

# 冠心病中血浆雌二醇、睾酮的变化及中药治疗的影响

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冠心病的发病原理迄今未阐明, 一些病人并无常见的易患因素, 也发生了冠心病。近年报道年龄较轻的男性冠心病病人血中雌激素增高, 提出了性激素环境和冠心病发病关系<sup>(1~8)</sup>。两年来我们对此问题进行了探索, 研究的目的是: 1. 男性冠心病病人血浆雌二醇、睾酮及二者比值的变化。2. 中医辨证和性激素之间的关系; 3. 以“治本”为主的中药对冠心病的疗效及其对血浆性激素的影响。现报道所获得的初步结果。

## 研究对象和方法

正常组: 40岁以上男性, 无心、肺、肝、肾及内分泌等疾病。血压正常, 无明显虚证的症候, 40~49岁, 50~59岁和60岁以上各10例, 用放射免疫法测血浆雌二醇(E<sub>2</sub>)和睾酮(T)。

男性冠心病, 心绞痛病人18例, 平均年龄66岁, 中药治疗前后测血浆雌二醇和睾酮。另有2例男性、5例女性冠心病、心绞痛病人, 也同样用中药治疗, 未作性激素测定。因此用中药治疗的共25例。全部病人都符合全国冠心病会议(1973年)诊断标准。其中12例为陈旧性心肌梗塞。心绞痛分型: 重度4例, 中度11例, 轻度10例。按中医辨证, 22例为阳虚或气虚, 3例为气阴两虚偏阴虚。20例男病人中17例有性欲减退、阳痿、腰酸、腿软、头晕、耳鸣等肾虚表现, 4例有男性乳房发育。

治疗: 除临时含用硝酸甘油外, 主要采用中药治疗, 阳虚主方: 附子3~9g 肉桂3~9g 仙灵脾15g 党参9~15g 黄芪9~15g 茯苓9~15g 陈皮6~9g 麦冬9g 桃仁9g 瓜蒌15~30g 丹参15~30g 炙草6~9g。气阴虚主方: 党参9~15g 麦冬9g 五味子3~6g 生地9~15g 白芍9g 枸杞9g 仙灵脾15g 陈皮6~9g。在治疗前后测血浆E<sub>2</sub>和T。一般疗程在半年至2年。

另有8例急性心肌梗塞病人, 在起病的第3周测了血浆E<sub>2</sub>和T。

## 结 果

### 一、正常人血浆E<sub>2</sub>、T(表1)

表1 40岁以上正常男性血浆E<sub>2</sub>、T、E<sub>2</sub>/T比值

年 龄 (岁)	E <sub>2</sub> ( $\bar{X} \pm SE$ ) (pg/ml)	T( $\bar{X} \pm SE$ ) (ng/100ml)	E <sub>2</sub> /T 比值
40~49	36.9 ± 8.87	644 ± 51.03	0.006 ± 0.002
50~59	40.7 ± 6.3	565 ± 48.31	0.008 ± 0.002
60以上	48.5 ± 14.34	555 ± 25.35	0.009 ± 0.002
均值	42.23 ± 3.82	588 ± 25.13	0.0076 ± 0.0010

注: E<sub>2</sub>/T 比值的计算是将 E<sub>2</sub> 值 × 10<sup>6</sup>, 换算成 ng/100ml 后与 T 之比。

### 二、心绞痛病人血浆E<sub>2</sub>、T(表2)

表2 心绞痛病人治疗前后血浆E<sub>2</sub>、T、E<sub>2</sub>/T比值

		E <sub>2</sub> ( $\bar{X} \pm SE$ ) (pg/ml)	T( $\bar{X} \pm SE$ ) (ng/100ml)	E <sub>2</sub> /T 比值
心绞痛 (n=18)	治前	108.17 ± 11.23	683.89 ± 66.73	0.018 ± 0.0023
	治后	56.33 ± 6.60	680.39 ± 54.70	0.0085 ± 0.00276
正 常 组 (n=30)		42.23 ± 3.82	588 ± 25.13	0.0076 ± 0.0010

治疗前血浆E<sub>2</sub>高于正常, T与正常值接近, E<sub>2</sub>/T比值明显高于正常, 中药治疗后, E<sub>2</sub>下降, E<sub>2</sub>/T比值也降低。与治疗前比P值皆<0.01。

三、急性心肌梗塞组血浆E<sub>2</sub>、T在发病第3周测定结果, E<sub>2</sub>略低于正常(39.8 ± 9.5pg/ml), T也较正常为低(498.33 ± 63.85ng/100ml), E<sub>2</sub>/T比值略高于正常(0.009 ± 0.002)。

四、中药对冠心的临床疗效: 25例中, 对缓解心绞痛有显效者5例, 改善15例, 无效5例。虚证的症候, 如畏寒、肢冷、乏力、腰酸、腿软、气短等均有不同程度的改善。阳虚病人原来 cAMP/cGMP 比值下降, 治疗后上升。

## 讨 论

雌激素和冠心病之间的关系已有许多研究<sup>(4)</sup>,如更年期前女性冠心病的发病率低,而更年期后发病率增高<sup>(5)</sup>,患第Ⅱ型高脂蛋白血症的更年期后的妇女,用雌二醇治疗可使血浆低密度脂蛋白降低,高密度脂蛋白升高,血浆总胆固醇下降<sup>(6)</sup>,而另一些事实证明雌激素对心血管病有不利的影响,如患前列腺癌的病人,服雌激素达18个月,心肌梗塞的发病率增高<sup>(7)</sup>,服避孕药的妇女,血栓性静脉炎和冠心病的发病率增加<sup>(8~9)</sup>。

雌激素对冠心病不利的原因还不清楚,有人认为雌激素可能影响糖和脂肪代谢,使葡萄糖耐量和胰岛素反应不正常,并促使胆固醇、甘油三脂升高<sup>(10)</sup>;另一方面雌激素可能促进血管内血液凝固。

心肌梗塞后存活病人血浆雌激素增多究竟发生在心肌梗塞以前还是以后,是心肌梗塞的因还是果,目前尚不能肯定。因为病人都是在心肌梗塞发生后数月才进行性激素检查的。Phillips 根据病人的一些女性化表现,阳痿等在心肌梗塞前已发生,推测雌激素增高发生在心肌梗塞之前<sup>(1)</sup>,本文对数例心肌梗塞后3周的病人所测结果 $E_2$ 不高,反而略低于正常,和陈旧性心肌梗塞病人有区别。这种现象的原因还不明,有

待于对更多的冠心病病人进行系统的观察,才能明确雌激素等增高和心肌梗塞的因果关系。

按照中医传统理论与多数中医的意见,冠心病的外在表现主要为气滞血瘀及/或痰浊壅阻,而其本质是虚证,尤其是肾虚<sup>(11)</sup>。本组20例男病人中17例有肾虚表现,中医“肾”的职能由现代医学观点看来,包括肾脏、内分泌、骨骼等方面的功能,和性腺功能更有密切关系,例如年老肾衰时,性腺功能低下,本文30例正常人的 $E_2$ 、T测定说明,年龄愈大,血浆 $E_2$ 愈高,而T有下降的趋向, $E_2$ /T比值逐渐上升,因此男性 $E_2$ /T比值的上升似乎可以认为是肾虚的指标之一,所以肾虚、 $E_2$ /T比值和冠心病之间的关系是一个值得注意的问题。

本文18例男性心绞痛病人血浆 $E_2$ /T比值高于正常人。如何使 $E_2$ /T比值下降并希望由此对冠心病起治疗作用,是一个困难的问题,一些激素制剂如雄激素,孕酮类,即达不到上述目的,其本身又有副作用。而中药补肾益气助阳治疗在使虚证症状好转的同时,心绞痛也减轻,而且 $E_2$ /T比值、cAMP/cGMP比值都趋向于恢复正常,充分说明中医中药的优越性。如果和针对冠心病的西医治疗措施联合应用,可望进一步提高冠心病的疗效。

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## Abstracts of Original Articles

### A Comparative Study of the Functions of Hypothalamus-Pituitary-Thyroid Axis between Elders and Patients with "Deficiency of Shen Yang"

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In this paper the functions of hypothalamus-pituitary-thyroid axis in 10 elderly males averaging 69 years old and 10 patients averaging 54 years old with chronic bronchitis and the symptom complex of deficiency of Shen Yang (DSYa, the vital function of Kidney according to TCM) were observed. 10 patients averaging 55 years old with chronic bronchitis but without symptom complex, i.e. "non-manifestation of symptom complex (NMSC)" were also examined. The results are as follows: The average concentrations of serum total T<sub>4</sub> in the elders and the serum T<sub>3</sub> in the patients with DSYa were significantly lower than those in the normal adults respectively. The serum T<sub>3</sub> levels of 4 patients with DSYa were all below 68 ng/dl and were diagnosed as low T<sub>3</sub> syndrome. There were no significant differences in serum T<sub>3</sub> and T<sub>4</sub> levels between the patients with NMSC and the normal adults. The TRH stimulating test was abnormal in 8 of the 10 elders predominated by the weak response to TRH, in 5 of the 10 DSYa patients with delayed reactions and in only 1 patient with NMSC. The comparison of the abnormalities occurring in the thyroid axis in the elders and the patients with DSYa or NMSC showed that there was no significant difference between the elders and the patients with DSYa ( $P > 0.05$ ), but there was significant difference between the patients with NMSC and both the elders and the patients with DSYa ( $P < 0.05$ ). This suggests that premature senility appeared in the functions of thyroid in the patients with DSYa.

After the treatment by the "regime of tonifying Shen" in conjunction with the improvement of clinical features, the functions of hypothalamus-pituitary-thyroid in the DSYa patients with chronic bronchitis recovered to a certain degree. This is particularly true in the function of the target gland (thyroid). This suggests that the "regime of tonifying Shen" could prevent ageing diseases and postpone the occurrence of senility in patients with DSYa.

(Original article on page 9)

### Plasma Estradiol and Testosterone Concentrations in Patients with Coronary Artery Disease and the Effect of Treatment with Chinese Medicinal Herbs

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25 cases of coronary artery disease (20 males, 5 females) were treated by Chinese medicinal herbs (Nitroglycerine was given sublingually during anginal attacks). According to the diagnosis by TCM, 22 cases had either "Yang Xu" (阳虚) or "Qi Xu" (气虚), and 3 cases had both "Qi Xu" and "Ying Xu" (阴虚), with "Ying Xu" predominant. 17 male patients had manifestations of "Xu" in the "Kidney", such as impotence, lumbago, weakness of legs, tinnitus and dizziness. 4 had also gynaecomastia.

In 18 male patients (average age 66 years), the plasma estradiol (E<sub>2</sub>) and testosterone (T) concentrations and their ratio (E<sub>2</sub>/T) were determined before and after the treatment. The plasma levels of 30 normal males aged over forty were also measured and served as controls. In addition, the plasma E<sub>2</sub>, T levels and E<sub>2</sub>/T ratio of 8 cases of acute myocardial infarction were measured in the third week of hospitalization. Before the treatment, the mean plasma concentrations of E<sub>2</sub> and T in the 18 male patients were  $108.17 \pm 11.23$  pg/ml ( $\bar{x} \pm SE$ ) and  $683.89 \pm 66.73$  ng/100ml respectively, with a E<sub>2</sub>/T ratio of  $0.018 \pm 0.0023$ . After the treatment, mean E<sub>2</sub> decreased to  $56.33 \pm 6.60$  pg/ml ( $P < 0.01$ ), mean T did not change significantly with a value  $680.39 \pm 54.70$  ng/100ml ( $P > 0.05$ ) and the E<sub>2</sub>/T ratio decreased to  $0.0085 \pm 0.00076$  ( $P < 0.01$ ). As a result of the treatment, symptoms such as intolerance to cold, coldness of extremities, lumbago, weakness, etc. showed varying degrees of improvement in most patients, and the frequency of angina decreased markedly. There was no significant change in the plasma sex hormone concentrations in the 8 patients with acute myocardial infarction.

The results of the present study show that male patients with angina due to coronary artery disease and manifestations of "Xu" in the "kidney" have elevated plasma E<sub>2</sub> concentration and increased E<sub>2</sub>/T ratio. After the treatment by Chinese medicinal herbs, these increases can be significantly brought down along with a decrease in the frequency of anginal attacks and an improvement of the plasma sex hormones may represent biological indicators of "Xu" in the "Kidney" in terms of the TCM.

(Original article on page 13)