

电针内关穴对窦房传导功能的影响及其意义

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内容提要 采用直接窦房传导时间(SACTd)为指标,对10例窦房结功能正常者进行了针刺前、针刺及固有心率(IHR₀)期间SACTd测定,以探讨电针内关穴对窦房传导功能的影响及其意义。结果表明:电针与IHR₀期间SACTd较对照期显著缩短($P < 0.01$; $P < 0.001$)。自主神经阻滞,电针该穴不能使SACTd进一步缩短($P > 0.05$)。提示:以内关穴为主的电针刺激能改善正常窦房传导功能,其作用似与自主神经中介有关;IHR₀时SACTd较正常为短,正常值有待确定。

关键词 电针 窦房传导时间 自主神经系统

针刺对心脏活动、血管功能、血压以及血液流变与动力学有显著影响^{〔1〕},主要起良性调整作用^{〔2〕}。最近电生理研究表明,穴位针刺尚能提高室颤阈值。但有关体穴针刺对窦房传导功能的影响还未见报道。本文就电针内关穴对窦房传导时间的作用作了初步研究,报告如下。

对象与方法

一、对象

受检者系我院1988年7月~1990年12月间行心导管检查的住院患者。10例中,男6例,女4例。年龄14~31岁,平均20岁。术前均经详细临床观察及动态心电图检查证实其窦房结功能正常^{〔3,4〕}。其基础疾病分别为:房间隔缺损(继发孔型)4例,室间隔缺损3例,动脉导管未闭2例,肺静脉畸形引流1例。均经其后心导管检查和造影确诊。

二、方法

术前1周停用一切影响窦房结功能的药物。为避免生理周期的影响^{〔5〕},检查均于晨8时开始,窦房结电生理检查在心导管和造影检查之前进行。

1. 窦房结电图(SNE)描记和SACTd测定 采用作者改进的电极导管定位法常规记录

SNE^{〔6,7〕},测定SACTd。其频率选择范围0.1~50 Hz,增益100 μ V/cm。记录仪器为日本光电RM 6000型八导生理记录仪,纸速100 mm/s。同步记录体表II导心电图。

2. 取穴与针刺方法 为便于对照,取右侧内关穴为主穴,间使穴为配穴。选用28号2寸不锈钢毫针,依法刺入穴位,得气后与G 6805型针麻仪相连,采用连续波刺激,频率280次/min,刺激强度根据患者体质调整,以能耐受为限,持续时间1 min。

3. 实验步骤与统计分析 实验以序列为单位,每一序列包括4个步骤:(1)对照期:未针刺前,描记SNE 1 min。(2)针刺期:在穴位电针刺激期间同步描记SNE 1 min。(3)IHR₀期:即静脉注射心得安0.2 mg/kg,速度1 mg/min。10 min后再静脉注射阿托品0.04 mg/kg,注射时间在2 min以上,5 min后描记SNE 1 min。(4)IHR₀加针刺期:在IHR₀期间行穴位电针刺激,同步记录SNE 1 min。分别取上述各期10个SACTd平均值(针刺期与IHR₀加针刺期以刺激终止前10次心搏为准)进行统计分析,采用t检验,测定值以 $\bar{x} \pm S$ 表示。

结 果

对照、针刺、IHR₀及IHR₀加针刺期的SACTd分别为 99 ± 8 ms, 82 ± 10 ms, $55 \pm$

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11 ms 和 46 ± 19 ms。针刺期 SACTd 较对照期为短($t=3.1567$, $P<0.01$), 其中 1 例延长, 另 1 例无变化。与对照期比较, IHR₀期 SACTd 也显著缩短($t=13.5980$, $P<0.001$), 但与 IHR₀加针刺期比较, 两者无统计学差异($t=1.8378$, $P>0.05$)。

讨 论

一、针刺内关穴对 SACTd 的影响及其意义 针刺内关穴具有广泛心血管效应, 其反应方式有赖于刺激的深浅、刺激方式及强度, 并受原有心血管状态的影响^(1, 2)。本文结果表明以内关穴为主穴、间使穴为配穴的电针刺激可使绝大部分窦房结功能正常者的 SACTd 缩短($P<0.01$), 说明刺激该穴能加速窦房传导; 部分病例此值不变或延缓, 但大部分以加速为主。此种作用在阻断自主神经后显著减弱($P>0.05$)。提示电针内关穴对窦房传导功能的作用有赖于自主神经系统的完整性。有关针刺作用的确切机制目前尚不清楚。现有经络学说、神经学说、激素内分泌学说、电磁学说以及闸门学说等⁽⁸⁾。本文支持自主神经中介学说。针刺对局部的组织效应及体液内分泌影响有待深入研究。

二、THR₀测定与 SACTd 关系 自主神经对窦房结功能有显著影响, IHR₀测定能明显提高窦房结电生理参数的敏感性及其特异性⁽⁹⁾。

迄今, 在 IHR₀期间直接测定 SACTd 者鲜见, 尚缺乏有关正常值。本结果显示自主神经阻滞 after SACTd 较前显著缩短($P<0.001$)。表明健康人以迷走神经张力占优势, 故现行 SACTd 正常值标准不适于 IHR₀状态下窦房结传导功能判定。其正常值有待大样本进一步确立。

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capsule. The results showed that total effective rate was 91.7% in QSTZ group, and 71.43% in the YJC group ($P < 0.05$). The levels of TC, TG and LDL-C before and after medication showed significant difference, $P < 0.01$ in QSTZ group and that there was only a few persons those $P < 0.05$ in control group. About AI, it revealed in QSTZ and control group as $P < 0.01$ and > 0.05 respectively.

Key word Qing-Shen Tiao-Zhi tablet, hyperlipemia, blood lipid

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**Clinical Study on Jiangzhi Koufu Ye (降脂口服液)
in Treating Essential Hyperlipemia**

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The effect of Jiangzhi Koufu Ye (JZKFY) for serum lipid was verified. 333 patients were treated with JZKFY as treated group, while those with vitamin E as control. It was found that JZKFY was able to lower TC, TG, TC-HDL-ch/HDL-ch and raise HDL-ch very significantly ($P < 0.001$) after 14 weeks and the effect were maintained at least 4 weeks. The marked effective and the total effective rate were 59% and 92% respectively. Except for HDL-ch, all other indexes were better than the control. No obvious side effects were found.

Key words hyperlipemia, cholesterol, triglyceride, high-density lipoprotein, Jiangzhi Koufu Ye
(Original article on page 658)

**Study on Balance of Lipoperoxidative Damage in Plasma and Platelet
with Ratio of TXA_2/PGI_2 in Blood Stasis Syndrome of CHD Patient**

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In order to study the biochemical and pathophysiological mechanism of the Blood Stasis Syndrome (BSS) or Non-BSS of coronary heart disease (CHD) patients, the activities of SOD, Selenium-glutathion peroxidase, the content of LPO in plasma and platelets and the contents of TXB_2 and 6-keto- $PGF_{1\alpha}$ in plasma were determined in 109 BSS and Non-BSS of CHD patients compared with 98 healthy controls. It was discovered that the contents of TXB_2 , LPO, PL-LPO, and the ratio of $TXB_2/6\text{-keto-}PGF_{1\alpha}$ were significantly increased in BSS-CHD patients compared with controls and Non-BSS-CHD patients. It was also discovered that the SOD activities and the contents of 6-keto- $PGF_{1\alpha}$ decreased significantly in Non-BSS-CHD patients. The results suggested that the injury of platelets by oxygen free radicals might be one of the primary injury factors in BSS-CHD patients. Our conclusion is that PGI_2 , SOD belong to the category of Heart-Qi, while TXA_2 , LPO to the Blood category. Therefore TXB_2 , 6-keto- $PGF_{1\alpha}$, SOD, LPO should serve as some of the objective indexes for BSS patients of CHD.

Key words Blood Stasis Syndrome, platelet, lipoperoxidative damage, thromboxane, coronary heart disease

(Original article on page 661)

**Effects of Electro-Acupuncture at Neiguan P6 on Sino-Atrial
Conduction in Patients without Sick Sinus Syndrome**

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The effects of electro-acupuncture (EA) at Neiguan P6 served as a main point and Jianshi P5 as an adjunct point on sino-atrial conduction were studied in 10 patients with normal sinus nodal