

# 慢性肝病虚证(肝阴虚、脾气虚) 血中微量元素锌铜的变化及其意义

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近年来对中医虚证理论的研究,探讨其物质基础已受到广泛重视,有从细胞水平乃至分子水平寻找阴和阳的物质基础<sup>(1)</sup>,亦有从植物神经系统或内分泌系统的功能失调进行研究<sup>(2,3)</sup>等,均为阐明虚证理论提供了一些有益的资料。本文就慢性肝病包括慢性活动性肝炎、慢性迁延性肝炎、肝炎后肝硬化及血吸虫病性肝硬化患者表现虚证—肝阴虚、脾气虚见证者,进行血中微量元素锌、铜的测定,研究其含量变化并探讨其与虚证关系。

## 材料和方法

一、病例选择:本组共 58 例,其中慢性肝病患者 38 例,包括慢性活动性肝炎 10 例,慢性迁延性肝炎 6 例,肝炎后肝硬化 15 例及血吸虫病性肝硬化 7 例,均经肝穿刺活检或外科手术取肝脏活检作病理检查证实。另 20 例为正常健康者作为对照组。

二、中医辨证:

1.肝阴虚组:共 12 例,表现久病伤阴,形体消瘦,皮肤灰暗,口燥、咽干、欲饮,五心烦热,易激动,多梦,舌质红少津,或舌质红绛,或有裂纹,或光剥无苔,脉弦细。

2.脾气虚组:共 16 例,表现神疲乏力,气短懒言,自汗,面色萎黄或晄白,腹胀纳呆,或有腹水,大便溏,尿清或少,下肢浮肿,苔薄或腻,舌质淡胖,边有齿痕,脉弱或无力。

3.实证(湿热证)组:共 10 例,表现神疲肢倦,发热,巩膜、皮肤黄染,肝脾肿大,腹胀胁痛,大便少,小便赤,舌苔黄腻,舌质红,脉弦滑数。

三、测定方法:采用上海市镉中毒协作组所用方法,取空腹血 2 ml,放在灰化炉中在 450°C 下进行灰化,14 小时后以化学方法测定。

## 结 果

本组测定结果见附表:

附表 慢性肝病虚,实证组与对照组  
血中锌铜的含量比较

分 组	例数	锌( $\mu\text{g/g}$ ) 均值(标准差)	P 值	铜( $\mu\text{g/g}$ ) 均值(标准差)	P 值
肝 阴 虚 组	12	7.91 1.82	<0.01	3.99 1.62	>0.05
脾 气 虚 组	16	13.95 3.44	<0.01	7.18 5.29	<0.01
实证(湿热证)组	10	22.65 2.03	>0.05	3.48 8.49	>0.05
对 照 组	20	31.09 12.41		3.07 1.65	

一、肝阴虚组:血中锌的含量较对照组明显降低,亦较脾气虚组、湿热证组为低( $P<0.01$ ),有显著差异,而铜的含量与对照组比较,无统计学意义( $P>0.05$ )。

二、脾气虚组:血中锌的含量低于对照组,但较阴虚组为高( $P<0.01$ ),而铜的含量显著高于对照组,亦明显高于肝阴虚组、实证(湿热证)组,有显著差异( $P<0.01$ )。

三、实证(湿热证)组:血中锌含量稍低于对照组,铜的含量与正常对照组相比,无统计学上差异( $P>0.05$ )。

三组结果示肝阴虚组血中锌的含量明显低于其他组与正常对照组,铜的含量变化不大。脾气虚组血中锌的含量较对照组低,但高于肝阴虚组;而铜则明显高于对照组。实证(湿热证)组血中锌、铜元素的含量与正常对照组相比无异常。

## 讨 论

本组对慢性肝病表现虚证(肝阴虚、脾气虚)及实证(湿热证)患者,作血中微量元素锌、铜测定,以研究其含量变化及其与虚证的关系。结果表明慢性肝病肝阴虚、脾气虚患者与微量元素锌、铜的含量变化有一定的关系,而实证组则无变化。

锌、铜二种微量元素在人体代谢过程中起主要作用。锌参与碳酸酐酶、硷性磷酸酶、羧肽酶和若干脱氢酶的组成,锌对蛋白质和核酸的合成、红细胞膜和造血过程都起重要作用,在组织呼吸和人体生化过程

中占有重要地位<sup>(4)</sup>。因此锌的含量降低时,则上述酶系统和生化过程必然受到影响,从而产生一系列代谢障碍。同样铜是细胞色素氧化酶、超氧化物歧化酶、过氧化酶、酪氨酸酶、单胺氧化酶及抗坏血酸氧化酶等组成成份,或为其活性所必需。若人体铜的缺乏,可引起体内氧化代谢过程的障碍;如蓄积过多,亦可产生严重的组织损害,它可以抑制很多酶系统,特别是那些在其活性中必需-SH基团的系统。铜离子能抑制脑内丙酮酸氧化酶及大脑膜下ATP酶,导致组织内ATP磷酸肌酸及钾含量减少<sup>(5)</sup>。故脾气虚组患者血中铜显著升高,可以引起上述许多酶系统抑制。因此,锌、铜二种微量元素的失调,其含量减少或过剩,则可引起体内多种酶系统代谢受到障碍或被抑制,从而可能产生肝阴虚、脾气虚的临床见证。显然,锌低见于肝阴虚组,锌低铜高见于脾气虚组患者,说明两种虚证的不同,锌、铜的含量各异,而实证(湿热证)组则无变化,进一步提示了两种虚证的出现与锌、铜代谢失调有密切关系。

肝脏是体内重要代谢器官之一,对许多种微量元素的吸收、贮存和代谢均起重要作用。许多慢性肝病患者由于门脉高压和淋巴郁积,肠腔胆盐减少,小肠功能紊乱导致锌的吸收以及在肝内贮存的减少,同时由于血浆白蛋白降低,锌与之结合减少而与氨基酸结合的量增多,后者通过肾小球滤出,使锌从尿中丢失而减少<sup>(4,6)</sup>,此外,有人认为肝硬化时这些微量元素

自肝脏释放入血循环的机制亦有障碍,也是锌含量减少的原因之一<sup>(6)</sup>。肝脏维持铜的平衡首先是肝脏合成兰色的铜-糖元蛋白,血浆铜兰蛋白,铜与这种蛋白质结合后,释放到血液循环中去,并主要依靠胆汁途径而排出<sup>(7)</sup>。本组脾气虚组铜含量显著增高,可能继于胆汁分泌减少和肝脏病变所致。由于这些因素导致许多慢性肝病患者锌铜的代谢失调,而引起体内一系列酶系统的代谢障碍或抑制,这可能是虚证表现的原因之一。是值得今后深入研究的课题。

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## 《中西医结合研究丛书》编委扩大会议在京召开

中国中西医结合研究会《中西医结合研究丛书》编委扩大会议于1982年4月28~30日在北京召开。来自全国各省、市、自治区的36位中西医结合专家、教授等出席了会议。季钟朴理事长和陈可冀秘书长主持会议。会议讨论了《丛书》编委会组成、编委会职责、编写规划及编写体例、要求等。

会议认为这套《丛书》的编写是非常必要的,一是总结我国三十多年来中西医结合研究成果和最新进展;二是为进一步开展中西医结合研究工作提供并开拓思路和方法,使中西医结合研究工作深入持久开展下去;三是该《丛书》的出版,将在国内外医学界及社会上产生深远影响,对中西医结合事业更有明确认识。编写该《丛书》是一件继往开来的大事,为促进中西医结合事业的兴旺发达,一定要严肃选材,以实事求是的科学态度,尽快地写出具有较高度的思想性、科学性和权威性的《中西医结合研究丛书》。并决定在

3~6年内编写出二十三种专著。

季钟朴理事长在总结发言中指出:这套《丛书》的编写,是一项很有现实意义和历史意义的巨大工程,将对中西医结合事业向前推进一大步,因此,需要我们踏踏实实地去做工作。中西医结合事业的发展走过了不平坦的道路,克服了不少困难。我们的前面,还会有许多困难和障碍,但中西医结合工作者要坚定信心。古为今用,洋为中用,推陈出新,这是马列主义的观点,我们要自觉地运用马列主义观点来指导研究中西医结合。古今中外一切好的东西都应当吸收,吸收中医的长处,发展现代医学;吸收现代医学之长处,发展中医学,这是符合辩证唯物主义和历史唯物主义的,是一个必然的趋势。中西医结合是我国医学科学发展的必由之路,编写《中西医结合研究丛书》将成为中西医结合发展史上重要的里程碑,我们要认真编写和努力完成。

(陈文)

## Abstracts of Original Articles

### A Preliminary Study of the Theory of "Deficiency Syndrome" in TCM — Changes of Cellular Immunity in Yang Xu and Yin Xu

Chen Songtao( 陈松涛 ), Yao Fengxiu( 姚凤秀 ), Xia Zongqin( 夏宗勤 )

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The rate of PHA-induced incorporation of  $^3\text{H}$ -TdR into DNA of peripheral lymphocytes was used as a criterion of cellular immunity in 99 Yang Xu (deficiency of Yang) patients (37 with chronic bronchitis or asthma, 43 with oral tumor, 10 with endocrine diseases, and 9 with chronic nephritis), 102 Yin Xu (deficiency of Yin) patients (6 with chronic bronchitis, 30 with endocrine diseases, 10 with chronic nephritis, 53 with oral tumor, 8 with lung tuberculosis, and 15 with lung carcinoma) and 65 normal adults. It was found that the cellular immunity of both the Yang Xu group and the Yin Xu group was markedly lower than the control group. The difference between the Yang Xu group and the Yin Xu group was not statistically significant, although in both groups the extent of impairment of cellular immunity in various diseases was not exactly equal.

In addition, 21 Yang Xu patients suffering from scleroderma were examined before and after the moxibustion treatment. The cellular immunity of this group was also lower than normal before the treatment and was elevated as the clinical condition was improved.

Therefore, it is concluded that cellular immunity may be looked upon as a component of "genuine energy" in TCM, and a suppression of cellular immunity is a characteristic common to both Yang Xu and Yin Xu. By relating to the results of this paper and the findings reported in our previous papers, it is suggested that there might be two types of characteristics in the "deficiency syndromes" in TCM. The general one (lowering of cellular immunity, lowering of serum Zn/Cu ratio, etc) is probably the basis for the transformation between different syndromes, whereas the specific one is probably the basis for their different manifestations (e.g. the changes of plasma cAMP and cGMP).

(Original article on page 140)

### Typological Classification of Insufficiency Symptom-Complex with Reference to Immunological Aspects: A Clinical Analysis of 100 Cases

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Through the typological classification of insufficiency symptom-complex in 100 cases, it has been shown that by consulting results of various clinical immunological examinations, the deficiency of immunoreaction on insufficiency symptom-complex could be manifested in two respects: Firstly, it was due to the fall in the absolute value of results from various immunological examinations, and sometimes to a very low level. Secondly, both rise and fall in Ig value of immunological examinations were found in individual cases.

It has shown that immunological disturbances were a consequence from the imbalance of Yin and Yang on the immuno-system. Expressions of immunological mass have shown that those patients with insufficiency symptom-complex had various manifestations.

One of the manifestations was "deficiency of Qi (vital energy) and excessiveness of invading pathogenic factors" or "the excessiveness of invading pathogenic factors that induces the deficiency of body resistance"; another manifestation was that symptoms about the excessiveness of invading pathogenic factors were concealed by the symptoms of insufficiency of Qi. These results have shown that in the differentiation of symptom-complexes and of diseases in the treatment of insufficiency of symptom-complex, the following methods are appropriate, that is, the reinforcement of the vital energy to strengthen the patient's resistance in combination with the use of febrifugal and detoxicant drugs to dispel the invading pathogenic factors.

Whenever there are manifestations of imbalance of Yin and Yang which cause disturbances in the Immuno-systems, the methods of regulating imbalance of Yin and Yang, letting water and fire (referring to the kidney and heart) complement each other, or the treatment of both cold and warm are recommended.

(Original article on page 142)

### Changes of Blood Levels of Trace Elements Zinc and Copper in Patients with Deficiency Syndrome due to Chronic Liver Diseases and their Significances

Wang Guanting( 王冠庭 ), et al

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This paper reports the changes of blood levels of trace elements zinc and copper and their significances in patients with chronic liver diseases manifested as deficiency syndrome, including both liver Yin Xu( 肝阴虚, deficiency of Yin of the liver ) and spleen Qi Xu( 脾气虚, deficiency of vital energy of the spleen ). 58 cases were studied in all, among which 38 cases were chronic liver diseases, comprising 10 cases of chronic active hepatitis, 6 cases of chronic persistent hepatitis, 15 cases of posthepatitic cirrhosis and 7 cases of schistosomiasis cirrhosis. All the cases were pathologically proved. 20 normal persons were studied as control. The patients with chronic liver diseases were again subdivided into three groups: namely, liver Yin Xu, spleen Qi Xu and Shi Zheng( 实证, excessiveness symptom-complex — the occurrence of dampness and heat ).