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疏血通联合依那普利对老年慢性心力衰竭患者血清N末端钠尿肽前体水平、血液流变学与心功能的影响*

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摘要 目的：探讨疏血通联合依那普利老年慢性心力衰竭患者血清N末端钠尿肽前体水平、血液流变学与的影响。**方法：**选择2015年5月到2017年5月我院接诊的老年慢性心力衰竭患者84例作为研究对象，以随机数表法分为观察组(n=42)和对照组(n=42)，对照组使用依那普利治疗，观察组采用疏血通联合依那普利治疗。比较两组治疗后的临床疗效及治疗前后血液流变学、血清N末端钠尿肽前体、左室舒张末期内径(LVEDd)、左室射血分数(LVEF)、收缩末期内径(LVESD)水平的变化及不良反应的发生情况。**结果：**治疗后，观察组临床疗效总有效率显著高于对照组(95.24% vs. 73.81%，P＜0.05)，观察组全血高切黏度、全血低切黏度、血浆黏度、血沉、红细胞压积及纤维蛋白原水平均明显低于对照组(P＜0.05)，血清N末端钠尿肽前体水平、LVEDd、LVESD明显低于对照组低(P＜0.05)，而LVEF显著高于对照组(P＜0.05)。两组不良反应总发生率分别为4.76%(2/42)、16.67%(7/42)，组间比较无显著差异(P＞0.05)。**结论：**疏血通联合依那普利治疗老年慢性心力衰竭的临床效果显著优于单用依那普利治疗，可能与其显著降低患者的血清N末端钠尿肽前体水平，改善患者的心功能和血液流变学的各项指标有关

关键词：疏血通；依那普利；慢性心力衰竭；血液流变学；心功能

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Effect of Shuxuetong Combined with Enalapril on the Serum N-terminal Natriuretic Peptide Level, Hemorheology and Cardiac Function of Elderly Patients with Chronic Heart Failure*

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ABSTRACT Objective: To study the effect of Shuxuetong combined with enalapril on the serum N-terminal natriuretic peptide level, hemorheology and cardiac function of elderly patients with chronic heart failure. **Methods:** 84 cases of patients with chronic heart failure in our hospital from May 2015 to May 2017 were selected and divided into the observation group (n=42) and the control group (n=42) according to the random number table method, the control group was treated with enalapril, and the observation group was treated with dredged blood and enalapril. The clinical efficacy, changes of N-terminal natriuretic peptide level, hemorheology, left ventricular end-diastolic diameter (LVEDd), left ventricular ejection fraction (LVEF), end systolic diameter (LVESD) level before and after treatment and the occurrence of adverse reactions were compared between two groups. **Results:** After treatment, the total effective rate of observation group was significantly higher than that of the control group (95.24% vs. 73.81%, P<0.05). The total blood viscosity, total blood viscosity, plasma viscosity, blood sedimentation, erythrocyte deposition and fibrinogen of observation group were significantly lower than those in the control group (P<0.05). The serum N-terminal natriuretic peptide precursor level, LVEDd and LVESD were significantly lower than those of the control group (P<0.05). The LVEF was significantly higher than that of the control group (P<0.05). The total incidence of adverse reactions in two groups were 4.76%(2/42) and 16.67%(7/42) respectively, with no significant difference between the two groups (P>0.05). **Conclusion:** ShuXieTong combined with enalaprilat was superior to enalaprilat alone in the treatment of elderly patients with chronic heart failure, it could significantly reduce the level of serum N terminal natriuretic peptide precursor, improve the cardiac function and hemorheology.

Key words: ShuXieTong; Enalaprilat; Chronic heart failure; Hemorheology; Cardiac function

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前言

随着年龄的增长，心脏心室充盈或者泵血能力会逐渐下

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降,到一定程度后,会引起呼吸困难、乏力以及下肢水肿等心力衰竭的临床表现,严重老年人的生活质量[1-4]。目前,临床上对于该病治疗的重点是延缓心肌的重构的进展。依那普利是一种血管紧张素转换酶抑制剂，临床上常用来治疗慢性心力衰竭,但是效果不够明显。

疏血通可活血化瘀、通经活络,具有抗凝血和抗血小板聚集的作用,且能抑制血栓形成和溶栓[5,6]。有研究显示疏血通联合依那普利治疗老年慢性心力衰竭的临床疗效较单用依那普利更好[6,7]。为进一步明确其作用机制,本研究主要探讨了疏血通联合依那普利治疗的老年慢性心力衰竭患者血清 N 末端钠尿肽前体水平、血液流变学及心功能的变化,现将结果报道如下。

1 资料与方法

1.1 一般资料

选择 2015 年 5 月至 2017 年 5 月我院接诊的 84 例老年慢性心力衰竭患者进行研究,研究已获得我院伦理会批准。将患者通过随机数表法分为 2 组,每组各 42 例。观察组男 22 例,女 20 例;年龄 61~79 岁,平均(67.85± 5.62)岁;病程 1~6 年,平均(1.72± 2.85)年;心功能 NYHA 分级:I 级 15 例,II 级 20 例,III 级 7 例。对照组男 25 例,女 17 例;年龄 60~80 岁,平均(66.13± 6.95)岁;病程 1~7 年,平均(1.92± 2.95)年;心功能 NYHA 分级:I 级 14 例,II 级 19 例,III 级 9 例。两组性别 (P=0.510)、年龄(P=0.216)等一般资料比较差异均无统计学意义,具有可比性。

纳入标准:(1)年龄≥ 60 岁;(2)符合《欧洲心脏病学会(ESC)心力衰竭诊断指南》2016 版[8];(3)未合并肾、肺、肝等脏器重大疾病者。排除标准:(1)对本文药物过敏者;(2)存在精神疾病、沟通障碍者;(3)不配合本次研究,依从性差者。

1.2 治疗方法

两组患者入院后均使用常规抗血小板、调脂、硝酸酯、利尿剂等药物治疗。对照组采用依那普利片(规格:10 mg× 16 s;生产厂家：扬子江药业集团江苏制药股份有限公司；国药准字 H32026567)治疗,一次一片,一天一次。观察组采用疏血通联合依那普利治疗,疏血通注射剂(规格:2 mL;生产厂家:牡丹江友搏药业有限责任公司;国药准字 H20010100)6 mL 静脉输注,口服依那普利片,一次一片,一天一次。两组均治疗 2 周后进行疗效评价。

1.3 观察指标

于治疗前后使用 MVIS 全自动血液流变分析仪检测血液流变学指标,包括全血高切粘度、全血低切粘度、血浆粘度、血沉、红细胞压积及纤维蛋白原的变化;血清 N 末端钠尿肽前体水平采用德国西门子全自动化学发光仪检测;治疗前后使用超声心动图测量 LVEDd、LVEF、LVESD。心功能 NYHA 分级:体力活动不受影响,日常生活未产生心悸、呼吸困难为 I 级;体力活动轻度受限,静息时未产生不适为 II 级;体力活动明显受限,静息未产生不适但低于日常活动为 III 级。

1.4 疗效判定标准

显效:心功能恢复至正常,临床症状完全消失;有效:心率、心功能明显改善,临床症状明显好转;无效:临床无明显改善或加重。以显效 + 有效为总有效率。

1.5 统计学分析

采用 SPSS18.0 软件包处理数据，正态分布计量资料以均数± 标准差($\bar{x}$± s)表示,组间比较使用独立样本 t 检验,计数资料以率表示,组间比较采用 x^2 检验,以 P<0.05 表示差异具有统计学意义。

2 结果

2.1 两组临床疗效的比较

治疗后,观察组临床疗效总有效率为 95.24%,明显高于对照组的 73.81%(P＜0.05),见表 1。

表 1 两组临床疗效的比较[例(%)]

Table 1 Comparison of the clinical efficacy between the two groups [n(%)]

Groups	The number of cases	Effective	Valid	Invalid	Total effective rate
Observation group	42	22(52.38)	18(42.86)	2(4.76)	40(95.24)
The control group	42	18(42.86)	13(30.95)	11(26.19)	31(73.81)
P value			0.097		0.007

2.2 两组患者治疗前后血液流变学指标的比较

治疗前，两组血液流变学指标比较差异均无统计学意义(P＞0.05);治疗后,两组各血液流变学指标较治疗前均显著降低(P＜0.05),观察组全血高切黏度、全血低切黏度、血浆黏度、血沉、红细胞压积及纤维蛋白原水平均明显低于对照组 (P＜0.05),见表 2。

表 2 两组患者治疗前后血液流变学指标变化的比较($\bar{x}$± s)

Table 2 Comparison of the hemorheology index between the two groups before and after treatment($\bar{x}$± s)

Groups	The number of cases	Whole blood high cut viscosity (mPa·s)		Whole blood low cut viscosity (mPa·s)		The plasma viscosity(mPa·s)	
		Before the treatment	After treatment	Before the treatment	After treatment	Before the treatment	After treatment
Observation group	42	4.58± 1.06	4.12± 0.69	9.51± 1.24	8.36± 0.92	1.50± 0.21	1.21± 0.14
The control group	42	4.53± 1.10	4.97± 1.28	9.47± 1.13	9.25± 1.03	1.51± 0.25	1.57± 0.21
P value		0.833	0.000	0.878	0.000	0.843	0.000

Groups	The number of cases	Blood sedimentation(mm/h)		Hematocrit(%)		Fibrinogen(g/L)	
		Before the treatment	After treatment	Before the treatment	After treatment	Before the treatment	After treatment
Observation group	42	25.10± 7.86	16.27± 3.15	48.38± 4.28	43.20± 3.41	3.63± 0.71	2.34± 0.45
The control group	42	24.93± 6.51	23.01± 6.34	48.45± 4.13	46.48± 3.16	3.59± 0.68	3.11± 0.58
P value		0.914	0.000	0.939	0.000	0.793	0.000

2.3 两组患者治疗前后血清 N 末端钠尿肽前体水平的比较

治疗前，两组血清 N 末端钠尿肽前体水平比较差异无统计学意义(P＞0.05)；治疗后，两组血清 N 末端钠尿肽前体水平较治疗前均显著降低(P＜0.05)，观察组 N 末端钠尿肽前体水平明显低于对照组(P＜0.05)，见表 3。

表 3 两组患者治疗前后血清 N 末端钠尿肽前体水平的比较($\bar{x}$± s)

Table 3 Comparison of the serum precursors of n-terminal natriuretic peptide levels between the two groups before and after treatment($\bar{x}$± s)

Groups	The number of cases	N-terminal natriuretic peptide precursors(ng/L)	
		Before the treatment	After treatment
Observation group	42	1954.91± 121.45	332.83± 53.98
The control group	42	1965.43± 112.27	761.31± 92.45
P value		0.681	0.000

2.4 两组患者治疗前后心功能的比较

两组患者治疗前 LVEDd、LVEF、LVESD 比较差异无统计学意义(P>0.05)；治疗后，两组 LVEDd、LVESD 均较治疗前明显下降，LVEF 较治疗前明显上升，观察组 LVEDd、LVESD 显著低于对照组，LVEF 显著高于对照组(P＜0.05)，见表 4。

表 4 两组患者治疗前后心功能指标的比较($\bar{x}$± s)

Table 4 Comparison of the cardiac function index between the two groups before and after treatment($\bar{x}$± s)

Groups	The number of cases	LVEDd/mm		LVEF%		LVESD/mm	
		Before the treatment	After treatment	Before the treatment	After treatment	Before the treatment	After treatment
Observation group	42	57.51± 4.73	50.45± 3.97	38.22± 3.54	43.68± 4.58	46.55± 3.59	40.45± 3.73
The control group	42	57.45± 4.66	53.65± 3.67	38.31± 3.29	40.23± 4.29	46.47± 3.48	43.39± 3.20
P value		0.953	0.000	0.904	0.001	0.918	0.000

2.5 两组患者不良反应发生情况的比较

治疗期间，观察组 1 例胸痛，1 例肠胃不适，不良反应发生率为 4.76%；对照组 2 例胸痛，3 例肠胃不适，肝功能异常 2 例，不良反应发生率为 16.67%。两组症状均轻微，未经特殊处理自行缓解，不良反应总发生率比较无显著差异(P=0.078)。

3 讨论

近年来，随着老龄化的日益严重，慢性心力衰竭的发生率也随之增高，严重威胁到了人们的生命健康及生活质量。研究表明慢性心力衰竭的发生主要是神经系统、肾素、血管紧张素的兴奋性显著增高，造成的神经内分泌过渡激活[9,10]。慢性心力衰竭极容易被老年患者忽视，长期性的不予治疗容易导致患者血流动力学发生改变[11,12]，治疗不及时容易导致患者出现风湿活动等其他疾病[13,14]。心悸、积聚等范畴在中医被认为是慢性心力衰竭，通过气滞、瘀血、手术功能引起水肿、少尿等症状，从而导致心脏、肾等脏器的主要病理改变，中医临床治疗以促进血液循环，消除瘀血、肾衰为主[14,15]。

依那普利属于叶酸类药物与 ACEI 的合剂，具有补充叶酸和控制血压的效果，可抑制肾素 - 血管紧张素系统[16,17]，对小动脉及小静脉均有一定的扩张作用，能有效减轻心脏前符合、逆转心室重构，是目前临床上治疗老年慢性心力衰竭的常用药[18,19]。疏血通主要以昆虫为主要成分，如水蛭、蚯蚓、昆虫药等，以其特有的方式疏通脏腑和经络，利用昆虫的蠕动作用降低血液粘度、调节血流、改善心肌缺血[20,21]。

本研究结果显示疏血通联合依那普利治疗老年慢性心力衰竭的总有效率为 95.24%，明显高于单纯使用依那普利进行治疗患者的 73.81%，分析是因为疏血通中水蛭是一种特异的抑制剂，可有效防止血栓的形成，而且还可以启动内皮细胞，使其分泌纤维酶原激活物，有效的溶解血栓，从而提高了临床疗效。使用疏血通联合依那普利治疗的患者各项指标改善程度明显比单纯使用依那普利的患者更具有优势，分析是因为疏血通它能改善血液循环，扩张血管，加速血液循环，缓解血管痉挛，提示疏血通联合依那普利可有效改善患者的血液流变学的各项指标，提高生活质量。此外，使用疏血通联合依那普利治疗的患者血清 N 末端钠尿肽前体水平、LVEDd、LVESD 均明显低于单纯使用依那普利治疗的患者，而 LVEF 明显高于使用依那普利的患者，提示联合用药优于单纯使用依那普利治疗，分析是因为疏血通可以改善心功能，减少氧自由基的产生，增加前

列环素的合成与释放。此外,治疗期间两组患者的不良反应发生率分别为4.76%、16.67%，提示联合治疗并未增加患者的不良反应,安全性高。

综上所述,本研究结果表明疏血通联合依那普利治疗老年慢性心力衰竭的临床效果显著优于单用依那普利治疗,可能与其显著降低患者的血清N末端钠尿肽前体水平，改善患者的心功能和血液流变学的各项指标有关。

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