硝酸甘油与丹参对心脏病患者血液动力学的影响

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内容提要　本文报告20例心功能均在正常范围的心脏病患者，用Swan-Ganz导管，对比测定了舌下含硝酸甘油0.3 mg和静脉注射复方丹参注射液4 ml之后，其即刻及15、30、45 min的肺毛细血管嵌楔压(PCW)、肺动脉平均压(MPAP)、心脏排血量(CO)、心排血指数(CI)、体表平均动脉压(SMP)及心率(HR)的血液动力学变化。发现两种药物都有扩张血管、降低左室充盈压和增加心排血量的作用；但作用出现的时间及持续时间不同，特别是CO、CI的增加，丹参明显优于硝酸甘油，作用较持久，值得临床选用。

关键词　硝酸甘油　复方丹参　血液动力学

硝酸甘油是血管扩张药，它有直接松弛平滑肌作用，能扩张冠状动脉，增加冠脉循环的血流，降低心脏的前、后负荷。而丹参则是从丹参的干燥根部提取制成的注射剂，它也有扩张冠状动脉、增加冠脉血流、改善心肌供血和心功能作用。本研究用该两种药物，对四种心脏病患者作自身对比研究，观察了肺毛细血管嵌楔压(PCW)、肺动脉平均压(MPAP)、心排血量(CO)、心排血指数(CI)的血液动力学变化。同时记录了全身体表动脉平均压(SMP)及心率(HR)变化，总结如下。

资料与方法

一、资料　20例，其中男13例、女7例。年龄22～63岁，平均52.35岁。冠心病9例，心肌病及慢性心肌炎4例，病态窦房结综合征(SSS)4例，永久埋藏起搏安装术后3例。心功能都在正常范围之内。

二、方法　(1)全部患者在检查前2周内均未服用任何血管扩张剂。(2)常规消毒，从股静脉或贵要静脉穿刺，引入7 F Swan-Ganz导管，在压力监视下(USA，Goud公司产SP 1405 Pressure mornitor)，将导管送到肺微测压后放气，使导管弹回到肺动脉测压，再给患者静脉注入4℃的5%葡萄糖注射液10 ml，用SP 2009 Cardiac Index Computer记录温度曲线，观察CO、CI，并同时记录PCW、MPAP、SMP及HR。(3)舌下含国产硝酸甘油0.3 mg于即刻及15、30、45 min时分别复查上述指标。(4)上述检查完毕后休息1 h，使测得的各项指标接近含硝酸甘油前的水平。(5)上海产复方丹参注射液4 ml(含丹参、降香各4 g)稀释到10 ml静脉注射，5 min注完，于即刻及15、30、45 min时分别观察与记录上述指标。

结　果

一、四种不同的心脏病患者对硝酸甘油与复方丹参的反应无明显差别($P>0.5$)。

二、PCW、MPAP　含硝酸甘油后都即刻下降，下降幅度和丹参比较差异不大，但硝酸甘油组15 min后PCW再无明显下降，并逐渐恢复至原来水平；而丹参组则延续到45 min时下降幅度达最大，与硝酸甘油有明显差异($P<0.01$)，见附表。

三、CO与CI　含硝酸甘油后CO、CI立即有较明显的下降，15 min后恢复，并有轻度增高趋势。而丹参即刻变化明显不同于硝酸甘油($P<0.001$)，最初轻微升高，用丹参后45 min时CO、CI升高幅度比用药前增高50%左右，见附表。

四、SMP和HR　两组都有轻微下降，

附表　硝酸甘油与复方丹参的血液动力学比较　($\bar{x}\pm S$)

组别		PCW (kPa)	MPAP (kPa)	CO (L/min)	CI (L/min · m²)	SMP (kPa)	HR (次/min)
硝酸甘油	用药前	0.98±0.14	1.49±0.18	5.72±0.81	3.49±0.36	11.65±0.64	55.70±4.61
	用药后即刻	0.60±0.06	0.76±0.06	2.51±0.76	1.52±0.13	11.53±0.98	42.00±1.68
	15 min	0.83±0.04	0.99±0.24	5.94±1.26	3.56±0.62	11.45±0.93	58.32±6.57
	30 min	0.90±0.07	1.08±0.19	6.25±0.75	3.72±0.41	11.54±1.36	48.80±7.62
	45 min	1.01±0.17	1.20±0.17	7.33±1.02	4.40±1.89	11.44±1.19	54.50±3.55
复方丹参	用药前	1.10±0.11	1.47±0.20	5.45±0.99	3.32±0.49	11.80±0.72	61.63±9.01
	用药后即刻	0.81±0.05	0.67±0.03	5.89±0.83**	3.41±0.24**	12.10±1.02	54.67±8.72
	15 min	0.83±0.06	1.05±0.13	6.59±0.75	4.01±0.36	11.61±1.06	56.92±4.16
	30 min	0.75±0.04	0.99±0.07	6.94±1.31	4.32±0.77	11.24±1.07	59.56±4.86
	45 min	0.68±0.06*	0.76±0.20	8.02±1.10	4.98±1.73	10.98±1.47	54.00±4.14

注：与硝酸甘油组 45 min 时比较，*$P<0.01$；与硝酸甘油组即刻时比较，**$P<0.001$

但都无统计学意义.

讨　论

据文献报道，硝酸盐类明显地降低左室充盈压，并注意到心衰患者左室充盈压的最大降低是在小剂量药物投用时[1]。Parcker 认为硝酸盐类用到 2.5 mg 以后 CO、CI 就不再增加。本组患者含硝酸甘油 0.3 mg 后 PCW 和 MPAP 立即呈现下降，15 min 后下降幅度减慢，45 min 时逐渐恢复至原来水平。由此看出硝酸甘油口含对肺动脉压及左室充盈压的降低作用很短暂[2]，所以 PCW、MPAP 的降低，可能是因为血管扩张作用的缘故。

丹参注射后 PCW 和 MPAP 的下降幅度最大是在 45 min 时出现，比硝酸甘油稍慢，且持续时间长；这可能是由于复方丹参降压、扩张血管的机制是抑制了血管紧张素 II 的合成与释放而间接作用所致[3]。实践证明，复方丹参对降低肺动脉压力和左室充盈压的作用不亚于硝酸甘油，而且作用时间也长。

舌下含硝酸甘油后 CO、CI 水平初始是降低的[2]，本组观察中发现含硝酸甘油后短时间内 CO、CI 确实是降低的，但 15 min 后又开始增加。其增加的机制可能是硝酸甘油的后作用[2]。Berntein 报告硝酸甘油的作用分两期：第一期使冠状动脉及大血管扩张，冠状动脉阻力下降，冠状动脉血流增加；第二期则对全身循环作用为主，血压和 CO 降低，冠状血管阻力下降，冠脉血流也降到低水平[4]。

本组复方丹参注射后 CO、CI 没有即刻下降反而轻微升高，以后逐渐增加，45 min 时 CO、CI 比注射前增加 50%左右，说明复方丹参不但能扩张血管、降低 PCW 和 MPAP，还有增快血流，抗血小板聚集及抑制血小板释放，改善微循环包括心肌的微循环作用[5]。

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decreased, 4B4+ cells increased, 2H4+ cells did not markedly change after adding TCS. The raise of DNA content in S stage was dose-dependent to TCS, especially in large dose. It is concluded that TCS could selectively inhibit T8+ cells and could obviously increase the number of 4B4+ cells. It is suggested that TCS could enhance humoral immunity through the ratio of immunoregulatory T cells. So TCS might help immunodeficiency patients such as AIDS to reestablish their immune system.

Key words trichosanthin, immunoregulation, T lymphocyte, deoxyribonucleic acid content, systemic lupus erythematosus

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Clinical and Experimental Study of Benign Prostatic Hyperplasia with Intraglandular Injection of Chuan Shen Tong (川参通)

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1038 cases of benign prostatic hyperplasia (BPH) were treated by injection of Chuan Shen Tong (CST), a Chinese herbal medicine, into the prostate gland. At the end of treatment the effective rate was 96%. After the treatment the BPH with urodynamic measurement was studied and it was found that the peak flow rate and mean flow rate increased 18% and 41.8% respectively. Transabdominal and transrectal ultrasonographies were used to measure the shrinkage of prostate's size after the injection treatment to be 0.51 and 0.4 cm (mean diameter) respectively. Animal model of BPH was established by the testosterone propionate. The prostatic weight and prostatic index was measured in mice after the injection of CST, it significantly decreased compared with that of the control ($P < 0.01$). The pathological findings: The hyperplastic papillae disappeared and the body of prostate markedly shrank in size. Experiment dogs has been carried out for the prostate quantitative analysis. The result revealed that the prostate parenchyma and intercellular substance shrank to 26.8% and 4.5% respectively.

Key words Chinese herbal medicine, Chuan Shen Tong, benign prostatic hyperplasia

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Hemodynamic Study on Nitroglycerin Compared with *Salvia Miltiorrhiza*

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This report investigated the hemodynamic changes of both nitroglycerin and *Salvia miltiorrhiza* (Co.) concerning pulmonary capillary-wedge (PCW), mean pulmonary artery pressure (MPAP), cardiac output (CO), cardiac index (CI), systemic mean pressure (SMP), and heart rate (HR). In 20 patients with heart diseases of normal cardiac function, niltroglycerin were compared with *Salvia miltiorrhiza* (Co.) using Swan-Ganz Catheter, which were self-compared. Result: (1) Both drugs had the similar vaso-dilating effects, reduced the filling pressure of left ventricle and increased the cardiac output but different in the time of appearance and duration, particularly concerning CO and CI. (2) The effect of *Salvia miltiorrhiza* (Co.) was markedly superior to the nitroglycerin. The action of former was more persistant and the improvement of cardiac function was better than that of latter.

Key words nitroglycerin, *Salvia miltiorrhiza* (Co.), hemodynamic

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Effect of Ligustrazine on Plasma Lipid Peroxidation, Superoxide Dismutase of the Coronary Heart Disease

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A clinical study on 59 remote myocardial infarction cases were divided randomly into treated