

# 肾阳虚患者头发微量元素锌、铜变化

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**内容提要** 本文通过对 41 例肾阳虚患者不同疾病头发微量元素的分组对比观察, 探讨微量元素与“证”和“病”之间的关系。发现肾阳虚患者在不同疾病头发锌含量有相同的改变, 比对照组明显降低 ( $P < 0.001$ ), 显示肾阳虚证与锌的低下有关。克汀病组头发铜含量比对照和骨质增生组均明显降低 ( $P < 0.001$  及  $0.01$ ), 克汀病和骨质增生所产生的病理变化和临床表现与这两种不同疾病对某些微量元素含量的减少或增多以及影响人的正常代谢有关。

中医学认为: “肾其华在发”。头发是探讨肾虚证本质较理想的活体组织。为了观察肾阳虚患者不同疾病中头发微量元素的改变, 探讨微量元素与“证”和“病”的关系。本文对地方性克汀病肾阳虚患者与骨质增生肾阳虚患者及正常健康人头发微量元素进行分组对比观察, 现报道如下。

## 对象与方法

对象分三组, 地方性克汀病肾阳虚组 (简称克汀病组) 23 例, 男 11 例, 女 12 例。年龄 13~27 岁, 经 X 线检查均有骨骼生长迟滞, 骨骺发育障碍, 颅骨蝶鞍面积增大; 血清甲状腺素  $T_4$  明显低于正常人, 确诊为地方性克汀病并具有“肾阳虚者”。骨质增生肾阳虚组 (简称

骨质增生组) 18 例, 男 11 例, 女 7 例。年龄 36~68 岁。经 X 线摄片检查, 有明显骨质增生改变并具有“肾阳虚”者。以上两组中医辨证均按 1982 年广州“全国中西医结合虚证及老年病防治学术会议”制定的标准。正常对照组 22 例, 男 11 例, 女 11 例, 年龄 43~67 岁, 均除外心、肺、肝、肾、内分泌系统疾病及中医四诊辨证无“肾阳虚”的健康人。

方法采用电感耦合等离子体光电发射光谱法进行头发微量元素分析。

## 结果分析

肾阳虚患者不同疾病与正常对照组发中锌、铜、铁、镁、钙、铬、锰七种元素含量测定结果见附表。

附表 肾阳虚患者不同疾病头发微量元素测定 ( $M \pm SD$ )

组 别	Zn	Cu	Mg	Fe	Ca	Cr	Mn
对 照	317.49 $\pm 78.13$	15.34 $\pm 4.34$	416.64 $\pm 226.49$	145.37 $\pm 113.52$	1755.64 $\pm 1257.78$	1.43 $\pm 0.65$	1.92 $\pm 1.19$
克汀病	172.72*** $\pm 66.99$	8.0*** $\pm 3.37$	145.34*** $\pm 149.76$	117.39 $\pm 111.75$	1114.33* $\pm 635.41$	2.11* $\pm 1.09$	3.03 $\pm 2.40$
骨 质 增 生	158.31*** $\pm 57.24$	13.09 $\pm 6.59$	167.11*** $\pm 115.74$	62.22** $\pm 61.14$	862.54** $\pm 606.88$	1.14 $\pm 0.67$	1.63 $\pm 1.33$

注: \* $P < 0.05$  \*\* $P < 0.01$  \*\*\* $P < 0.001$

从表中可见克汀病组头发中锌、铜、镁含量比对照组明显降低, 差异非常显著 ( $P < 0.001$ ); 钙含量比对照组降低, 差异显著 ( $P < 0.05$ ); 铬含量比对照组增高, 差异显著 ( $P < 0.05$ ); 锰、铁含量与对照组相比, 无差异。骨

质增生组头发锌、镁含量与对照组相比明显降低, 差异非常显著 ( $P < 0.001$ ); 铁、钙含量与对照组相比明显降低, 差异显著 ( $P < 0.01$ ); 铜、铬、锰含量与对照组无差异。另外, 肾阳虚患者两组相比, 头发铜、铬、锰含量差异显

著 ( $P < 0.01$ ;  $P < 0.05$ ), 其它元素均无差异。

### 讨论与体会

本文对肾阳虚证患者头发中微量元素在克汀病和骨质增生不同疾病的变化进行观察, 结果发现锌含量在不同疾病肾阳虚患者均有明显降低, 差异非常显著 ( $P < 0.001$ )。《素问·金匱真言论》云: “夫精者, 身之本也”。肾精的充盈关系到生殖、生长、发育的能力、骨骼的坚固以及毛发的荣泽<sup>(1)</sup>。参与这些生理功能的酶系统, 多数是含锌酶。锌与中医肾气盛衰有密切关系。锌是碳酸酐酶、DNA 聚合酶、RNA 聚合酶等 80 余种酶的组成成分或激活因子, 直接参与核酸及蛋白质的合成, 在机体代谢及组织呼吸中占重要地位。锌与内分泌也密切相关, 动物实验证明, 缺锌后影响垂体促性腺激素的分泌, 促生长激素减少。国内外研究也证明, 人类缺锌也会发生类似病变, 导致生长发育障碍, 最后造成缺锌性侏儒<sup>(2)</sup>。本文克汀病组平均年龄 19.5 岁, 正处于生长发育阶段, 肾气旺盛之时, 而本组患者表现精气不足, 出现肾阳虚证。肾阳虚证者大多数有垂体—肾上腺—性腺功能低下<sup>(3)</sup>。本文显示头发锌含量降低与肾阳虚证有关。

铜是人体必需微量元素, 参与很多酶的合成及活化, 对体内电子的传递、氧化还原、组织呼吸、新陈代谢、内分泌腺机能、激素及神经递质的形成, 均有重要作用<sup>(2)</sup>。铜可维持中枢神经系统的正常生理功能, 缺铜可影响肾上腺皮质的功能, 引起贫血、骨骼缺损、脱髓鞘

和神经系统变性、色素沉着不良、毛发结构异常、生殖能力衰退和明显的心血管损害<sup>(4,5)</sup>, 与克汀病某些病变类似。作者认为: 克汀病和骨质增生所产生的病理变化和临床表现与这两种不同疾病对某些微量元素含量的减少或增多以及影响正常代谢有关。

通过对肾阳虚克汀病和骨质增生患者头发微量元素的对比观察, 发现在不同疾病肾阳虚证患者头发中微量元素锌低下是共同的改变, 其含量明显低于正常对照组 ( $P < 0.001$ ), 表明肾阳虚证与锌的低下有密切关系, 为肾阳虚证的“异病同治”提示一项客观指标。克汀病组和骨质增生组患者与铜、铁等的不同变化, 说明不同疾病对各种微量元素的吸收、利用、排泄不同, 而导致不同的病变, 因此临床采用辨病辨证相结合是必要的。初步认为: 头发微量元素分析为临床辨病辨证相结合, 探讨“异病同治”提供了新途径。

头发微量元素测定承蒙防疫站中心实验室大力协助, 谨此致谢。

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## 《全国中西医结合儿科学术交流会》征文通知

中国中西医结合研究会儿科专业委员会成立大会及学术交流会拟于1986年9月召开。征文内容为中西医结合临床、实验研究、中医儿科理论研究等。应征论文须未曾公开发表或在全国性学术会上发表过。每篇论文交全文一份(3000字以内)及摘要二份(500~1000字)。来稿一律用方格稿纸, 图表清楚, 书写正规, 请自留底稿, 不退稿。文章要求经本省市分会筛选加盖分会图章后按以下分工寄送。

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截稿日期: 1986年3月31日, 以邮戳为准, 过期不受理。

# **Preliminary Report of Observation on Therapeutic Effect in Chronic Active Hepatitis**

## **Treated with Short Wave Infrared Information Radiotherapy**

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This paper reports the beneficial therapeutic effect in 40 cases of chronic active hepatitis (CAH) treated with short wave infrared information radiotherapy (SWIIR). The total effective rate was 67.5 %. The elevated serum ALT (SGPT) in 20/22 cases (91 %) in the group of CAH with no hepatic cirrhosis normalized after SWIIR, while only 5/12 cases (42 %) in the group of CAH with hepatic cirrhosis eventually became normal again. After treatment, the abnormal ratio of serum albumin and globulin of former group was corrected, the high levels of  $\gamma$  globulin and IgG in most cases were decreased, and ANA, RF, CIC and AFP were converted to negative in most cases, but the levels of CH50 and C3 were elevated, and response to OT test was enhanced. The mechanism of SWIIR possibly was regulating the function of immunological system and promoting the blood circulation and relieving the stasis.

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## **Observation on the Therapeutic Effect of Shock of 272 Epidemic Hemorrhagic Fever Patients Treated with TCM-WM**

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272 cases of shock of hemorrhagic fever have been studied. Observation was made on clinical manifestation and laboratory findings. The main observation was made on the nail-fold microcirculation, the blood picture, the blood coagulation, the hemorrheological determinations and immunologic function tests. The patients were divided into two groups: One group was treated with combined therapy of TCM and WM, and the other group with WM exclusively, serving as control. The former group proved to be superior to the latter one, with better therapeutic results and lower mortality.

Several important points were discussed: (1) Decoction of Sheng Mai San (生脉散煎剂) was effective for emergency case of Yin Tuo (阴脱, exhaustion of Yin), while Shen Fu Decoction (参附汤) was effective for emergency case of Yang Tuo (阳脱 exhaustion of Yang) too. (2) These two prescriptions possess cardiogenic and vasopressing function, and enhance the cell-mediated immunity. (3) Experiments showed that in patients with hemorrhagic fever, there existed stagnation in microcirculation. *Salvia miltiorrhiza* is important to promote the blood circulation and remove the blood stasis.

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## **The Change of Trace Elements Copper and Zinc in Hair of Kidney Yang Deficiency Patients**

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In this paper the contents of hair trace elements from 41 cases of kidney Yang deficiency patients with different diseases were observed in several groups. The relationship between trace element and syndrome as well as disease was explored. It was found that the zinc contents in hair of kidney Yang deficiency patients with different diseases changed in the same way. Compared with normal group, the zinc decreased significantly ( $P < 0.001$ ). This indicated that the patho-physiological changes of kidney Yang deficiency patients was relevant to the low zinc contents, which seems to be an objective indicator for the "treat different diseases with same method" of kidney Yang deficiency syndrome. In the group of endemic cretinism patients copper contents were lower than normal and hyperostosis groups ( $P < 0.001$  and  $P < 0.01$  respectively). The pathological changes and clinical manifestations caused by these two diseases were correlated with the increase and decrease of trace element contents and the influence on normal metabolism. The author took that analysis of trace elements in hair gave a new approach to the combination of "syndrome differentiation" and "disease differentiation", as well as the investigation of "treat different diseases with same method" principle.

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