

# 针灸对单纯性肥胖患者下丘脑-垂体-肾上腺轴的作用

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**内容提要** 为了解单纯性肥胖患者下丘脑-垂体-肾上腺轴系统的功能,以及针灸对其作用,我们观察了针灸前后39例单纯性肥胖患者的肥胖指标、血中脂质水平,以及血中ACTH和唾液CS含量的变化。结果表明,单纯性肥胖患者下丘脑-垂体-肾上腺系统功能偏低,针灸治疗在取得减肥效应及脂质代谢良性调整作用的同时,提高了患者下丘脑-垂体-肾上腺系统的功能。提示:针灸可能通过提高下丘脑-垂体-肾上腺系统的功能实现其减肥效应。

**关键词** 针灸 减肥 促肾上腺皮质激素 唾液皮质醇

为了解单纯性肥胖患者下丘脑-垂体-肾上腺轴系统的功能以及针灸对其作用,我们观察了针灸前后39例单纯性肥胖患者的肥胖指标、血中脂质水平以及血浆促肾上腺皮质激素(ACTH)和唾液皮质醇(SCS)含量的变化,从中探讨针灸对患者的下丘脑-垂体-肾上腺皮质轴的作用,以便阐明针灸减肥的作用机理。

## 临 床 资 料

一、病例来源:本组病例来源于1989年5~6月,我院针灸减肥专家组在镇江中医院开设的专家减肥门诊患者。本组39例单纯性肥胖患者,男性3例,女性36例;年龄最小21岁,最大50岁,平均年龄36.2岁;病程最短1年,最长34年,平均为12.3年。并发高血压和高脂血症者9例,单纯并发高脂血症者21例,单纯并发高血压者3例,并发冠心病和胆石症者各2例,并发不孕症和月经不调者各1例。

二、辨证分型结果:根据中医辨证的原则,本组病例共分为8型。消谷善饥,口渴喜饮,舌苔微黄,脉多滑数者为胃中蕴热型(13例);大便秘结,脘腹胀满,舌苔黄腻,脉象弦紧者为肠燥便结型(10例);性情急躁,眩晕头痛,

舌红脉弦者为肝阳上亢型(8例);脘腹胀闷,肢体困重,小便短赤,苔腻脉濡者为湿困脾胃型(3例);口渴咽干,便干尿少,舌红少苔,脉细而数者为阴液耗伤型(2例);少气懒言,乏力自汗,心悸失眠,舌淡脉细者为气阴两伤型(1例);腰痠腿软,阳萎阴寒,乏力肢肿,舌淡脉细者为脾肾阳虚型(1例);脘腹胀闷,头晕乏力,尿少肢肿,舌淡脉濡者为肺脾气虚型(1例)。

三、诊断标准:见文献<sup>[1]</sup>,全部患者均符合此标准。

## 治 疗 方 法

一、分型施治:胃中蕴热治以清胃泻热,耳穴取外鼻、肺;体穴取内庭、曲池、上巨虚等。肠燥便结治以润肠通便,耳穴取大肠、肺;体穴取天枢、支沟、曲池等。肝阳上亢治以平肝潜阳,耳穴取神门、肝;体穴取曲池、太冲、侠溪等。湿困脾胃治以化湿和中,耳穴取脾、肾;体穴取中脘、水道、丰隆等。阴液耗伤治以养阴生津,耳穴取三焦、大肠;体穴取合谷、曲池、复溜等。气阴两虚治以养阴益气,耳穴取肾、内分泌;体穴取膻中、太溪、阴谷等。

脾肾阳虚治以补肾健脾益气,耳穴取肾、脾;体穴取脾俞、肾俞、太白(灸)等。肺脾气虚治以补脾养肺益气,耳穴取脾、肺;体穴取脾俞、肺俞、太白(灸)等。

随证加减:食欲亢进耳穴加外鼻,体穴加内庭;心悸气短耳穴加心、肺,体穴加神门、内关;便秘耳穴加大肠,体穴加天枢、支沟;尿少耳穴加尿道,体穴加水分、阴陵泉;月经不调耳穴加内分泌、肾,体穴加地机、血海;自幼肥胖耳穴加肾,体穴加肾俞、三阴交;产后肥胖耳穴加内分泌,体穴加石门、曲泉。

针灸方法:耳穴埋藏揸针或王不留行籽,胶布固定,每日自行按压3次,5日更换1次,6次为1个疗程;针灸体穴隔日1次,每次留针20分钟,12次为1个疗程。由于肥胖患者皮脂较厚,某些穴位需用2~3寸或3寸以上毫针,针时方可得气。实者以泻法为主,虚者多用补法,虚寒者可加温灸。耳穴埋针与针灸体穴同时进行,疗程均为1个月。

## 二、观察方法

1. 肥胖指标:疗程前后测量患者体重、身高、体围(胸围、腰围、臀围、股围)。采用国家体委科研所研制的皮脂厚度计,分别测量上臂肱三头肌、肩胛角下和腹壁的皮脂厚度。按照 Pauline S 等人报道的方法,计算出体脂百分率(F%)、肥胖度(A)和相对体重指数(WI)<sup>(2,3)</sup>。

2. 实验指标:疗程前后分别在晨8时患者空腹时取静脉血,促肾上腺皮质激素用 EDTA 抗凝,分离血浆后用 ACTH 放免药盒(法国)检测;测定血清甘油三酯(TG)和总胆固醇(TC)的含量;采用文献<sup>(4)</sup>方法测定高密度脂蛋白胆固醇(HDL-C)的含量。按照 Friede-Wald 公式求出极低密度脂蛋白胆固醇(VLDL-C)和低密度脂蛋白胆固醇(LDL-C)含量<sup>(5)</sup>。再计算出 TC/HDL-C, LDL-C/HDL-C 的比值和动脉硬化指数 $[AI = (TC - HDL-C) / HDL-C]$ <sup>(6)</sup>。患者于治疗前后,晨8时空腹静坐20分钟,温水漱口3次之后,自然吐出唾液2ml,立即将唾液置-20℃低温冰箱过夜,离心取上清液。按照文

献<sup>(7)</sup>方法测定SCS含量。

## 结 果

一、临床疗效标准、疗程及结果:疗效标准见文献<sup>(1)</sup>,本组患者经1个疗程的治疗后,显效15例(38.46%),有效20例(51.28%),无效4例(10.26%),总有效率为89.74%。针灸1个疗程前后相比,患者的体重,肱三头肌、肩胛角下和腹壁皮脂厚度,胸围、腰围、臀围和股围,腰臀比值,肥胖度,相对体重指数和体脂百分率均显著下降,经统计学处理均具有显著性差异, $P$ 均 $<0.001$ 。说明患者体脂减少与针灸作用有关。

二、患者针灸前后与健康人的血浆 ACTH 和唾液 CS 含量比较:见表1。

表1 患者针灸前后与健康人的血浆ACTH和唾液CS含量比较 ( $\bar{x} \pm S$ )

| 组别     | ACTH(pg/ml)          | SCS(ng/ml)                           |
|--------|----------------------|--------------------------------------|
| 正常 (A) | 25.65±24.75(52)      | 15.07±2.01(24)                       |
| 治疗 (B) | 18.59±12.26 $\Delta$ | 12.08±1.77 $\Delta\Delta\Delta$      |
| (C)    | 19.00±15.41          | 12.63±2.19 $\Delta\Delta\Delta^{**}$ |

注: B为针灸前, C为针灸后,下同;括号内为健康人数; A:B 或 A:C,  $\Delta P < 0.05$ ,  $\Delta\Delta P < 0.01$ ,  $\Delta\Delta\Delta P < 0.001$ ; C:B,  $*P < 0.05$ ,  $**P < 0.01$ ,  $***P < 0.001$ (下同)

由表1可见,针灸前后患者血中ACTH和SCS含量均低于正常水平;针灸治疗后,患者血中ACTH和SCS含量均呈现升高,其中SCS含量的升高具有显著性差异, $P < 0.01$ 。说明针灸可以增强肾上腺系统的功能。

三、患者血中ACTH和唾液CS含量变化与疗效的关系:见表2。

由表2所示,显效组治疗后血中ACTH和SCS均回升,与治疗前比较, $P < 0.05$ 、 $0.01$ ;有效组治疗后SCS及ACTH回升与治疗前比较, $P$ 均 $< 0.05$ ;无效组SCS于治疗后未见回升,而ACTH反而下降, $P < 0.05$ ,说明患者血中ACTH和SCS含量的回升与疗效有关。

四、患者针灸前后和健康人脂质指标的比较:见表3。针灸治疗前患者TC、TG、VLDL

表2 患者血中ACTH和唾液CS含量变化  
与疗效的关系 ( $\bar{x} \pm S$ )

| 组别      |   | ACTH(pg/ml)        | SCS(ng/ml)         |
|---------|---|--------------------|--------------------|
| 显效 (15) | B | 23.00 $\pm$ 13.18  | 12.46 $\pm$ 1.77   |
|         | C | 29.25 $\pm$ 16.28* | 13.62 $\pm$ 1.74** |
| 有效 (20) | B | 12.55 $\pm$ 11.62  | 12.19 $\pm$ 1.55   |
|         | C | 13.09 $\pm$ 10.15* | 12.64 $\pm$ 1.80*  |
| 无效 (4)  | B | 26.50 $\pm$ 10.45  | 10.19 $\pm$ 1.47   |
|         | C | 12.00 $\pm$ 3.46*  | 8.93 $\pm$ 0.94    |

注: 括号内为例数, 下同

-C、TC/HDL-C、LDL-C/HDL-C和AI均高于正常水平,  $P < 0.05 \sim 0.001$ ; 针灸治疗后, 除HDL-C含量明显升高外其它脂质指标均出现明显地下降,  $P < 0.01 \sim 0.001$ 。提示针灸可以对抗患者的异常脂质代谢。

五、患者脂质含量变化与疗效的关系: 见表4。针灸治疗前后相比, 显效与有效组TC、TG、VLDL-C、TC/HDL-C、LDL-C/HDL-C和AI的下降及HDL-C的升高有显著差异, 而无效组TG、VLDL-C、TC/HDL-C、LDL-C/HDL-C、HDL-C、AI无显著

差异, TC、LDL-C差异不如显效及有效组明显。说明TC等脂质指标的下降及HDL-C的升高与针灸疗效有关。

## 讨 论

我们采用针灸治疗单纯性肥胖患者取得了良好的疗效。治疗后, 患者肥胖指标显著改善, 同时TC、TG、VLDL-C、TC/HDL-C、LDL-C/HDL-C和AI回降, 而HDL-C升高, 其回降与升高的程度与疗效有关。提示针灸对单纯性肥胖患者具有减肥效应以及调整脂质代谢的良性作用。Lipp U等人报道, TC/HDL-C、LDL-C/HDL-C的变化与动脉粥样硬化、冠心病的发病及严重程度呈显著的正相关, 计算其比值较单项指标具有更大的参考意义<sup>(8)</sup>。Gordin T等人报道, 血中HDL-C水平低下是发生动脉粥样硬化、冠心病和心力衰竭的危险因素<sup>(9)</sup>。因此, 针灸治疗可为防治单纯性肥胖患者并发心血管疾病提供一种有效的方法。

本实验以血中ACTH和唾液CS的浓度分别反映垂体和肾上腺皮质的功能, 针灸前单纯性

表3 患者针灸前后和健康人脂质指标的比较 ( $\bar{x} \pm S$ )

| 组 别   | TC                | TG                             | VLDL-C                        | HDL-C            | LDL-C             | TC/<br>HDL-C           | LDL-C/<br>HDL-C  | AI                           |
|-------|-------------------|--------------------------------|-------------------------------|------------------|-------------------|------------------------|------------------|------------------------------|
|       | (mg/dl)           |                                |                               |                  |                   |                        |                  |                              |
| 正常(A) | 181.60            | 113.00                         | 22.60                         | 56.80            | 100.30            | 3.27                   | 1.77             | 2.27                         |
| (165) | $\pm 33.50$       | $\pm 40.30$                    | $\pm 8.06$                    | $\pm 13.60$      | $\pm 33.50$       | $\pm 1.62$             | $\pm 2.46$       | $\pm 0.62$                   |
| 治疗(B) | 203.37            | 180.91                         | 36.25                         | 53.32            | 115.70            | 4.01                   | 2.40             | 3.11                         |
| (39)  | $\pm 54.10\Delta$ | $\pm 104.21\Delta\Delta\Delta$ | $\pm 20.83\Delta\Delta\Delta$ | $\pm 13.60$      | $\pm 54.66$       | $\pm 1.42\Delta\Delta$ | $\pm 1.58\Delta$ | $\pm 1.46\Delta\Delta\Delta$ |
| (C)   | 167.69            | 137.73                         | 27.96                         | 59.75            | 89.51             | 2.93                   | 1.40             | 1.89                         |
|       | $\pm 28.53^{***}$ | $\pm 58.95^{**}$               | $\pm 11.70\Delta^{**}$        | $\pm 14.74^{**}$ | $\pm 25.02^{***}$ | $\pm 0.70^{***}$       | $\pm 0.53^{***}$ | $\pm 0.68\Delta^{***}$       |

表4 患者脂质含量变化与疗效的关系 ( $\bar{x} \pm S$ )

| 组别      |   | TC               | TG               | VLDL-C           | HDL-C            | LDL-C             | TC/<br>HDL-C     | LDL-C/<br>HDL-C  | AI               |
|---------|---|------------------|------------------|------------------|------------------|-------------------|------------------|------------------|------------------|
|         |   | (mg/dl)          |                  |                  |                  |                   |                  |                  |                  |
| 显效 (15) | B | 192.9            | 200.33           | 40.04            | 46.78            | 124.87            | 4.35             | 2.96             | 3.35             |
|         |   | $\pm 59.60$      | $\pm 152.75$     | $\pm 30.57$      | $\pm 10.49$      | $\pm 70.34$       | $\pm 1.64$       | $\pm 2.15$       | $\pm 1.64$       |
|         | C | 154.89           | 137.95           | 27.58            | 59.40            | 78.14             | 3.25             | 1.59             | 2.17             |
|         |   | $\pm 31.55^{**}$ | $\pm 72.02^{**}$ | $\pm 14.41^{**}$ | $\pm 7.00^{**}$  | $\pm 29.85^{***}$ | $\pm 0.73^{***}$ | $\pm 0.58^{***}$ | $\pm 0.78^{***}$ |
| 有效 (20) | B | 215.25           | 164.43           | 30.07            | 58.66            | 113.19            | 3.79             | 2.06             | 2.97             |
|         |   | $\pm 63.21$      | $\pm 61.11$      | $\pm 12.19$      | $\pm 13.50$      | $\pm 45.83$       | $\pm 1.27$       | $\pm 1.02$       | $\pm 1.39$       |
|         | C | 176.13           | 126.27           | 26.06            | 68.48            | 81.71             | 2.72             | 1.27             | 1.66             |
|         |   | $\pm 23.50^*$    | $\pm 44.97$      | $\pm 8.89^{**}$  | $\pm 14.75^{**}$ | $\pm 22.05^{**}$  | $\pm 0.57^{***}$ | $\pm 0.49^{***}$ | $\pm 0.58^{***}$ |
| 无效 (4)  | B | 182.11           | 190.45           | 38.09            | 51.13            | 93.84             | 3.87             | 2.05             | 2.95             |
|         |   | $\pm 22.02$      | $\pm 34.26$      | $\pm 6.85$       | $\pm 16.29$      | $\pm 18.80$       | $\pm 1.35$       | $\pm 1.05$       | $\pm 1.30$       |
|         | C | 167.39           | 194.20           | 38.84            | 54.95            | 73.61             | 3.05             | 1.34             | 2.85             |
|         |   | $\pm 30.49^*$    | $\pm 43.24$      | $\pm 8.67$       | $\pm 8.42$       | $\pm 24.58^*$     | $\pm 0.58$       | $\pm 0.40$       | $\pm 1.30$       |



肥胖患者血浆 ACTH 浓度在正常范围的低值区,其唾液CS 浓度也低于正常组水平。说明单纯性肥胖患者的下丘脑-垂体-肾上腺系统的功能偏低,提示下丘脑-垂体-肾上腺系统功能低下可能是产生肥胖和脂质代谢异常的重要因素。针灸治疗取得减肥效应及调整脂质代谢的同时,患者血中ACTH和唾液CS 浓度呈现回升,且回升程度与疗效有关。似乎说明针灸可以调整单纯性肥胖患者下丘脑-垂体-肾上腺系统的功能,使之恢复正常。随着ACTH 水平回升,其在脂肪细胞中促进脂肪分解作用增强。CS 可调整机体糖、脂肪和蛋白质的代谢,而且使机体血管紧张度和反应性及心肌收缩力增强,从而提高机体应激能力。提示针灸可能通过提高患者下丘脑-垂体-肾上腺轴系的功能实现其减肥效应。

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## 解毒胶囊治疗急性细菌性痢疾324例观察

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为了寻找新的高效安全药物治疗急性细菌性痢疾(简称菌痢),近年来,我们将中药解毒胶囊试用于临床,收到较为满意的疗效。现报告如下。

**临床资料** 全部患者共 648 例,均按照辽宁省综合医院住院患者疾病诊断标准(辽宁省卫生厅,1988)确诊为急性菌痢。随机分成两组,每组324例。其中,治疗组男189例,女135例,年龄2~70岁,平均年龄33.6岁;对照组男183例,女141例,年龄1~75岁,平均年龄37.1岁。两组一般情况无显著差异。治疗组于服药前后分别作肾功能、肝功能、血常规等检查。

**治疗方法** 治疗组:口服解毒胶囊每日3次,每次成人量4~6粒(每粒相当生药量0.5g:明矾400mg,白头翁50mg,蛋黄油20mg,大豆30mg),小儿酌减。个别患者入院时呈高热电解质紊乱,可酌情给予补液及西药解热治疗。对照组:口服复方新诺明片,每日3次,每次1.0g,首次加倍;庆大霉素注射液8万u肌肉注射,每日2次或吡哌酸片,每次0.5g,每日3次,口服。对高热和电解质紊乱者,给予补液及

解热药物治疗方法同上。

**治疗结果** 按照1988年辽宁省综合医院住院病人疾病疗效评定标准,本组结果:(1)解毒胶囊治疗组324例,其中治愈302例(93.2%),有效21例(6.5%),无效1例(0.3%),总有效率99.7%;平均治愈天数为3.7天,细菌转阴最长4天,最短24小时,平均转阴天数为2天。全部患者均未发现肝、肾功能损害现象。(2)复方新诺明加庆大霉素、吡哌酸对照组,共治疗324例,治愈282例(87.0%),有效38例(11.7%),无效4例(1.3%),总有效率98.7%。平均治愈时间为4.06天。两组总有效率经统计学处理, $P<0.05$ ,治疗组高于对照组。

**体会** 解毒胶囊是选择几种中草药制成,治疗急性细菌性痢疾效果优于目前治疗菌痢药物,显示了中草药治疗疾病的威力。同时也是中药饮片煎服的一种改革。临床研究结果表明,无毒副作用,值得推广。

## Abstracts of Original Articles

### Clinical Study on the Soaked Treatment of Chronic Osteomyelitis with Herbal Medicine

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This paper represented 500 patients with chronic osteomyelitis who were treated with Chinese medicinal herbs, Gan-ling(甘灵) Immersion Formula, in which focuses were soaked in combination with other therapies from 1986~1989. Healing rate was 83.2%. Effective rate was 98.0%. This therapeutic method was more effective for treating chronic osteomyelitis of the hand and the foot with shorter course. It was also good for treating refractory skin ulcer and scar, ilium osteomyelitis and sclerosing osteomyelitis. This method was immediately effective for acute attack of chronic osteomyelitis. Fistula in half of the patients could be closed within two therapeutic course. Most of the non-union and delayed-union of the bones could be unionized as chronic osteomyelitis was healed. Most dead bones could remove spontaneously, some could be absorbable, and seldom should be removed by operating on. These herbs are easy to get. The method was so simple and so safe that it could provide a new way of treating chronic osteomyelitis. Experiments showed Gan-ling Immersion Formula possessed relative strong anti-inflammation and external antibiotic effects.

(Original article on page 648)

### Observation on Therapeutic Effects of Anti-Rheumatic Tablet in Ankylosing Spondylitis

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188 patients of ankylosing spondylitis were treated with anti-rheumatic tablet compared with 30 patients with Indomethacin as control group. The results showed that spinal anteflexion and finger-ground test of both treated group and control group had improved significantly ( $P < 0.05$ ), but lateral curvature movement, thorax expansion test, 20 m walking time, and the levels of IgG, IgA, IgM, C<sub>3</sub>, ESR, CRP of the treated group had marked difference compared with those treated before ( $P < 0.01$ ). It was proved that in the treated group, the marked effective rate was 53.72%, while in the control group was 20.00%. There was significant difference between the two groups in effective rate ( $P < 0.001$ ). This revealed that anti-rheumatic tablet is a kind of ideal drug in treating ankylosing spondylitis.

(Original article on page 652)

### The Effect of Acupuncture and Moxibustion on Hypothalamus-Pituitary-Adrenal Axis Suffering from Simple Obesity

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In order to understand the effect of acupuncture and moxibustion on hypothalamus-pituitary-adrenal axis in simple obesity, the authors have observed the obese indices, the lipid level, the content of ACTH in plasma and that of salivary cortisol in 39 simple obesity before and after the acupuncture and moxibustion treatment. The results showed that the markedly effective rate was 38.5%, the effective rate was 51.3%, the ineffective rate was 10.3% and the total effective rate was 89.7% after treatment. The results also showed that the function of hypothalamus-pituitary-adrenal axis in simple obesity was lower than that of normal. Acupuncture and moxibustion treatment not only regulated the lipid level and achieved the antiobesity effect but also enhanced the function of