

Electrical Characteristics Analysis of Biological Active Points Using Real-Time Measuring System

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(Received January 17, 2007; accepted May 16, 2007)

Key words: biological active points, acupuncture point, reactance, resistance, capacitance, moxa, characteristic frequency, MEMS

Electrical impedance measurement has been extensively used to study biological systems. These studies generally aim to correlate electrical parameters with tissue structure or physiological events. By extending electrical impedance measurement can obtain various type of information, one of which is biological active point (BAPs: PC6, PC5 and ST-36) information. BAPs (acupuncture points) are specific places in the human body, related to disease conditions. When a needle, moxa, or other implement is applied to a BAP, symptoms related to that point improve. In this paper, BAP measurement can be illustrated by a simple model of an equivalent electrical circuit whose results correlate well with experimental results. The values of the chosen components were determined to be appropriate for the equivalent circuit, using a calculator. According to our experiment result, the reactance and frequency characteristics of BAPs appear different from those of the surrounding skin. The resistance of BAPs are 3–10 times less than those of non-BAPs. Also, the characteristic frequency range of BAPs is 15–30 Hz higher. In this paper, a unique three electrode measurement for distinguishing between BAP and non-BAPs with good precision was proposed. Using the proposed model, a method of realizing the resistance and capacitance of BAPs was presented. The result indicates the possibility of treating the concept of BAPs more objectively.

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