDK and a p-value for the significance).
   Answer: We have added numerical values for mean value of ARDK accompanied with a p-value for the significance as following: We found that, the mean value of ARDK in patients with QV (30.2 ± 16.8 μ A) were significantly lower than those in healthy controls (37.7 ± 10.8 μ A; P < 0.001). A negative correlation was found between the mean value of ARDK and the score of qi deficiency (r-coefficient = -0.61; P < 0.001). The above change was described in lines 14-17 of page 2 in revised paper.
3. Introduction: Please give name, city and country of the manufacturer of the ARDK device; also which model and which software was used.
   Answer: The name, city and country of the manufacturer of the ARDK device, described in lines 16-17 of page 3 in revised paper, was as following: Automatic Reflex Detecting System (ARDK) is an electrical device, made by Good News Natural Medicine Biotech Co., Ltd., Taichung, Taiwan, to detect the skin conductance between left hand and each one of 24 special acupuncture points of meridians on both wrists and ankles. There is only one model for ARDK device, and the software was developed by the manufacturer itself. Therefore, we did not describe the model of ARDK device and the software.
4. Materials and methods, subjects: is “y/o” supposed to mean “years old”?
   Answer: Yes, it means years old. We have changed the words, in lines 5-8 of page 4 in revised paper.
5. Materials and methods, study procedure and/or procedure of ARDK test. Please check which of the humidity value is correct-45 or 55%.
   **Answer:** ARDK test was performed in a room with humidity at 55%. We have corrected the value in line 2 of page 5 in revised paper.

   **Answer:** It is 1997. We have corrected it in last 2nd line of page 9 in revised paper.

7. Figure1: Please give the unit of the mean value of ARDK and explain additionally in the text what exactly you have measured. Same goes for Figure 2.
   **Answer:** The unit of the mean value of ARDK is $\mu$ A. We have revised the Fig.1 and Fig.2 with unit of ARDK value in long-axis. We also have added the unit of ARDK in text: last 2nd line of page 6 and first line of page 7 in revised paper.

8. Figure 2: If possible please eliminate the negative values at both axes.
   **Answer:** We have revised Figure 2 and eliminated the negative values at both axes.

Response to reviewer two:

1. The symptoms of Qi deficiency include spontaneous sweating. In general, increased sweating might enhance the electrical conductance in the skin. However, this study showed that the severity of QV produced the decreased skin electrical conductance. The author should address this point.
   **Answer:** Patients with QV may have spontaneous sweating, which can increase the skin conductance. However, in this study we did not find a significant correlation between the score of spontaneous sweating and the decreased mean value of ARDK. The discrepancy may be due to the low incidence of spontaneous sweating in studied subjects and the situation of subjects during ARDK measurement. Usually, intermittently spontaneous sweating appears in patients with severe QV during movement. Only 23% of our studied subjects had a complaint of spontaneous sweating during movement. None of them had occurrence of spontaneous sweating during ARDK measurement under a relaxed status lying on a bed after taking a rest for more than 20 minutes. The above description has been addressed in the last lines 1-9 of page 10 and lines 1-2 of page 11 in revised paper.

2. ARDK is an electrical device to detect the skin conductance of 24 special acupuncture points of meridians on wrists and ankles. Are these points source points? It is necessary to specify the location of the acupuncture points with figure. Moreover, in order to understand the device, it would be better to display the
Answer: The acupuncture points, used by ARDK, are traditional acupuncture points commonly used by Chinese medicine doctors. They are LU9, PC7, HT7, SI4, SJ4, LI5, SP3, LR3, KI3, BL65, GB40 and ST40 in bilateral wrists or ankles. We have described these acupuncture points in the last lines 2-3 of page 5 in revised paper. However, due to much figures for presentation we did not show the figures to present the location of these acupuncture points. On the other hand, we have showed a figure for ARDK device (Fig. 1), and described the elements in Figure legend and in last lines 1-2 of page 5 and lines 1-7 of page 6 in revised paper.

3. ARDK calculates the mean value of skin conductance in 24 acupoints automatically. However, it is possible that the change of skin conductance in the specific meridian could represent the specific illness. It is necessary to compare the skin conductance in each meridian.

Answer: It is possible that the change of skin conductance in the specific meridian would represent the specific illness. In this study, most of studied patients were carriers of hepatitis B or C with normal liver function. We compared the skin conductance of liver meridian with those of other 11 meridians in these subjects. However, no significant difference was found in skin conductance between liver meridian and other meridians (data not shown). Therefore, we could not identify the above hypothesis. The above description has been addressed in lines 10-15 of page 11 in revised paper.

4. Healthy subjects might also have the symptoms of Qi vacuity including fatigued spirit with lack of strength, shortness of breath accompanied by laziness to speak, spontaneous sweating, enlarged tongue with or without dental impressions and a vacuous and weak pulse. The author had better compare the patients and healthy subjects.

Answer: We have compared the score of QV between patients and control subjects. The mean total score of QV in patients with QV (7.9 ± 5.3 points) was significantly greater than that of healthy controls (1.5 ± 1.4 points; P < 0.001). The above results has been added into the item of results in lines 17-21 of page 6 in revised paper.

5. The decreased mean value of ARDK with the scores of 5 symptoms/signs and age as independent variable showed that, only the degree of fatigue and weak pulse have contributed to the decreased mean value of ARDK. The author should address the possible reasons for other three symptoms.

Answer: Why the scores of other symptoms (such as spontaneous sweating, weak voice and enlarged tongue) have not contributed to the decrease of skin
conductance in patients with QV is not known. In general, patients with QV may have spontaneous sweating, which can increase the skin conductance. However, in this study we did not find a significant correlation between the score of spontaneous sweating and the decreased mean value of ARDK. The discrepancy may be due to the low incidence of spontaneous sweating in studied subjects and the situation of subjects during ARDK measurement. Usually, abruptly spontaneous sweating appears in patients with severe QV during movement. Only 23% of our studied subjects had a complaint of spontaneous sweating during movement. None of them had occurrence of spontaneous sweating during ARDK measurement under a relaxed status lying on a bed after taking a rest for more than 20 minutes. The facts that the skin conductance in patients with QV did not correlate with the score of weak voice or enlarged tongue may be due to a more complex mechanism which induced these two symptoms rather than the decrease of sympathetic nervous activity. The above discussion has been described in lines 18-17 of page 10 and lines 1-9 of page 11 in revised paper.

6. There might be a confounding factor of gender. However did you control this possible factor?

**Answer:** In this study, the healthy controls were 40 males and 49 females, and the studied patients were 83 males and 110 females. Female subjects were more than male subjects in both healthy controls and studied patients. However, there was no significant difference in the mean value of ARDK between male group (38.2 ± 10.2 μA) and female group (36.6 ± 10.5 μA) in healthy controls. Similarly, there was also no significant difference in the mean value of ARDK between male group (31.2 ± 15.2 μA) and female group (30.4 ± 13.5 μA) in patients with QV. These results suggest that gender may have not a important role in the skin conductance of subjects. The above results have described in lines 22-25 of page 6 and lines 1-2 of page 7 in revised paper.