

气虚患者心血管植物神经系功能的变化

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内容提要 本文报道对40例气(血)虚患者作心搏间距变化及卧立位血压差等无创伤性测定,并与100名正常人相对照。结果表明气(血)虚组与对照组在呼吸差、立卧差及30/15比值上相比较均有显著差异(P 均 <0.01)。在卧立位血压差上两组也存在明显区别。反映气(血)虚患者存在着心血管植物神经系功能紊乱。该方法简便易行,可作为气(血)虚证临床观察的一项指标。

探索气虚患者与正常人在生理活动上存在的差异,是阐明气本质所必须进行的基础工作。我们以心搏间距及卧、立位血压差等无创伤性测定方法,对40例气(血)虚患者的心血管植物神经系功能进行了观察。

出立位与卧位时每分钟心率差(立卧差);测定立位时心电图第30次与第15次心搏R—R间期时间的比值(30/15比值)。卧、立位血压差,系测定卧位时和站立后即刻的血压,计算出卧位与立位的收缩压之差。

资料与方法

一、研究对象

1. 气(血)虚组:40例,气虚辨证按照1982年中西医结合虚证研究与防治老年病学术会议所制定的“中医虚证辨证参考标准(草案)”⁽¹⁾;血虚辨证按传统辨证。其中属气虚33例;气虚为主兼有血虚7例。其中男性11例,女性29例;年龄19~69岁,平均年龄45岁。原发疾病包括慢性肾炎,结缔组织疾病等多种不同系统的疾病。

2. 正常人对照组:系根据上海第一医学院附属华山医院报告资料⁽²⁾。100名健康人,男性54名,女性46名。年龄20~70岁,平均年龄47岁。

二、测定方法:受检者取平卧位,在平静呼吸情况下,记录Ⅱ导联心电图30秒钟,然后在深呼吸状态(每分钟呼吸6~8次)记录30秒钟,测深呼吸时最大与最小心搏间距(R—R间期),算出深吸气与深呼气时每分钟心率之差(呼吸差);继而测定从卧位突然直立的心率1分钟,再以R—R间距转算成每分钟心率,算

结 果

一、两组间心搏间距变化的比较:除气(血)虚患者与正常人对对照组相比较平静心率两组间无显著差别外($P>0.05$),在呼吸差,立卧位差,30/15比值心搏间距变化上两组差别有极显著性, P 值均 <0.01 。见附表。

二、按年龄分组两组间心搏间距变化的比较:正常人心搏间距可随年龄增加而减少⁽²⁾。

附表 气(血)虚患者与正常人对对照组心搏间距变化

	例数	平静心率 (次/分)	呼吸差	立卧差	30/15 比值	卧立位 血压差 (mmHg)
对照组	100	72.80 ± 1.70	19.50 ± 1.30	19.90 ± 1.70	1.11 ± 0.02	2.76
气(血)虚组	40	74.38 ± 4.03	14.40 ± 2.39	13.60 ± 2.16	1.03 ± 0.03	24.58*
P 值	—	>0.05	<0.01	<0.01	<0.01	—

*测定17例

因此,我们将两组对象按年龄分为50岁以下,50~59岁和60岁以上三个年龄组以相对照,结果显示:50岁以下与50~59岁两组气(血)虚患者与正常人相比,除平静心率差别无显著意义

($P>0.05$)外,在相同年龄组内,呼吸差、立卧差及30/15比值相比,差别均有极显著性, P 均 <0.01 (除50~59岁组呼吸差 $P<0.05$ 外)。60岁以上组因例数过少,不能比较。

三、卧、立位血压差:测17例气(血)虚患者卧立位收缩压差其平均值为24.58mmHg,对照组为2.76mmHg。气(血)虚组中 ≥ 30 mmHg 8例(占47%),而对照组无1例卧立位血压差 ≥ 30 mmHg。两组间存在明显的区别。

讨 论

检测心搏间距等变化,作为植物神经系功能的一种测试方法,目前已较广泛地应用于临床。如在糖尿病患者籍以确定植物神经病变存在与否^[2,3]。现就各项检查的意义及正常值扼要讨论如下。

一、呼吸差:正常人主要通过副交感神经控制心率,故在深呼吸时有心搏间距变化。50岁以下正常人呼吸差应 >15 次/分。正常人组100名中80% ≥ 15 次/分,而气(血)虚组62.5% <15 次/分,提示迷走神经功能紊乱对心率的影响。

二、立卧差:正常人卧位迅速起立10~20秒内心率升至高峰,以后缓慢下降,80%正常人立卧差 ≥ 15 次,有植物神经功能紊乱者站立后心率上升缓慢,立卧差常 <15 次。气(血)虚患者65% <15 次。反映气(血)虚患者站立时压力感受器传入神经及交感神经兴奋性均较不敏感。

三、30/15比值:正常人从卧位迅速站立,在10秒时(第10~20心搏时)R—R间期最短,是交感神经兴奋所致。在20秒时(第25~35次心搏时)R—R间期最长,系迷走神经兴奋所致。正常人30/15比值 ≥ 1.03 ,而有植物神经功能紊乱者比值 ≤ 1 ,提示迷走神经功能异常。

四、卧立位血压差,正常人由卧位迅速站立,血液大量滞留在下肢,回心血量减少,心排出量降低,并由此刺激压力感受器,反射兴奋交感神经,使血管收缩及心率加速并增加心肌收缩力,释放去甲肾上腺素以及刺激肾素—

醛固酮系统而使血压升高。对照组100名正常人无1例卧立位血压差 ≥ 30 mmHg,而气(血)虚患者血压差 ≥ 30 mmHg者达47%,说明有明显植物神经功能异常,主要是交感神经功能异常。

上述检查的意义在于平静心率,呼吸差以反映迷走神经功能为主;立卧差,30/15比值及卧立位收缩压差以反映交感神经功能为主^[2]。本研究结果显示,气(血)虚患者与正常人在呼吸差、立卧差和30/15比值上相比较具有极显著差异($P<0.01$),卧立位血压差两组也存在明显区别。表明气(血)虚患者心血管交感和副交感神经均有不同程度受累。

中医学认为气虚的病理主要是元气不足,而元气的产生与肺、脾、肾三脏有关,其中与脾、肾关系更为密切。国内很多学者在研究脾虚及肾虚时,均发现脾虚或肾虚患者存在着植物神经功能紊乱^[4,5]。本研究结果也证实了这一点。至于植物神经功能紊乱在气(血)虚证中所占的地位,是原发或是继发以及交感和副交感神经损害的程度和关系均值得进一步研究。

本文资料表明,心搏间距变化测定为气虚患者诊断植物神经功能紊乱提供了客观依据,方法简便易行,重复性强,无需特殊设备。通过以上实践,我们认为该项检查可作为对气虚患者临床观察的一项可靠指标,也为进一步探索气本质提供了重要线索。

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An Analysis on the Treatment of Severe Viral Hepatitis with TCM-WM

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This paper reports on the treatment of 46 cases of severe viral hepatitis (SVH) with methods of traditional Chinese medicine and western medicine. The survival rate of this group was increased to some extent as compared with that of previous patients of the past who were treated with routine methods. The survival rate of this group was 41.3%, among which subacute severe hepatitis was 56.3% and chronic severe hepatitis was 33.3%. The effect of this treatment in regulating the metabolic disturbance of plasma amino-acids, preventing and treating hepato-encephalopathy was definite. By means of clinical analysis in SVH patients, several factors were considered to be closely related to prognosis: such as, the course of disease, with or without complications, and level of serum bilirubin, prothrombin activity, serum cholesterol, ratio of GOT/GPT and BCAA/AAA, and the disturbance in nailfold microcirculation.

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Selection of the Indices of Meditation in Practice of "Relaxing Exercise"

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Thirty patients practiced "Relaxing Exercise", their EEG, EMG, EKG, finger plethysmography, skin potential, skin temperature and respiratory movements were simultaneously recorded by using a polygraph. The findings showed that their physiological responses had marked changes after practicing "Relaxing Exercise" for three months. Of these responses, EEG spectral analysis showed that the alpha wave increased from 30.1% to 37.2%; it was found that the total energy of electromyography from 0 to 500 Hz had an obvious reduction in EMG spectral analysis; the variation coefficient of the respiration circle and amplitude reduced from 14% to 12%; respiration frequency slowed down from 15.3 to 13.8 times each minute; and heart rate increased from 836 ms to 881 ms per beat. The conclusion is that all the above physiological responses are valuable in estimating the state of meditation in the practice of "Relaxing Exercise".

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The Change of Vegetative Nervous Function in Qi Deficiency Patients

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Forty cases of Qi (vital energy) deficiency patients have been examined with the beat interval and the postural difference of blood pressure (horizontal and vertical posture), and in comparison with 100 normal cases in the same sex and age. Among these 40 cases, Qi deficiency was found in 33 cases and deficiency of Qi and blood in 7 cases. The Qi deficiency syndrome itself comprises of diseases of various systems.

Results: (1) The variation of beat interval: With ECG, the heart rate during quiet states, the change of beat interval both during deep breathing (i.e. respiratory difference) and at the horizontal and vertical posture (i.e. postural difference) and the heart beat ratio at time 30 and time 15 (30/15 ratio) of the patients were recorded. Except for the heart rate during quiet states ($P > 0.05$), there were significant difference on respiration, postures and heart beat ratio (30/15) between the patients and control group ($P < 0.01$). (2) Postural difference of blood pressure: The average postural difference of systolic blood pressure was 24.58 mmHg in 17 Qi deficiency patients (8 cases of which showed over 30 mmHg), while that of control group was 2.76 mmHg only (none of them above 30 mmHg). So the indices of the two groups were significantly different.

It indicates that the functional disorder of vegetative nervous system do exists with involvement of sympathetic and parasympathetic disorder to some extent in the Qi deficiency patients. We consider that this test provides a valuable parameter for the clinical observation of Qi deficiency patient and give an important clue to explore the substantial basis of Qi and blood.

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