

探討陽陵泉穴針刺前後得氣與 體感覺誘發電位之變化

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一、摘要

針刺穴位時之「得氣」為針刺有效之必要條件，典籍所謂得氣又稱針感，即進針後，針下有空豁無物之感，應通過捻轉、提插等手法，使針下逐漸產生沉、澀、緊，且受針者的針刺部位有痠、麻、重、脹或涼、熱等異常感覺，稱之為得氣。^(1,2,3,4,5,6) 然而只靠醫者覺得針下沉緊和病者出現痠、麻、重、脹等感覺，未能有實驗上之檢驗數，本研究盼能以體感覺誘發電位之變化對得氣做進一步的解釋，故以陽陵泉穴探討針刺前後，得氣與未得氣，在體感覺誘發電位之變化，比較其潛期及振幅之變化，得氣以往之研究亦有報導，但均偏重於針刺後局部肌肉收縮及肌電位之變化，且以動物實驗為主。^(7,8)

本研究以正常男、女共20名，在這正常者20名之腰椎第5節段（L₅ Segment）之位置利用電刺激器刺激，然後在頭皮CZ後二公分之位置放置——記錄電極，兩眉稍上之位置放置——參考電極，所得到誘發電位，記錄其潛期（Latency）及振幅（Amplitude），並用針刺在同側陽陵泉之穴位，比較其針刺前及針刺後未得氣及得氣之潛期及振幅之變化，結果顯示針刺後未得氣比針刺前振幅變小（ $P < 0.01$ ），又得氣者比未得氣者振幅更小（ $P < 0.01$ ），且針刺得氣後之潛期比未得氣之潛期長（ $P < 0.01$ ），故本研究證明針刺前及針刺得氣與否，確實在體感覺誘發電位之變化有顯著之相關性，以此來說明針刺止痛及針刺原理則有待進一步探討。^(9,10,11,12,13)

二、材料與方法

1.材料：

本研究乃利用美國製Codwell 7400誘發電位及肌電圖儀器、電刺激器、電極、並選用32號無菌毫針及正常之男、女共20名⁽¹⁴⁾。

2.方法：

在正常者20名之腰椎第5節段（L₅ Segment）之位置利用電刺激器刺器，然後在頭皮CZ後二公分之位置放置一記錄電極，於兩眉稍上之位置放置一參考電極，所得一誘發電位，記錄其潛期（Latency）及振幅（Amplitude），並針刺在同側陽陵泉之穴位，比較其針刺前及針刺後得氣及未得氣之潛期及振幅之變化。^(15,16)

本研究將所測得之20個案誘發電位之振幅與潛期如（表一、二），加以統計分析，並檢定其(1)針刺前與針刺後未得氣(2)針刺前與針刺後得氣(3)針刺未得氣與針刺後得氣等之潛期與振幅變化，是否有顯著意義。^(17,18)

表一：20個案之陽陵泉穴針刺前、未得氣、得氣後之振幅變化

個案	振幅 (uv)	針刺前 (SIZE)	未得氣 (SIZE)	得氣後 (SIZE)
1		2.89	2.81	2.65
2		2.03	1.87	1.56
3		1.64	1.32	0.70
4		2.10	1.40	1.32
5		3.43	2.34	2.03
6		3.75	3.43	3.12
7		4.92	4.53	4.45
8		2.34	2.26	1.01
9		1.71	0.85	0.78
10		2.03	1.48	1.25
11		1.17	1.09	1.01
12		2.34	1.40	1.09
13		1.87	1.56	0.78
14		1.64	0.25	1.01
15		1.71	1.71	1.56
16		2.96	1.87	2.42
17		3.87	3.82	2.90
18		2.34	1.48	1.32
19		2.57	2.42	1.71
20		1.64	1.32	1.17

表二：20個案之陽陵泉穴針刺前、未得氣、得氣後之潛期變化

個案 \ 潛期 (ms)	針刺前 (TIME)	未得氣 (TIME)	得氣後 (TIME)
1	51.25	43.33	42.50
2	47.08	45.83	45.41
3	43.75	44.58	43.33
4	43.33	43.33	43.33
5	56.25	48.33	48.75
6	41.25	41.66	41.66
7	40.00	40.41	41.66
8	52.50	52.08	52.91
9	47.50	49.16	50.00
10	60.00	52.50	51.66
11	44.16	54.16	65.41
12	46.25	49.16	47.91
13	49.58	52.09	51.66
14	46.66	38.75	38.75
15	43.75	45.00	45.00
16	41.66	43.75	42.50
17	42.93	43.33	42.41
18	46.25	46.66	46.25
19	63.75	45.00	44.16
20	42.91	47.50	42.91

三、結果

將所蒐集的20個案，用針刺在同側陽陵泉之穴位，比較其針刺前及針刺後未得氣及得氣之潛期及振幅之變化，加以統計分析後，所得的結果：針刺前振幅為 2.4475 ± 0.940 ，未得氣振幅為 1.9605 ± 1.038 ，得氣後振幅為 1.6920 ± 0.969 ，未得氣潛期為 46.3305 ± 4.242 ，得氣後潛期為 46.4085 ± 5.932 ，所以未得氣振幅比針刺前振幅小（ $P < 0.01$ ），得氣後振幅比針刺前振幅更小（ $P < 0.01$ ），得氣後振幅比未得氣振幅更小（ $P < 0.01$ ），得氣後潛期比未得氣之潛期更長（ $P < 0.01$ ）如（表三），所以本研究證明針刺前及針刺得氣與否在體感覺誘發電位之變化是有相關性的。⁽¹⁸⁾

表三：

UV & MS		MEAN \pm SD	P值
1	針刺前振幅	2.4475 ± 0.940	$P < 0.01$
	未得氣振幅	1.9605 ± 1.038	
2	針刺前振幅	2.4475 ± 0.940	$P < 0.01$
	得氣後振幅	1.6920 ± 0.969	
3	未得氣振幅	1.9605 ± 1.038	$P < 0.01$
	得氣後振幅	1.6920 ± 0.969	
4	未得氣潛期	46.3305 ± 4.242	$P < 0.01$
	得氣後潛期	46.4085 ± 5.932	

四、討 論

本研究在體感覺誘發電位振幅與針刺前後得氣與否之變化有明顯差異，且未得氣與得氣之潛期 $P < 0.01$ 也有顯著差異，故以此實驗證明針刺與體感覺誘發電位有顯著相關性。盼能進一步針刺環跳、足三里……等臨床重要穴位來探討不同穴位得氣、未得氣之體感覺誘發電位之變化，最後再以電針方式，比較相同穴位，電針及傳統手法之針刺，得氣與未得氣之體感覺誘發電位之變化。以往的針刺得氣研究，只探討局部肌肉收縮的作用及其肌電圖的變化，盼本研究能繼續進行，以體感覺誘發電位之變化來探討不同穴位、不同手法（電針、傳統針刺手法）及臨床病例療效與等相關研究，以進一步解釋針灸機轉，並供臨床針灸醫師之參考應用⁽²⁰⁾。

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A Study on Changes in Somatic Sensation-engendered Potential Induced by Chi Acquisition from Needling on the Yang-ling-chuan Acupoint

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ABSTRACT

The "chi acquisition" condition is essential for ensuring acupunctural effectiveness. As described in medical classics, it is also known as a "needling sensation" marked by a sensation of hollowness below the needle after insertion of the needle, which turns into a sagging, harsh, and tight sensation thereby the patient will experience an achy, numbing, weighty, swelling or cooling and hot sensation. The condition with such an extraordinary sensation is called "chi acquisition". However, we cannot obtain experimental data merely relying on the physician's sagging and tight sensation below the needle or the patient's achy, numbing, weighty and swelling sensation. Therefore, with this study we intended to make further exploration for explaining the changes in the somatic sensation-engendered potential induced before and after needling on the yang-ling-chuan acupoint and to compare changes in the latency and amplitude of the potential before and after chi acquisition. In the past there were also reports on "chi acquisition", but the reports were concentrated on post-needling local muscular contractions and muscular potential changes, and used animals for the experiments.

This study used a total of 20 normal males and females as the testees. On the fifth lumbar vertebrae (L5 segment) of these normal testees, an electric stimulator was fixed, a recording electrode was placed at a site 2 cm posterior to CZ of the scalp and a reference electrode was placed at the ends of both eyebrows. The latency and amplitude of the induced potential were recorded by needling on

the yang–ling–chuan acupoint on the same side to compare changes in the latency and amplitude before and after needling and chi acquisition. The results showed that in the absence of chi acquisition the amplitude was smaller after than before needling ($P < 0.01$) and that in the presence of chi acquisition the amplitude was even smaller than without chi acquisition ($P < 0.01$); Besides latency after chi acquisition was longer than before chi acquisition ($P < 0.01$). Hence, this study has verified that there is marked relevance in the changes of somatic sensation–engendered potential before and after needling with and without chi acquisition. Whether we can interpret the mechanism of analgesia and the principle of acupuncture in terms of this finding requires further study.