



從針刺之生理現象印證經絡學說

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摘要

為了證實傳統中醫的經絡循行如環無端理論以及陰經與陽經扮演不同的角色，我們設計兩個實驗來驗證這個理論。實驗一，總共38個女性自願者被研究，她們的年齡介於21到33歲之間。甲襞微循環紀錄前先放鬆20分鐘，右手的高度與心臟平行，甲襞微循環紀錄是藉一個 Laser Doppler anemometer (the capillaroscopy system CAM1)。針灸的針分別插入右側和左側的外關，而右手的甲襞微循環於針刺前期、針刺期和針刺後期分別被紀錄；實驗二，總共20位健康的自願者被研究，他們的年齡介於20-40歲之間，右手掌和手背的皮膚血流和皮膚溫度藉著一個 Laser doppler perfusion and temperature monitoring system (DRT4, Moor Instruments Inc.)於假針刺、手捻針、2 Hz電針和2 Hz經皮電神經刺激前、刺激中和刺激後分別被紀錄。結果顯示針刺右側外關或左側外關都能改變右側中指甲襞微循環的平均紅血球的流速。假針刺、手捻針、2 Hz電針和2 Hz經皮電神經刺激對右手掌的皮膚溫度的變化沒有不同，但2 Hz電針比假針刺、手捻針和對於針刺前期和針刺期間手背的皮膚的溫度有較大的變化。

結論，我們的結果支持傳統中醫的經絡理論。氣在經絡的循行如環無端以及陰經和陽經扮演不同的角色。

From physiological phenomenon of acupuncture to prove the theory of meridian

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Abstract

In order to proof the meridian theory of Traditional Chinese Medicine (TCM), the Qi circulates in meridian is no end as a circle and the physiological role between Yin meridian and Yang meridian is different. We design two experiments to prove the theory. Experiment one, a total 38 healthy female volunteer were studied, and their ages were from 21 to 33 years. Each subject was allowed to relax for 20 min prior to the Nail-fold microcirculation recordings and the height of the right hand was parallel to the heart and the middle finger was fixed to an attached pad for Nail-fold microcirculation recordings by a Laser Doppler anemometer (the capillaroscopy system CAM1). The acupuncture was applied to right and left Waiguan, respectively. The microcirculation of right middle finger nail-fold microcirculation was recordings, respectively, before, acupuncture and post-acupuncture period; Experiments two, a total of 20 healthy volunteers were studied. Their ages ranged from 20 to 40. Cutaneous blood flow and temperature recordings of right Hand's dorsum and palm were recordings by a Laser doppler perfusion and temperature monitoring system (DRT4, Moor Instruments Inc.) before, during and psot sham acupuncture (SA), manual acupuncture (MA), 2 Hz electroacupuncture (2 Hz EA) and 2 Hz transcutaneous electric nerve stimulation (TENS) applied to bilateral Zusanli and Shangjuxu acupoints. Results indicated that both acupuncture applied to right or left Waiguan induce the changes of mean red blood cell velocity of nail-fold microcirculation, and the differences of cutaneous temperature of the right hand's palm were not significantly different among the SA, MA, 2Hz EA, and 2Hz TENS sessions. However, the difference in cutaneous temperature of the



right hand's dorsum between AP and BP was greater in the 2Hz EA session than in the SA and MA sessions.

In conclusion, our results supported the meridian theory of TCM that the Qi circulation in meridian is no end as a circle and the fundamental differences between Yi and Yang.