

脾气虚证淋巴细胞电泳测定的初步研究

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内容提要 本文采用方形毛细管式电泳方法对33例脾气虚证患者进行了淋巴细胞电泳观察,并与肝郁脾虚、肝胃不和型患者进行了比较。结果:脾气虚组的淋巴细胞电泳率(0.777 ± 0.094)低于肝郁脾虚组(0.819 ± 0.115)、肝胃不和组(0.850 ± 0.130)和健康对照组(0.915 ± 0.082), $P < 0.05 \sim 0.01$;慢泳细胞电泳率也显著低于其他3组, $P < 0.05 \sim 0.01$;快泳细胞百分数(42.1 ± 19.3)较健康组(73.0 ± 15.3)低, $P < 0.01$;慢泳细胞百分数则升高(57.9 ± 19.3), $P < 0.05$ 。说明脾气虚证存在着淋巴细胞电泳能力降低,淋巴细胞快、慢泳细胞分布失常的特点。淋巴细胞电泳能力的低下,可能是脾气虚证患者免疫功能低下的机理之一。

本文探讨了脾气虚与淋巴细胞电泳能力的关系,现将初步观察结果报告如下。

对象与方法

一、病例选择:观察对象均为本院附属医院住院患者,根据中医辨证分为:(1)脾气虚型:33例,男21例,女12例,年龄16~58岁,平均 33.15 ± 10.3 岁($M \pm SD$,下同);其中慢性胃炎,胃、十二指肠球部溃疡21例,慢性肠炎7例,慢性病毒性肝炎5例。(2)肝郁脾虚型15例,男12例,女3例,年龄22~61岁,平均 35.17 ± 14.26 岁;其中慢性肝炎7例,胃、十二指肠球部溃疡8例。(3)肝胃不和型15例,男12例,女3例,年龄22~55岁,平均 30.86 ± 10.2 岁;其中慢性胃炎,胃、十二指肠球部溃疡14例,慢性肝炎1例。以上3组为观察组。另设健康组33例,男17例,女16例,年龄20~53岁,平均 29.7 ± 5.9 岁。各组年龄经统计学处理无显著性差异($P > 0.05$)。

二、诊断标准:脾气虚的诊断标准参考1982年11月全国中西医结合虚证研究与老年病防治学术会拟定的中医虚证参考标准⁽¹⁾;肝郁脾虚证参考湖南医学院第一附属医院中医基础理论研究室拟定的诊断标准⁽²⁾;肝胃不和证参考北京中医学院主编的《中医学基础》⁽³⁾。

三、观测方法:采用方形毛细管式电泳方法⁽⁴⁾。

1. 仪器及试剂:(1)仪器:上海医科大学生物物理教研室研制的XN-3血粘细胞电泳自动计时仪,涟水电讯电机厂生产的水平式离心沉淀机;(2)试剂:上海试剂厂生产的淋巴细胞分层液、肝素粉、0.145 M 的氯化钠溶液,9%氯化钠—2%琼脂盐桥。

2. 淋巴细胞悬液的制备:先准备好盛有2 ml 淋巴细胞分层液的试管,然后将肝素抗凝剂2 ml 缓慢地沿试管壁悬入分层液之上。离心后取出富含淋巴细胞的云雾状液体,先用0.145 M 的氯化钠溶液清洗3次,再用该氯化钠溶液稀释成 $10\,000/\text{mm}^3$ 左右的淋巴细胞悬液。

3. 电泳观测:每个标本在电泳小室内观测100个淋巴细胞各自往返1小格(每小格 $18\mu\text{m}$)所需的电泳时间,并由自动打字机分别打印出每个细胞电泳时往返1小格各自的电泳时间。

4. 电泳率的计算:编制程序,将100个淋巴细胞往返电泳时间的200个数据输入微型电子计算机(PC-1500型微机),计算每个细胞的平均电泳率,并按各细胞电泳率从小至大排队并打印出来,计算并打印100个细胞的平均电泳率。根据健康组的实验结果拟定以电泳率0.8作为界线,大于0.8者为快泳细胞,其余为慢泳细胞,据此计算快、慢泳细胞的平均电泳率及其百分数。

结 果

一、淋巴细胞平均电泳率：各观察组的平均值均<健康组，其中脾气虚、肝郁脾虚组与健康组比较差，异均有高度显著性意义 ($P<0.01$)。脾气虚组与肝胃不和组比较，差异也有显著性意义 ($P<0.05$)。各组淋巴细胞电泳测定结果，见附表。

二、快泳细胞平均电泳率：各观察组与健康组比较均有不同程度的差别，即脾气虚组<

肝郁脾虚组<肝胃不和组<健康组，但各组间差异均无统计学意义 ($P>0.05$)。

三、慢泳细胞平均电泳率：各观察组与健康组比较差异均有高度显著性意义 ($P<0.01$)，其中肝胃不和组、肝郁脾虚组与脾气虚组比较分别有显著和高度显著性差异 ($P<0.05\sim 0.01$)。

四、快泳、慢泳细胞百分数：各组与健康组比较差异均有高度显著性意义 ($P<0.01$)，见附表。

附表 各组淋巴细胞电泳测定对比 ($M\pm SD$)

例数		电泳率			百分率	
		淋巴细胞	快泳细胞	慢泳细胞	快泳细胞	慢泳细胞
健康组	33	0.915 ± 0.082	0.976 ± 0.068	0.714 ± 0.030	73.0 ± 15.3	27.0 ± 15.3
脾气虚组	33	$0.777\pm 0.094\Delta\Delta$	0.947 ± 0.079	$0.632\pm 0.045\Delta\Delta$	$42.1\pm 19.3\Delta\Delta$	$57.9\pm 19.3\Delta$
肝郁脾虚组	15	$0.819\pm 0.115\Delta\Delta$	0.954 ± 0.080	$0.671\pm 0.046\Delta\Delta^{**}$	$46.9\pm 27.2\Delta\Delta$	$53.1\pm 27.2\Delta$
肝胃不和组	15	$0.850\pm 0.130^{*\Delta}$	0.973 ± 0.090	$0.669\pm 0.045\Delta\Delta^{*}$	$52.7\pm 24.0\Delta\Delta$	$47.3\pm 24.0\Delta$

注：电泳率单位：微米/秒/伏特/厘米 ($\mu\text{m/s/V/cm}$)；与健康组比较 $\Delta P<0.05$ 、 $\Delta\Delta P<0.01$ ；与脾气虚组比较 $P<0.05$ 、 $**P<0.01$

另外，3组患者的电泳峰与健康组均有不同程度的差别，见图1、2。

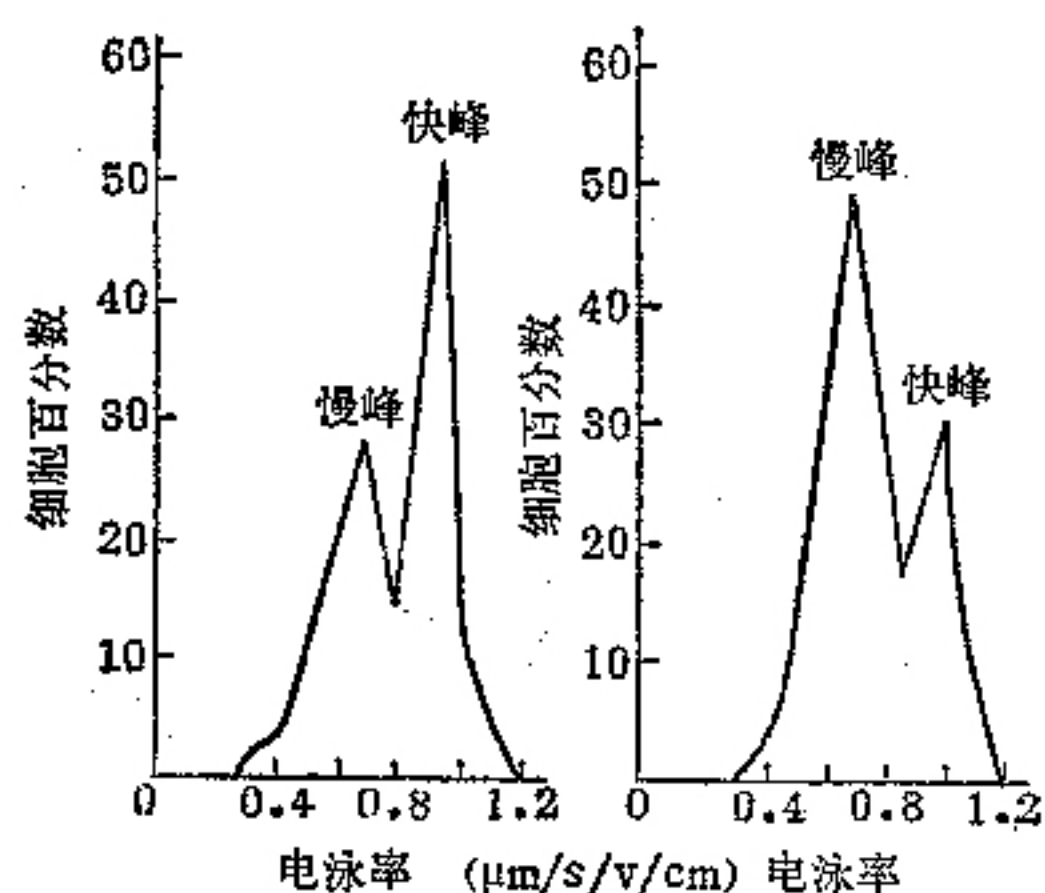


图1 左侧为健康人淋巴细胞电泳频率直方图
右侧为脾气虚淋巴细胞电泳频率直方图

图中脾气虚患者的电泳峰与健康组电泳峰呈相反趋向，表明脾气虚患者的电泳峰以慢峰为主峰，快峰为次峰。

讨 论

现代免疫学研究证明，脾气虚患者的细胞

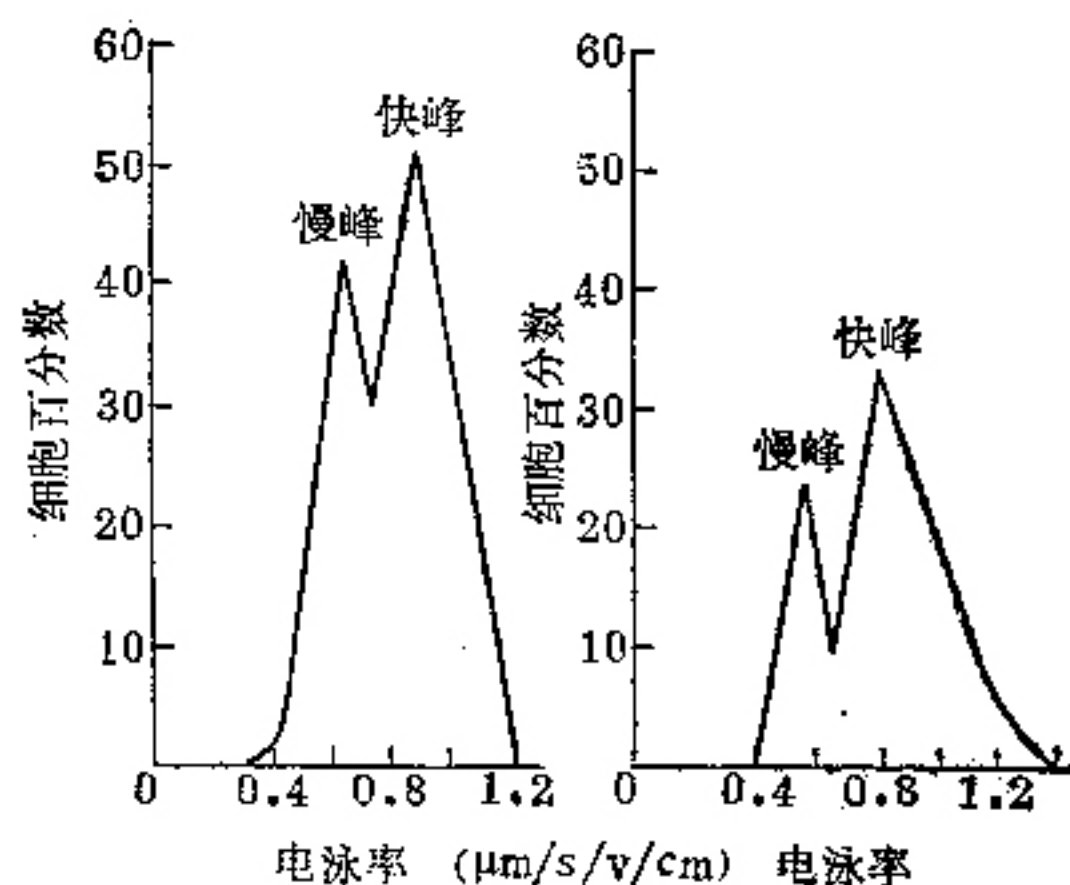


图2 左侧为肝郁脾虚淋巴细胞电泳频率直方图
右侧为肝胃不和淋巴细胞电泳频率直方图

免疫和体液免疫功能低下，而经健脾益气法治疗后免疫功能相应提高⁽⁵⁾。经实验和临床证明，部分健脾益气药物和方剂有增强机体网状内皮系统吞噬功能，促进机体非特异性免疫功能及提高机体细胞免疫和体液免疫功能作用⁽⁶⁾。

本文的实验表明：脾气虚组与肝郁脾虚组的淋巴细胞电泳率均比健康组为低 ($P<0.01$)，肝胃不和组与健康组比较也有明显差异 ($P<$

0.05)。淋巴细胞电泳能力的降低标志着淋巴细胞表面电荷的改变(主要是指负电荷的减少),说明淋巴细胞活力下降。淋巴细胞具有特异性的免疫功能,是免疫系统中最主要的细胞。淋巴细胞电泳能力的下降,可能是脾气虚免疫功能低下的主要原因之一。

中医学认为,脾主运化,为后天之本,气血生化之源。脾气虚使健运失常,致后天之本匮乏,营卫气血亏损,不能营养机体组织细胞,不能维持其正常代谢,使组织细胞的活力下降。反映在淋巴细胞方面,表现为电泳能力的下降,导致淋巴细胞对抗原刺激的应答能力下降,使之不易获得免疫力。但淋巴细胞电泳不是一项脾气虚的特异指标。我们仅观测了脾(胃)虚实之证,还未对各类虚证进行对比观察,所以有

待于进一步研究。

(本文承蒙中国中医研究院西苑医院翁维良副研究员指正,谨谢)

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石膏、知母等微量元素含量及其抗感染作用探讨

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石膏和知母在中医学治疗热性病中占有重要地位。例如白虎汤治疗乙型脑炎, 麻杏石甘汤治疗肺炎, 疗效显著。但是它们的作用原理尚不清楚。近年来国内外学者通过微量元素的测定, 认为多种微量元素与控制细菌感染有一定关系, 而石膏、知母等中药中亦含有多种微量元素。故我们对这几种药物作了微量元素的测定, 并探讨其抗感染的作用机理。

材料与方法 石膏用河北省应城县产品, 知母用吉林省榆县产品。知母与甘草应用灰化法, 石膏应用碱溶法。采用 Perkin-Elmer 2380 型原子吸收分光光度计测定。

结 果 石膏 10g, 知母 10g, 甘草 10g 的微量元素测定结果, 见附表。

附表 3 种药的微量元素含量 (PPM)

	铁	锌	铜	锰	钴	铬	镍
石膏	359.4	12.84	36.52	10.93	25.09	3.63	20.14
知母	111.4	21.28	4.07	5.80	1.00	0.18	2.10
甘草	9.9	0.32	0.37	3.66	1.16	0.37	2.01

讨 论 近年来发现在各种不同感染时, 人体的微量元素发生变化, 其中铁、锌和铜值是降低的。近年研究, 在感染过程中, 细菌、病毒、寄生虫或毒素等刺激都可使白细胞释放内源性白细胞递质 (LEM)。现知 LEM 主要作用于肝脏, 有双重作用。一是作用于肝细胞膜, 使铁、锌和氨基酸等加速透过细胞膜。另一是作用于肝细胞核和粗面内质网加速合成铜蓝蛋白复合物和急性期反应蛋白(包括纤维蛋白原, α_1 抗胰蛋白酶, 结合球蛋白, C-反应性蛋白, 血清粘蛋白等)。当感染时它与铜蓝蛋白及血铜的浓度在 LEM 的刺激下都表现增加。

本文测定结果石膏中含铁、铜量较高, 而知母含锌量更高。由于在感染高热时, 应用石膏、知母等清热降火药大量的补充了铁、锌和铜等微量元素, 可能在 LEM 的作用下, 使铁、锌加速流入肝细胞内和导致加速合成铜蓝蛋白复合物和急性期反应蛋白, 增加了杀伤微生物和机体的防御能力, 有助于对感染的控制, 而甘草的作用似不太明显。这为清热泻火药石膏和知母在抗感染中的药理作用, 提供了新的见解。

Therapeutic Effect of TCM on Diabetic Peripheral Neuropathy

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23 cases of diabetic peripheral neuropathy were treated with the compound injection of *Salvia miltiorrhiza* and *Rehmannia glutinosa* according to the principle of "promoting the blood circulation and nourishing the Yin" of TCM, for 14 times. After treatment, the patients' symptoms and signs of peripheral nerve were improved significantly. Meanwhile, peroneal motor nerve conduction velocity (MNCV) increased from 39.27 ± 4.91 to 50.12 ± 6.75 ($P < 0.01$), dorsal pedis vein PvO_2 and O_2ST decreased from 53.2 ± 12.5 and 81.8 ± 13.6 to 40.9 ± 10.8 and 69.9 ± 18.3 respectively ($P < 0.01$). There was a negative correlation in the analysis of regression correlation for the values of dorsal pedis PvO_2 and peroneal MNCV ($r = -0.52$, $P < 0.01$). The result showed that this therapy was characterized by short course of treatment and remarkable therapeutic effect. The mechanism may be relevant to the improvement of microcirculation.

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Study on Treating Multiple Sclerosis Patients with *Tripterygium wilfordii* Tablets

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This paper reports on 32 multiple sclerosis patients treated with *Tripterygium wilfordii* tablets (TW), dexamethasone or ACTH (as positive control) and vitamin B, C tablets (as negative control), to study the clinical effects of TW and differences in humoral immunological function of the patients before and after treatment. The results suggested that TW had obvious effects in relieving clinical symptoms and regulating immunological function of those patients who were treated with it. In 8 of the 10 cases in the TW group, symptoms were significantly relieved and signs were recovered. In the other two cases, symptoms were slightly alleviated. In 9 of the 11 cases in the dexamethasone group, symptoms were relieved, 1 case ineffective, and one was aggravated, which improved after treated with TW. 4 out of 7 cases in the ACTH group were relieved, but 2 cases showed no change and one aggravated. None of the 4 cases in vitamin group improved. The levels of serum CIC and MBP antibody of the patients treated with TW decreased significantly ($P < 0.01$) after treatment, while the levels of C_3 increased significantly ($P < 0.01$). 7 cases in the TW group had abnormally high levels of CNS IgG syn before treatment, which were reduced significantly after treatment ($P < 0.05$). Although the levels of serum CIC and MBP antibody of the dexamethasone and ACTH groups were decreased, but there was no increase in C_3 , and some side-effects were present. The results showed that TW tablets had corticosteroid-like effects but without corticosteroid-like side-effects, it could increase levels of C_3 and relieve the clinical symptoms.

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Study on Lymphocytic Electrophoresis in Spleen-Qi(气) Deficiency Patients

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The lymphocytic electrophoresis in 33 Spleen-Qi deficiency (SQD) patients has been compared with both the patients of stagnation of Liver-Qi with deficiency of Spleen (SLQDS) and the hyperactive Liver-Qi affecting stomach (HLQAS) by means of square-capillary-type electrophoresis applying 0.145M solution of sodium chloride as the electrophoretic medium. The result showed that the electrophoretic rate of the lymphocytes of the SQD group (0.777 ± 0.094) was lower than that of the SLQDS group (0.819 ± 0.115), and significantly lower than that of the HLQAS group (0.850 ± 0.130) and the normal (0.975 ± 0.082), $P < 0.05$, $P < 0.01$; and the electrophoretic rate of the slow electrophoretic lymphocytes (0.632 ± 0.045) was also significantly lower than that of the SLQDS (0.671 ± 0.046), HLQAS (0.669 ± 0.045) and the normal (0.714 ± 0.03), $P < 0.05$, $P < 0.01$; the percentage of the fast electrophoretic cells (42.1 ± 19.3) was lower than normal ($P < 0.01$), but that of the slow electrophoretic cells (57.9 ± 19.3) was higher ($P < 0.05$). It revealed that the fast peak was the main peak in the normal group, the slow peak the secondary one, but on the contrary, in SQD group, the slow peak was the main and the fast peak the secondary one. The results showed that the human lymphocyte was a kind of heterogeneous cell group with different electrophoretic abilities, but in the SQD patients the heterogeneity has been changed. All these indicated that there were the characteristics of lower lymphocytic electrophoretic ability and distributing disorder of the fast and slow electrophoretic lymphocytes in the SQD patients. The lower lymphocytic electrophoretic ability may be one of the mechanisms of the reduced immunological function in the SQD patients.

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