J Acupunct Meridian Stud 2015;8(4):209–212

Available online at www.sciencedirect.com

Journal of Acupuncture and Meridian Studies

journal homepage: www.jams-kpi.com

PERSPECTIVE

Acupuncture Meridian of Traditional Chinese Medical Science: An Auxiliary Respiratory System

Liang-Ju Zhao*

College of Power Engineering, Chongqing University, Chongqing, China

Available online 11 June 2015

Received: Mar 21, 2015
Revised: Apr 14, 2015
Accepted: Apr 14, 2015

KEYWORDS
acupuncture meridian system;
auxiliary respiratory system;
future study;
physiological regulation

Abstract
The acupuncture meridian system (AMS) is the key concept of Traditional Chinese Medical Science (TCMS). It is a natural network formed by the tissue space that connects human viscera and skin. In this article, a new hypothesis that the AMS is an auxiliary respiratory system is presented. The AMS collects the CO_2 that is produced by tissue supersession and that cannot be excreted via blood circulation, and discharges the CO_2 through the body's pores, thus preventing a pressure increase in the internal environment. Thus, local blood circulation will not be blocked, and the body will remain healthy. In addition to neuroregulation and humoral regulation, AMS regulation is an important method of physiological regulation. Furthermore, the pathological principle of the AMS, therapies of TCMS, and the excellent future of the AMS are discussed.

1. Introduction

Traditional Chinese Medical Science (TCMS), which is based on the acupuncture meridian system (AMS) [1,2], has been used in clinical practice for >2500 years. Due to its efficacy, acupuncture has been recommended by the World Health Organization in 1980 as an effective alternative therapy for 43 different disorders. Although the AMS plays a very important role in the supersession process, it is very difficult to explain the working principle behind this process using modern Western medical science. In the past decades, many researchers have studied different aspects of the AMS. Fujita [3] (Japanese), Zhu and Hao [4] and Zhang [5] (Chinese), and Chang [6] (Taiwanese) have presented their hypotheses on the AMS.

According to Fujita's [3] study, the essence of the AMS has been recognized as the movement of body fluid out of ducts driven by the constriction of muscles, and the structure of the AMS is the gap between the connective tissue. In the book

* Corresponding author. College of Power Engineering, Chongqing University, Chongqing 40044, China.
E-mail: zhaolj@cqu.edu.cn.

pISSN 2005-2901 eISSN 2093-8152
http://dx.doi.org/10.1016/j.jams.2015.04.004

edited by Zhu and Hao [4], many research works are summarized, and the existence of the AMS is proved by the propagation of sensation along the AMS and other evidence. In the book written by Zhang [5], the AMS is recognized as a water channel with a low flow resistance and with the functions of passing nutrition, expelling waste of supersession, and delivering physical or chemical information. Chang [6], based on the chaotic wave theory of fractal continuum, confirmed the AMS to be a network of neurovascular bundles and their smaller branches. Although great progress has been made, a perfect theory of the AMS is still not available. What is an acupuncture meridian, and what does it consist of? What is the physiology principle? What is the pathology principle? These are the three main unsolved problems related to the theories of the AMS.

In this article, a new AMS hypothesis that tires to solve the three main unsolved problems of the AMS will be presented. The relation between the AMS and disease, and the relation between the AMS and the therapies of TCMS will be discussed. Finally, the expected excellent future of the AMS will be presented.

2. AMS hypothesis of an auxiliary respiratory system

Based on past studies, we will present a new hypothesis of the AMS through a comprehensive analysis.

2.1. Auxiliary respiratory system of the AMS

The AMS of Huangdi Neijing is an auxiliary respiratory system separated from the other systems of the human body. Differing from blood vessels or the windpipe, the AMS is a net of gas channels that are naturally formed by gaps within tissues. Acupuncture points exist in the lacunose parts of the AMS, which consist of a larger space to contain more gas. The AMS consists of many meridians connecting each other and connecting with collaterals, which link internal viscera into an interactional ensemble. As shown in Fig. 1, the AMS collects the CO_2 produced by tissue supersession that cannot be excreted by blood circulation, and discharges the CO_2 through the pores of the skin. Primarily, CO_2 flows in the AMS with a little steam and oxygen. In special cases, such as a serious disease, the AMS will act as a channel through which other supersession products can be excreted. Most of the CO_2 produced by supersession is discharged by the lungs through blood circulation, with a little being discharged through the skin by the AMS. Because the AMS fine tunes respiration, it is an auxiliary respiratory system. The AMS is helpful in maintaining the acid—base balance of the internal environment because it can discharge CO_2.

As a channel connecting the viscera and the outer environment, in addition to discharging CO_2, the acupuncture meridian adjusts and maintains the stability of the local pressure of the internal environment. When the body is diseased, supersession will enhance, and the local pressure of the internal environment will rise due to increasing levels of CO_2. Although local blood circulation will be blocked by the pressure rise near a blood capillary, local pressure will be decreased after CO_2 has been discharged through the AMS, and microblood circulation will be free,

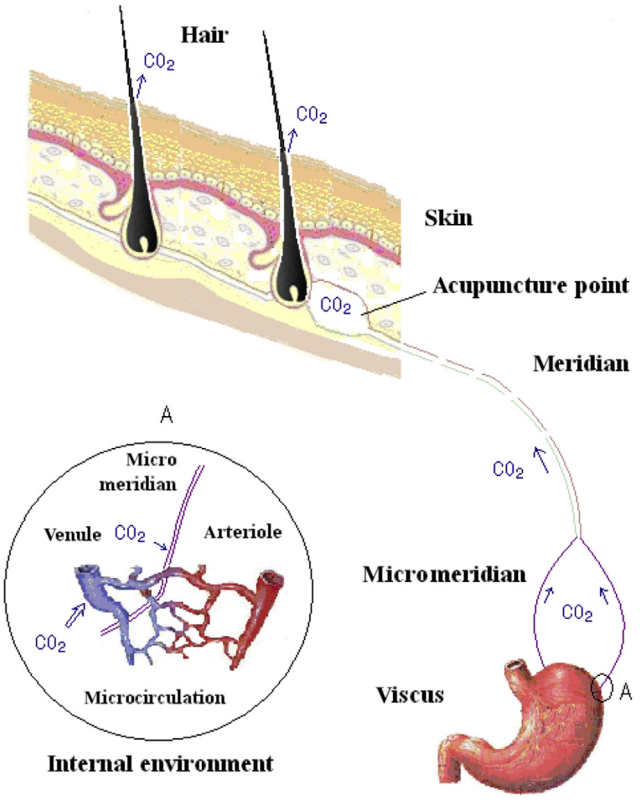

Figure 1 Relation between the AMS, skin, and viscus. AMS = acupuncture meridian system.

which will maintain the supersession and help the immune system to work normally. The relationship between microblood circulation and the microacupuncture meridian is shown in the enlarged view of point A in Fig. 1.

The AMS consists of many microchannels, on which there are some wider cavities and joints, called acupuncture points. When the volume of CO_2 in the acupuncture points increases, the body will feel swollen, acidic, and painful, due to increased gas pressure and increased concentration of H^+ resulting from the chemical reaction between CO_2 and H_2O.

2.2. Pathological principle of the AMS

The internal environment is the living space of cells, where supersession occurs. Cells get oxygen and nutrition from the internal environment, and discharge CO_2 and waste through it to the internal environment. In general, we consider that CO_2 will be discharged totally by the lungs through blood circulation. Acting as an auxiliary respiratory system, the AMS carries the CO_2 left in the blood circulation and expels it through the pores of the skin. A very important role of the AMS is to adjust the physiological function of the body. A schematic figure of the relation between the AMS and blood circulation is shown in Fig. 2.

It is difficult to explain the pathological mechanism of some intractable diseases using modern medical science, however, the explanation becomes easy when the hypothesis of the AMS is used. When the viscera develop inflammation, supersession enhances and more CO_2 is produced. If that CO_2 is not discharged in time, local pressure will rise and local