

# 助阳中药对正常雄性大鼠肾上腺皮质、睾丸及甲状腺激素浓度的影响

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**内容提要** 本文报道了附子、肉桂、仙灵脾、肉苁蓉 4 药单独及联合应用对正常雄性大鼠血皮质酮(B)、睾酮(T)及三碘甲腺原氨酸( $T_3$ )浓度的影响。4 药均有提高B的作用,以肉苁蓉最为显著( $P<0.001$ );肉桂升高T ( $P<0.05$ );但附子、肉桂使 $T_3$ 下降( $P<0.01$ 及 $P<0.05$ ),附子使 $T_3$ 显著降低,可能为机体对附子的毒性的适应性保护机制。4 药联合应用并不是4 药作用的叠加,而是基本上反映了4 药的平均作用,其中可能有相互制约的机制。

以往的实验研究发现用助阳药附子、肉桂、仙灵脾、肉苁蓉后正常小鼠御寒能力降低<sup>(1)</sup>,并可干扰正常大鼠甲状腺激素代谢的平衡<sup>(2,3)</sup>。本文拟进一步将此4 药混合与各药分开单独应用相比较,以观察并分析这些药物对正常雄性大鼠血肾上腺皮质糖皮质激素(皮质酮,简称B)、睾丸激素(睾丸酮,简称T)及活性甲状腺激素(三碘甲腺原氨酸,简称 $T_3$ )浓度的影响。

## 材料和方法

### 一、助阳药:

混合药组:附子、肉桂、肉苁蓉、仙灵脾各100g,水煎1小时,将药液滤出,药渣加水再煎1小时,合并二次煎液浓缩至200ml,置4℃保存,每毫升含生药总量2.0g,4 味药各为0.5g。

单味药组:共4组。将附子、肉桂、肉苁蓉、仙灵脾各100g,各按上法制备煎剂,制成4种煎剂,每毫升分别含附子、肉桂、肉苁蓉、仙灵脾0.5g。

二、动物分组:Wistar雄性大鼠250~300g,随机分成6组,每组4~6只。(1)对照组:每日灌生理盐水0.5ml;(2)、(3)、(4)、(5)为单味药组;每日分别灌附子、肉桂、肉苁蓉、仙灵脾煎剂0.5ml;(6)混合药组:每日灌混合剂0.5ml。

三、观察指标:所有动物均于灌药2个月后快速断头处死,收集躯干血,分2管,分离血浆及血清。用本所的放射免疫方法测定血浆B、T及血清 $T_3$ 。

## 结 果

一、动物饲药后一般状态:肉苁蓉组及混合药组大便开始较稀,附子组较为消瘦,混合药组较为活跃,

饲药2周后就观察不到与对照组一般状态上的差别。

二、血激素浓度:如附表所示。可见4味助阳药均有提高血浆皮质酮的倾向,肉苁蓉、仙灵脾及混合组达显著程度,尤以肉苁蓉为明显。肉桂及混合药组使血浆睾酮增高。4味助阳药均有使血清 $T_3$ 降低的作用,附子、肉桂及混合药组血清 $T_3$ 的下降达显著程度,尤以附子的作用最为峻烈。4味药混合所产生的效果并不是4味药作用的叠加,而是基本上反映了4味药的平均作用。

**附表** 单味及联合应用助阳中药对正常雄性大鼠血皮质酮、睾酮及 $T_3$ 浓度的影响 ( $M\pm SD$ )

组 别	n	B( $\mu g/dl$ )	T( $ng/dl$ )	$T_3(ng/dl)$
附 子	6	10.3 $\pm$ 2.8	131.5 $\pm$ 82.7	21.6 $\pm$ 5.1**
肉 桂	6	9.2 $\pm$ 2.2	183.0 $\pm$ 96.0*	37.8 $\pm$ 10.6*
肉 苁 蓉	4	13.2 $\pm$ 0.7**	90.7 $\pm$ 20.2	38.5 $\pm$ 16.5
仙 灵 脾	4	12.5 $\pm$ 5.0*	91.9 $\pm$ 63.7	46.3 $\pm$ 11.5
4 药混合	6	11.4 $\pm$ 3.7*	153.8 $\pm$ 60.4*	37.3 $\pm$ 6.2**
对 照	6	7.3 $\pm$ 2.2	91.4 $\pm$ 27.6	50.5 $\pm$ 8.0

注:与对照组相比: \* $P<0.05$ , \*\* $P<0.001$ , n为动物数

## 讨 论

附子、肉桂、肉苁蓉、仙灵脾4药联应用能使正常雄性大鼠皮质酮分泌增加,逐一分析,这4味药均有这种作用,而又以肉苁蓉及仙灵脾为明显。肉苁蓉性甘温,入肾经血分,补命门相火,滋润五脏,益髓强筋,治五劳七伤<sup>(4)</sup>。肾上腺皮质似有命门之功效,肾上腺皮质激素(在大鼠主要为皮质酮)分泌增加,可提高机体的应激机能。肉苁蓉升高血浆皮质酮的作用与补命门相火的功效颇为一致,这也可能是助阳药作用

机理的基础所在。

一般认为肉苁蓉及仙灵脾补肾壮阳，可治男子阳痿，但此2药并未能升高血浆睾酮，可能它们治阳痿的功效是直接兴奋神经性的。仙灵脾(淫羊藿)具有雄性激素样作用，其有效成分淫羊藿素( $C_{30}H_{48}O_{15}$ )给予动物可见交尾亢进，其机理为使精液分泌亢进，精囊充满后，刺激感觉神经，兴奋性欲，故不表现为血浆睾酮的升高。而附子、肉桂则补命门之火，治元阳不足，其壮肾阳作用是间接的，可能系通过增加血浆雄激素浓度之途径改善性功能。鉴于附子、肉桂也使血浆肾上腺皮质激素浓度有所升高，是否皮质酮类激素转雄激素增多尚待今后进一步探讨。

助阳药升高使血皮质酮及睾酮的浓度对正常雄性大鼠的生命活动是有益的，但它们使血清 $T_3$ 的浓度下降，却对正常机体不利。本文的结果与以前的实验资料<sup>(2,3)</sup>完全一致。助阳药对机体的效应是和机体本身的状态密切相关，即对有阳虚者，助阳药似可提高活性甲状腺激素( $T_3$ 、 $FT_3$ 、 $T_4$ )的浓度<sup>(5~7)</sup>，而对不虚者，较大剂量的助阳药反而抑制了活性 $T_3$ 的生成。本文进一步发现这种降低 $T_3$ 的作用主要是附子所致。附子的毒性早已有记载<sup>(8)</sup>但对其产生的机理尚未见文献报告。肉桂、附子均为辛甘大热之品，但这种热性至少并非通过提高体内活性甲状腺激素浓度，而使代谢加快而实现的。事实上正好相反，由于该两药的热性(机理尚不明)反而使 $T_4$ 向非活性的反 $T_3$ ( $rT_3$ )转化，活性 $T_3$ 因此下降<sup>(3)</sup>，以使内源性的能量代谢不至于加速

过快。故 $T_3$ 的下降似可认为是机体的一种保护性的适应机制。

4味助阳药的联合运用并不是它们的药理作用的简单相加，而是使原有各药的药性变得相对温和，具体表现为使皮质酮的升高低于单味肉苁蓉，睾酮的升高低于单味肉桂，而使 $T_3$ 下降的作用也远不如附子那样剧烈，这些反映了4药之间可能存在相互抑制与协调的关系，提示中药方剂的组成确有其独到的值得研究之处。

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## 消痔灵注射液治疗肉芽肿

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笔者用消痔灵注射液，局部注射治疗肉芽肿，取得满意疗效。举例报告如下。

孟某，男，43岁，干部。初诊1988年10月14日。患者7月初于左脚趾背侧中部起一紫疱，大小如豆，后渗出糜烂。经一般包扎处理后，创口结缔组织迅速增生，肉芽肿突起。由西医外科局麻下切除剪平，病理报告为“非特异性炎性肉芽组织”。经一周后复起如故。已反复剪除三次。查肿物头大蒂小，基底约1.2cm，高1cm，顶约1.8×1.8cm，表面颗粒不平，血性渗液淋漓，触之痛胀不已，穿着行走不利。

治疗方法：局部常规消毒后，以5号针头、2ml注射器抽取消痔灵与2%普鲁卡因，量2:1.5比例，

针头斜面向上，从基底沿皮肤刺入肿物中心，缓缓注入0.2~0.3ml，环周注射六点。注射约30min后，肿块表面变紫暗，渗溢凝止，表面撒祛腐生肌散少许，贴敷万应膏。3日后，肿块腐脱。7日后创面平复愈合。至今未发。

体会：共用上法治疗5例，未见毒副作用。若1次注射不能完全坏死脱落，可隔二日后再注1次，一般2次即可。消痔灵主要成分是明矾和五倍子提取物为鞣酸等，原主要用于治疗内痔。据笔者观察，肉芽肿局部注射后，能使血管纤维组织迅速凝固硬化，阻断血循，促进萎缩坏死脱落。也可应用于体表因瘀血水肿组织所形成的胬肉息肉。

**Study of the Biological Effect of Qigong Waiqi(气功外气)**  
**— A Preliminary Report of the Anti-Injurious Effect of Waiqi on Ozone Toxicity**

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This paper deals with the anti-injurious effect of Qigong Waiqi on ozone toxicity. NIH male mice were randomly divided into three groups, O<sub>3</sub> group, mice kept in 0.9 ppm O<sub>3</sub> in a special room 12 hours/day for 12 days; Qigong group received Waiqi from a Qigong master for 30 minutes every morning in addition to what O<sub>3</sub> group was treated; and a normal group for control. After 12 successive days, all the animals were decapitated and autopsy performed. Tissues taken from lung, liver, spleen and thymus were prepared for biochemical assay and microscopic examination. It was found that MDA content of lung and liver of O<sub>3</sub> group was much higher than those of the control group and Qigong group. On the contrary, GSH-Px activity was significantly ( $P < 0.001$ ) lower than those of the control and Qigong groups. Both the MDA content and GSH-Px activity between the latter two groups were not significantly different. Microscopic examination revealed severe interstitial pneumonia with marked edema of lung and prominent leucocytic infiltration in liver of O<sub>3</sub> group mice, but only slight changes were seen in Qigong group, so the differences were significant. The two immune organs of mice in O<sub>3</sub> group were reduced in size and weight. Microscopic examination of immune organs of O<sub>3</sub> group revealed thinner T lymphocyte population in cortex of thymus and periarterial sheath of spleen than those of Qigong group. These results clearly indicated that O<sub>3</sub> toxicity had exerted injury not only to lung but also to other organs and oxidative stress developed in the mice, and that Waiqi could protect animals from being injured by O<sub>3</sub>, probably through elimination of oxidative stress, which leads to the recovery of internal environment balance and the strengthening of adaptation ability.

(Original article on page 734)

**Effects of Yang(阳)-Restoring Herb Medicines on the Levels of  
 Plasma Corticosterone, Testosterone and Triiodothyronine**

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It had been found that Yang-restoring herb medicines Radix Aconiti Praeparata (AP), Cortex Cinamomi(CC), Herba Cistanchis(HC) and *Epimedium brevicorum* (EB) reduced the cold-resistant potential of normal mice and disturbed the balance of thyroid hormones in normal rats. The aim of this study was to further investigate the effects of these four herb medicines on the levels of plasma corticosterone (B), testosterone (T) and triiodothyronine (T<sub>3</sub>) in rats by administering herbs together (mixed group) or individually.

It was shown that all four Yang-restoring herbs tended to raise plasma B level and it was significant in HC, EB and mixed groups, especially in HC administered rats ( $P < 0.001$ ). Rise of plasma T level was seen in CC and mixed groups. All four herbs could decrease plasma T<sub>3</sub> level and it was significant in AP, CC and mixed groups, particularly evident in AP administered rats ( $P < 0.001$ ). This may be one of the adaptating-protecting mechanisms of normal organism against the toxicity of AP. Combination of the four herb medicines did not result in the cumulation of effects of the given medicines, however, this did reflect the average effect of these four herbs, which showed a restraining and harmonious relationship in a Chinese medical prescription.

(Original article on page 737)