

• 临床论著 •

# 麝香保心丸对冠心病患者 心功能影响的初步探讨

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**内容提要** 对22例冠心病患者作收缩时间间期、超声心动图观察和 Swan-Ganz 导管检查。并与硝酸甘油作比较，以探讨麝香保心丸的临床药理机制。结果提示：该药对心率无影响，但能明显缩短从用药后即刻至30分钟的 PEP 值( $P < 0.01$ )；在5~10分钟的 PEP/LVET 亦下降 ( $P < 0.05$ )；结合超声心动图检查能明显改善减弱的左室后壁活动度 ( $P < 0.01$ )；漂浮导管检查有增加心排出量的倾向性，提示本药作用迅速，并有较强的正性肌力作用和抗心肌缺血作用。关于该药对心前后负荷的影响尚有待于今后进一步探讨与研究。

麝香保心丸是一种新颖的治疗冠心病的良药。具有见效迅速，疗效确切及副反应小等优点<sup>(1,2)</sup>。本文以收缩时间间期 (STIs) 和超声心动图中左室后壁活动度的变化为指标，部分病例结合气囊漂浮导管检查，探讨麝香保心丸对心血管方面的临床药理机制。

## 资料与方法

一、一般资料：冠心病患者22例，按 WHO 标准诊断，男16例，女6例，年龄45~83岁，平均  $61 \pm 9$  岁。16例冠心病患者包括劳力性心绞痛12例，混合性心绞痛4例。其中2例为急性心肌梗塞恢复期，2例伴陈旧性心肌梗塞，3例伴有高血压性心脏病，1例伴有糖尿病。16例患者中 PEP/LVET 在治疗观察前皆呈异常增高；8例有不同程度的心脏增大；10例有左室后壁活动度减弱（男7例，女3例，年龄45~83岁，平均  $58 \pm 1$  岁）。其心功能分布是：I级5例，II级6例，III级2例，II~III级3例。另6例急性心肌梗塞患者病程在2天~1周者曾作漂浮导管检查。

二、STIs：1. 取上述 STIs 异常增高者16

例，分别作 STIs 研究。全部病例在疗效观察前，除必要时可用硝酸甘油外，应中止服用抗心肌缺血药至少3天。

2. 每次测定前患者至少需卧床休息15分钟，测其基础值，并用安慰剂作对照，而后再服麝香保心丸2粒或舌下口含硝酸甘油0.5mg，于隔周后同样时间分别记录服药后即刻、3、5、10、15、30分钟的 STIs 改变。

3. STIs 系用上海医用电子仪器厂生产的 SJ-41 型生理记录仪，以100mm/秒走纸速度同步作心电图、心音图和颈动脉搏动图，按常规方法至少测定5个心动周期的 HR、QS<sub>2</sub>、PEP、LVET 和 PEP/LVET，并取其均值以资比较。

三、超声心动图：对左室后壁活动度减弱的10例冠心病患者，应用上海超声波仪器厂生产的 SSZ-100 扇型、M型超声心动图机分别观察静息、安慰剂和服用麝香保心丸2粒后的变化，以作对比分析，测前准备如同 STIs。

四、漂浮导管检查：对6例病程在2~7天的急性心肌梗塞患者，应用美国 Mennen 公司生产的心脏监护系统和心排出量测定仪，用 Swan-Ganz 导管经左贵要静脉插入心脏以作血液动力学监护，并观察、记录服用麝香保心丸

2粒后的心血管效应。

## 结 果

由于药物试验前,安慰对照剂所得之数值与静息值相仿,故下列对照所用之值实为安慰剂所测之值。

一、麝香保心丸对 STIs 的影响:麝香保心丸与对照值相比,心率(HR)和电机械时间 $QS_2$ 均无明显改变,但是用药后即刻、3、5、10、15、30分钟PEP(喷血前期)缩短和LVET(左室射血时间)延长极显著( $P<0.01$ ),但PEP/LVET唯在5、10分钟缩短明显( $P<$

附表 麝香保心丸与硝酸甘油对16例冠心病患者STIs的影响

|    | 麝 香 保 心 丸 |              |           |            |            | 硝 酸 甘 油   |              |           |            |           |
|----|-----------|--------------|-----------|------------|------------|-----------|--------------|-----------|------------|-----------|
|    | HR<br>次/分 | $QS_2$<br>ms | PEP<br>ms | LVET<br>ms | PEP/LVET   | HR<br>次/分 | $QS_2$<br>ms | PEP<br>ms | LVET<br>ms | PEP/LVET  |
| 对照 | 71±9      | 400±27       | 133±21    | 266±23     | 0.51±0.11  | 73±10     | 391±44       | 129±25    | 266±25     | 0.48±0.15 |
| 1  | 69±9      | 401±28       | 123±26*   | 278±27*    | 0.47±0.10  | 72±10     | 395±37       | 126±25    | 269±27     | 0.47±0.12 |
| 3  | 70±8      | 400±29       | 117±28*   | 282±23*    | 0.45±0.12  | 78±13△    | 379±41       | 125±28    | 255±29*    | 0.49±0.13 |
| 5  | 68±8      | 397±39       | 114±25*   | 283±26*    | 0.41±0.12△ | 76±13     | 373±35       | 121±30    | 252±24*    | 0.48±0.11 |
| 10 | 70±9      | 400±41       | 118±25*   | 282±27*    | 0.42±0.11△ | 74±10     | 380±32       | 126±27    | 252±24*    | 0.50±0.14 |
| 15 | 68±9      | 400±30       | 124±24*   | 276±23*    | 0.45±0.11  | 74±6      | 386±35       | 129±25    | 257±25*    | 0.50±0.13 |
| 30 | 69±8      | 401±31       | 126±22*   | 275±27*    | 0.47±0.11  | 69±9      | 396±36       | 133±34    | 263±28     | 0.50±0.15 |

△  $P<0.05$

\*  $P<0.01$

0.05),见附表。

二、硝酸甘油对 STIs 的作用:由附表可见,口含硝酸甘油0.5mg后3~5分钟心率略增快,但3分钟时较明显( $P<0.05$ )。 $QS_2$ 、PEP和LVET皆略有缩短,但以LVET缩短为著( $P<0.01$ )。

三、麝香保心丸对左室后壁的活动度的影响:本组10例冠心病患者(其中2例为陈旧性心肌梗塞)均为伴有左心室后壁活动低下者。M型超声心动图可见左室后壁活动幅度明显低于正常(0.1~0.4cm),平均幅度 $0.28\pm0.09$ cm。服用安慰剂后无变化(0.1~0.4cm),平均 $0.30\pm0.12$ cm。含服麝香保心丸2粒后,观察30分钟内室壁活动均有不同程度的提高,多在3、5、10分钟左右达高峰(0.4~0.8cm),平均最大幅度为 $0.53\pm0.13$ cm,较静息时有显著差异。

四、麝香保心丸对6例急性心肌梗塞患者血液动力参考数的影响:见图1、2。

6例均为监护室急性心肌梗塞患者,在急

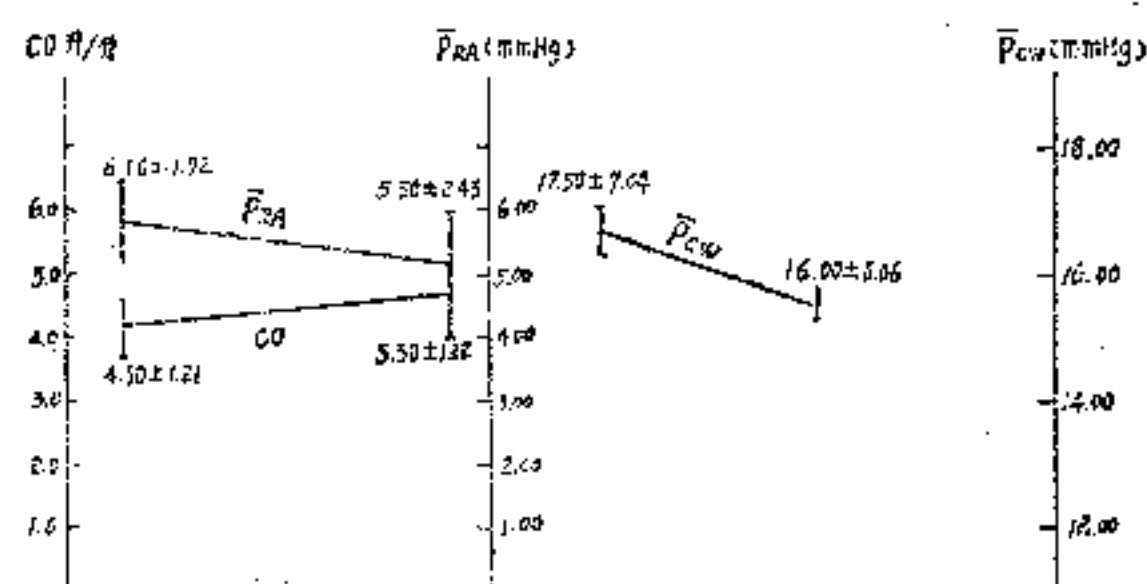


图1 麝香保心丸对心排出量、平均右房压及肺毛细血管楔压的影响

CO心排出量 PRA平均右房压 PCWP肺毛细血管楔压

性期,血液动力学监护条件下,观察麝香保心丸的效应。患者含服2粒麝香保心丸后即刻、3、5、15、30分测CO(心排出量),PCWP(肺毛细血管楔压),PRA(平均右房压),BP(外周动脉压),HR(心率)等等,并以最大变化值与用药前值作对照,结果出现:CO平均 $4.30\pm1.21$ 升/分提高到 $5.30\pm1.22$ 升/分。

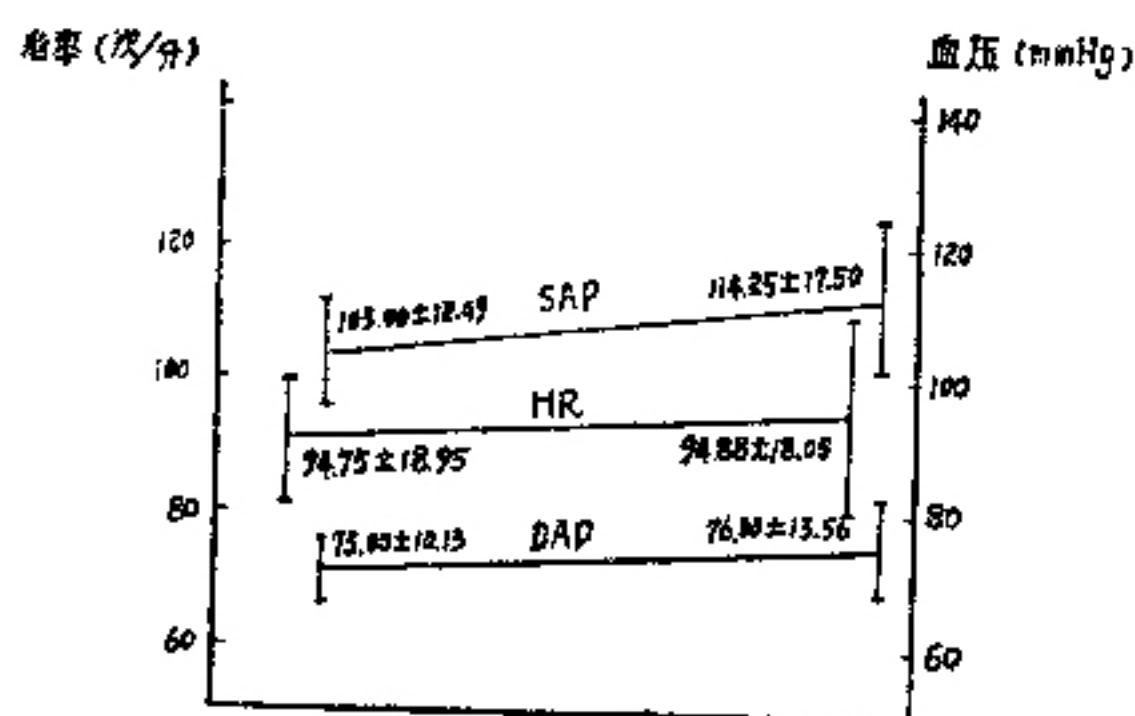


图2 麝香保心丸对心率、血压的影响  
SAP 收缩压 DAP 舒张压 HR 心率

PCWP 从  $17.50 \pm 7.04$  mmHg 降到  $16.00 \pm 6.06$  mmHg。PRA 从  $6.20 \pm 1.92$  mmHg 降至  $5.50 \pm 2.43$  mmHg。SAP (外周动脉收缩压) 从  $103.00 \pm 12.49$  mmHg 升至  $114.25 \pm 17.50$  mmHg。DAP (外周动脉舒张压) 从  $73.00 \pm 10.13$  mmHg 升高到  $76.00 \pm 13.56$  mmHg。HR 变化不大。

## 讨 论

中医学认为“气得温则行，得寒则凝，致有气滞血瘀，瘀则不通，不通则痛”。麝香保心丸由芳香温通药麝香、苏合香脂、冰片和补气强心药人参、蟾酥、牛黄等组成具有益气、温阳、芳香开窍之功效，故能产生通则不痛，从而可使心绞痛缓解、心功能改善。

STIs 的测定和超声心动图的检查<sup>[3~6]</sup>是评价药物对心血管效应的有价值的无创伤方法。STIs 的检测，有如其它指数一样，它反映心脏做功的变化。它的改变不仅与心肌收缩力有关，而且受前、后负荷和心率等各种因素中的任何一个或几个因素的联合作用的影响。

众所周知，硝酸甘油为公认的抗心肌缺血之药物，能扩张静脉以降低前负荷，扩张冠状动脉，以增加心肌血供。具有作用快，疗效好，持效短等特点，亦可反射性的引起心率增快。本文16例 PEP/LVET 异常增高患者，在用药3分钟后心率由  $73 \pm 10$  增至  $78 \pm 13$  次/分 ( $P < 0.05$ )。PEP 在口含药物即刻至30分钟者有轻度下降

倾向，但  $P > 0.05$ 。LVET 在3、5、10、15分钟与对照组相比明显缩短 ( $P < 0.01$ )，此可能主要与前负荷降低和心率增加有关。心肌缺血的改善及由扩血管反射性引起交感神经活性增高所造成的心收缩力增强，也许为前负荷下降所引起的心收缩力减弱所抵消，由于 PEP 和 LVET 在该用药组均有不同程度下降，故 PEP/LVET 无明显改变 ( $P < 0.05$ )。

在本组病例，麝香保心丸对心率无影响，但对 PEP 的缩短影响明显，PEP/LVET 在5~10分钟下降亦明显 ( $P < 0.05$ )，提示 PEP 下降甚于 PEP/LVET 的减少 (不成比例的减少)，结合漂浮导管检查本药有增加心排出量的倾向，提示本药可能尚有强心作用，此为硝酸甘油所不及。而麝香保心丸能改善左室后壁活动这一效应，提示本药除了具有可能的强心作用外，且有抗心肌缺血作用。此种强心作用的获得可能与其能改善心肌缺血和本身具有正性肌力作用有关。漂浮导管测定提示本药对 PCWP、PRA 略有下降作用，似有降低前负荷的倾向，但由于病例过少，尚难根据现有资料对前后负荷影响作出确切的结论，此点有待于今后进一步探讨和研究。

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## Abstracts of Original Articles

### Hemodynamic Consequences of the Heart Protecting Musk Pill and Its Efficacy on the Left Ventricular Performance of Coronary Heart Disease

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Heart Protecting Musk Pill (Musk Pill), as proved both pharmacologically and clinically, has become a good effective remedy for coronary heart disease. Double blind study in a comparison study between Musk Pill and the foreign made analogous products showed a similar effect and the side effects of the former is less than that of the latter. The purpose of this study is to confirm the anti-ischemic effect of the Musk Pill and its hemodynamic efficacy. The Musk Pill's anti-ischemic effect and its hemodynamic efficacy was observed during STI (Systolic Time Interval) recording, echocardiographic imaging and Swan-Ganz catheter examining for 22 CHD patients in comparison with nitroglycerine and placebo.

Results showed that Musk Pill can improve myocardial ischemia rapidly and normalize the abnormal left ventricular wall motility after the administration. There was a significant improvement of the weakened left posterior wall motility after the medication (from  $0.28 \pm 0.09$  to  $0.53 \pm 0.13$  cm,  $P < 0.01$ ), but no influence with the placebo ( $0.30 \pm 0.12$  cm,  $P > 0.05$ ). The PEP intervals shortened ( $P < 0.01$ ), LVET intervals prolonged significantly ( $P < 0.01$ ) immediately and 3, 5, 10, 15, 30 minutes after the remedy.

Hemodynamic study showed that it seems to have a reducing preload efficacy and an increasing of the left ventricular systolic ejection, which benefits an ischemic heart in both compensatory and failed stages. Since the mean right atrial and pulmonary wedge pressure somewhat reduced after the Musk Pill administration, its probable vasodilator-like effect would be studied further. (Original article on page 329)

### The Observation of Parameters on Hematology in Thromboangiitis Obliterans of Blood Stasis Syndrome

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Thromboangiitis obliterans (TAO) is considered as a blood stasis syndrome in TCM. In searching for its objective parameters of modern science and the substantial basis of blood stasis and thrombosis, 14 parameters reflecting hypercoagulation and anticoagulation, platelet functions, coagulation dynamics and blood rheology were determined in 12~109 TAO patients. 10 out of 14 parameters were significantly abnormal ( $P < 0.05 \sim 0.01$ ). Among them, the elevation of fibrinogen in the progressive stage, the elevation of PAdT and PAgT, the elevation of viscosity of whole blood and plasma and prolongation of the time of RBC electrophoresis were principally coincident to the data reported. Besides, 4 parameters were significantly abnormal, i.e., the marked elevation of HPF, VIII R:Ag and  $\alpha_2$ -MG, and the reduction of AT-III. Therefore, these 4 parameters could be considered as the supplemental parameters of blood stasis syndrome. Furthermore, the injury of vascular endothelium could be reflected from the amount of VIII R:Ag, which indicated the close relationship between the formation of blood stasis syndrome and the immunoresponse injured vascular endothelium, and that was presumed most probably as the substantial basis of blood stasis syndrome and thrombosis. (Original article on page 332)

### Comparative Effectiveness of Chinese H<sub>4</sub> and Liu Wei Di Huang Wan (六味地黄丸) in the Treatment of Female Climacteric Syndrome

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Observations on the comparative effectiveness of Chinese H<sub>4</sub> (CH<sub>4</sub>) and Liu Wei Di Huang Wan (LWDHW) on patients with menopause after surgery, menopause by nature for 2 years, and female climacteric syndrome before and after menopause, show identical rates of marked improvement and effectiveness, which are 39% and 61% respectively. Long-term intake for one year gives steady results. Change of FSH, LH, E<sub>2</sub> levels before and after CH<sub>4</sub> are not statistically significant ( $P > 0.05$ ), whereas in the case of LWDHW group, FSH declines ( $P < 0.05$ ), E<sub>2</sub> increases ( $P < 0.05$ ), but there is no change in LH. Maturation value of exfoliative cells of vaginal epithelium in the two groups do not show significant changes. The mechanism of action of CH<sub>4</sub> is mediated through the cellular increase of cAMP which enhances the action of traces of estrogen present in the body; LWDHW probably acts through the hypothalamic-pituitary-gonadal axis. (Original article on page 336)