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原发性高血压患者尿微量白蛋白和冠状动脉狭窄性病变程度的关系

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摘要 目的:分析并探讨原发性高血压患者尿微量白蛋白和冠状动脉狭窄性病变程度的关系。方法:选择 2010 年 8 月至 2013 年 8 月符合条件的患者按照 MAU 阳性与否分为阳性组和阴性组各 98 例,分别记录并比较尿微量白蛋白、冠状动脉造影情况及 Gensini 积分。结果:①阳性组与阴性组患者在性别、年龄、病程、吸烟史、饮酒史、高脂血症史、血肌酐水平比较差异无统计学意义($P>0.05$)。②两组患者收缩压、舒张压、脉压及脉压指数比较,差异无统计学意义($P>0.05$)。③阳性组相比阴性组冠状动脉造影阳性率高,双支及三支冠脉病变率亦高,差异有统计学意义($P<0.05$);且阳性组 Gensini 积分显著高于阴性组($P<0.05$)。结论:原发性高血压伴有 MAU 阳性患者存在相对更严重的冠状动脉狭窄性病变,通过检测 MAU 指标有助于及时判断患者病情并指导治疗方案。

关键词:原发性高血压;尿微量白蛋白;冠状动脉狭窄

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The Relationship between Microalbuminuria and Primary Stenotic Coronary Lesions in Patients with Hypertension

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ABSTRACT Objective: To analyze and investigate the relationship between microalbuminuria and primary stenotic coronary lesions in patients with hypertension. **Methods:** We chose eligible patients from August 2010 to August 2013 and divided them into MAU positive and negative group with 98 cases in each group. We recorded and compared the urinary albumin, coronary angiography and Gensini scores of the two groups. **Results:** ① There was no significant difference between positive group and negative group in the gender, age, disease duration, smoking history, drinking history, history of hyperlipidemia, serum creatinine level ($P>0.05$). ② There was no significant difference between two groups in the systolic blood pressure, diastolic blood pressure, pulse pressure and pulse pressure index ($P>0.05$). ③ Compared with the negative group, the positive group's positive rates of coronary angiography, and three double vessel coronary artery disease rates were higher and the difference was statistically significant ($P<0.05$). Gensini scores of positive group was significantly higher than that of the negative group ($P<0.05$). **Conclusion:** There is a more severe coronary artery stenosis on essential hypertension accompanied MAU, and timely detection MAU indicators can help determine the patient's condition and instruct the treatment.

Key words: Essential hypertension; Microalbuminuria; Coronary artery stenosis

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前言

高血压可分为原发性及继发性两大类。原发性高血压是指导致血压升高的病因不明,称之为原发性高血压^[1-3]。目前,原发性高血压(primary hypertension)的病因尚不明确,一般认为其致病原因是在一定的遗传背景下由于多种后天环境因素作用使正常血压调节机制失代偿所致^[4,5]。尿微量白蛋白(microalbuminuria, MAU)不仅是原发性高血压患者肾脏受损早期敏感指标,亦是预测患者心脑血管事件发生的独立危险因素^[6]。目前有关原发性高血压患者 MAU 与冠状动脉狭窄性病变程度关系的研究甚少,本研究通过分析冠脉造影结果,对原发性高血压患者 MAU 与冠状动脉狭窄病变程度进行探讨,现将结果报道如下:

1 资料和方法

1.1 一般资料

选择我院 2010 年 8 月~2013 年 8 月诊断为原发性高血压病的住院患者共 300 例,所有患者均符合:①经 2 次以上不同日测量坐位血压 $\geq 160/100$ mmHg (单一收缩压或舒张压或两者均升高),②非继发性、恶性及急进性高血压患者。并排除合并有糖尿病、脑血管疾病、泌尿系统疾病、心肺功能不全患者。根据患者 24h 尿白蛋白指标分为 MAU 阳性患者和 MAU 阴性患者,其中 MAU 阳性患者共 98 例,24 h 尿白蛋白含量 ≥ 30 mg/d 且 < 300 mg/d, MAU 阴性患者共 202 例,24 h 尿蛋白含量 < 30 mg/d。MAU 阳性患者直接列为阳性组($n=98$),于 MAU 阴性患者中随机抽取 98 例患者列为阴性组($n=98$);两组患者一般资料比较见表 1。

1.2 尿微量白蛋白检测

入院后即收集患者连续 24 h 尿液,采用 orion diagnostica

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公司生产的 TURBOX plus 浊度仪,应用免疫比浊法定量检测 24 h 尿白蛋白量。

1.3 冠脉造影及 Gensini 积分

常规 Judkins 法行选择性左、右冠脉造影,冠心病诊断标准为冠脉造影发现左前降支、左回旋支及右冠脉中任一分支狭窄 $\geq 70\%$ 或左主干狭窄 $\geq 50\%$ 。采用美国心脏病协会制定的 Gensini 法对不同冠脉分支内径狭窄程度评分,选用 8 支主要血管段,对其最狭窄处进行评分,存在多处狭窄的某段血管,以其血管最狭窄处计分,计分原则为: $< 25\%$ 计 0 分; $25\% \sim 49\%$ 计 1 分; $50\% \sim 74\%$ 计 2 分; $75\% \sim 99\%$ 计 3 分; 100% 计 4 分;各分支计分之和作为最终积分。

1.4 统计方法

采用 SPSS12.0 统计软件进行数据分析,计量资料采用均数 $\pm$ 标准差($\bar{x} \pm s$)表示,计数资料采用例数及百分率表示,一般资料比较采用组间 t 检验,组间不同冠脉病变支数百分率比较采用 χ^2 检验,并用单向方差分析比较冠脉狭窄积分,以 $P < 0.05$ 认为差异有统计学意义。

2 结果

2.1 两组患者一般资料比较

阳性组与阴性组患者在性别、年龄、病程、吸烟史、饮酒史、高脂血症史、血肌酐水平比较差异无统计学意义($P > 0.05$)。具体见表 1。

表 1 两组患者一般资料比较($\bar{x} \pm s, n$)
Table 1 Comparison of general information of two groups($\bar{x} \pm s, n$)

指标 Indexes	阳性组(n=98) Positive group (n=98)	阴性组(n=98) Negative group (n=98)
男/女 Male/Female	46/45	52/53
年龄(岁) Age(years)	54.3 $\pm$ 6.7	52.1 $\pm$ 6.4
病程(年) Disease duration (years)	13 $\pm$ 7.6	112 $\pm$ 7.9*
吸烟史(例) Smoking history (cases)	52	50
饮酒史(例) Drinking history (cases)	20	21
高脂血症史(例) Hyperlipidemia history(cases)	58	54
血肌酐水平($\mu\text{mol/L}$) Level of serum creatinine($\mu\text{mol/L}$)	96.2 $\pm$ 17.9	87.3 $\pm$ 12.4

注:与阴性组比较,* $P > 0.05$ 。

Note: Compared with negative group,* $P > 0.05$.

2.2 两组患者血压值比较

计学意义($P > 0.05$),具体见表 2。

两组患者收缩压、舒张压、脉压及脉压指数比较,差异无统

表 2 两组患者血压值比较($\bar{x} \pm s, n$)
Table 2 Comparison of blood pressure of two groups($\bar{x} \pm s, n$)

组别 Groups	收缩压(mmHg) Systolic pressure(mmHg)	舒张压(mmHg) Diastolic pressure(mmHg)	脉压(mmHg) Pulse pressure(mmHg)	脉压指数 Pulse pressure index
阳性组(n=98) Positive group (n=98)	169.2 $\pm$ 14.8	92.7 $\pm$ 13.5	76.9 $\pm$ 14.5	0.43 $\pm$ 0.12
阴性组(n=98) Negative group (n=98)	165.3 $\pm$ 13.9	94.1 $\pm$ 12.8	75.1 $\pm$ 12.6	0.46 $\pm$ 0.09

注:与阴性组比较,* $P > 0.05$ 。(脉压=收缩压-舒张压;脉压指数=脉压/收缩压)。

Note: Compared with negative group,* $P > 0.05$ (Pulse pressure=Systolic pressure-Diastolic pressure; Pulse pressure index=Pulse pressure/Systolic pressure).

2.3 两组患者冠状动脉病变程度比较

脉病变率亦高,差异有统计学意义($P < 0.05$);且阳性组 Gensini 积分显著高于阴性组($P < 0.05$)。具体见表 3。

阳性组相比阴性组冠状动脉造影阳性率高,双支及三支冠

表 3 两组患者冠状动脉病变程度比较
Table 3 Comparison of coronary artery disease of two groups

组别 Groups	冠脉造影阳性例数 The cases of coronary arteriography	冠脉病变情况 Coronary lesions			Gensini 积分 Gensini score
		单支病变 Single vessel disease	双支病变 Double vessel lesion	三支病变 Three branch vessel disease	
阳性组(n=98) Positive group (n=98)	74*	32	25*	17*	41.3 $\pm$ 11.4*
阴性组(n=98) Negative group (n=98)	51	33	13	5	20.1 $\pm$ 8.5

注:与阴性组比较,* $P < 0.05$ 。

Note: Compared with negative group,* $P < 0.05$.

3 讨论

MAU 为一般人群全因死亡率的重要预测指标,其对心血管事件死亡的预测具有较高价值^[7]。既往研究表明,任何程度的蛋白尿均可作为冠心病的危险因素,且该指标独立于年龄、性别、血压、血脂及肾功能异常等因素,在超过微量蛋白尿阈值后,其对人造成的危险度随数值升高而增加^[8-10]。上世纪 80 年代末期 Yudkin 首次发现并报道微量白蛋白尿可增加冠心病死亡率,后 Borch 等通过前瞻性研究证实微量白蛋白尿独立于高血压、高血脂、吸烟等危险因素,其与急性心肌梗死、无症状性缺血性心脏病的发生密切相关^[11]。随着越来越深入的研究,逐渐认识到 MAU 同冠状动脉狭窄病变程度呈正相关,其可随冠脉狭窄病变程度增加而增加^[12,13]。流行病学研究显示原发性高血压中约 15%~56% 的患者伴有 MAU,其发生率同血压水平及合并糖尿病与否相关;MAU 阳性的原发性高血压患者心室壁厚及颈动脉中膜厚度发生率相比阴性患者高 20 倍,其预后明显较差;有报道显示 MAU 阳性的老年原发性高血压患者其颈动脉粥样硬化检出率明显高于阴性患者,而血管舒张反应明显弱于阴性患者^[14,15]。

通过我们对原发性高血压患者研究发现,由冠状动脉造影结果表明 MAU 阳性的患者其冠脉造影阳性率相比 MAU 阴性患者较高,其冠状动脉狭窄程度更明显,多支冠脉病变发生率更高,两者存在显著相关性。国外有研究曾证实伴有 MAU 的高血压患者其冠心病发病率较不伴有 MAU 的高血压患者高至少 4 倍,该指标是独立于糖尿病、高脂血症、肥胖及年龄等危险因素外的重要因素^[16];且有学者指出 MAU 除预示高血压患者存在严重动脉粥样硬化病变及不良预后外,在普通人群中该指标阳性者的心血管事件发生率相比阴性者亦高^[17,18]。当前有关 MAU 同冠状动脉粥样硬化严重程度之间病理机制的相关研究较少,VCAM-1、IVAM-1、CRP 水平可能对两者关联做出一定解释^[19,20],有学者发现在原发性高血压伴 MAU 阳性患者的血浆中可溶性 VCAM-1 和 ICAM-1 含量较阴性患者高,而后两种物质在动脉粥样硬化形成早期扮演有重要作用,可介导单核及内皮细胞黏附于血管内膜;亦有学者发现在高血压 MAU 阳性患者中 CRP 水平显著高于阴性患者,而 CRP 是反映机体炎症应激状态的重要指标;通过上述研究似乎可以理解为 MAU 阳性患者的内皮屏障功能障碍是造成其与冠心病高发病率相关的深层原因。

综上所述,我们认为原发性高血压伴有 MAU 阳性的患者存在相对更严重的冠状动脉狭窄性病变,在临床工作中应引起足够注意,通过密切检测 MAU 指标有助于及时判断患者病情并指导治疗方案。

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