

消瘀化石合剂防治体外冲击波 对肾损伤的实验研究

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摘要 观察行体外冲击波碎石术(ESWL)的肾结石患者35例碎石前后血、尿中 β_2 微球蛋白(β_2 -MG)含量的变化,结果表明,对照组碎石术后24小时血、尿中 β_2 -MG含量升高,均具有非常显著性差异($P<0.01$),72小时后 β_2 -MG升高均仍有显著性意义($P<0.05$),168小时后恢复正常。而用药组(服消瘀化石合剂)碎石前后血、尿中 β_2 -MG含量的差别均无显著性意义($P>0.05$)。提示碎石术可导致一定程度的肾损伤,而消瘀化石合剂则可能具有减轻或加速修复ESWL所致之肾损伤的作用。

主题词 肾/病理学 碎石术,激光/副作用 @ 消瘀化石剂

我院自1990年10月以来,研制尿石系列合剂配合体外冲击波碎石术(ESWL)治疗泌尿系统结石,取得了较满意的疗效^[1]。关于ESWL对肾损伤的副效应,国内外均已有过许多报道。笔者在使用尿石系列合剂过程中,观察到消瘀化石合剂能明显改善碎石病人的血尿和腰痛等症状,提示消瘀化石合剂可能有防治ESWL对肾损伤的作用。为此,笔者观察了35例肾结石患者ESWL前后血、尿中 β_2 -MG含量的变化,报告如下。

1 材料与方法

1.1 实验材料:消瘀化石合剂:由三棱、莪术、赤芍各7.5%,茜草根、小蓟、冬葵子、海金沙各9.3%,金钱草、白茅根各18.6%,田七3.1%组成。由本院制剂室提供浓缩制剂,含生药540g/L。

碎石治疗采用国产WD-91型体外冲击波碎石机; β_2 -MG测定所用 β_2 -MG放射免疫药盒,由北京华清生化技术研究所提供, β_2 -MG含量计数采用美国产Beckman Gamma 5500计数仪。

1.2 实验方法:

肾结石病例的选择:诊断标准参照《中医肾脏病学》肾结石诊断标准^[2]。

纳入标准:(1)符合诊断标准,年龄在20~65岁,

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首次接受ESWL治疗者。(2)X线腹部平片及静脉尿路造影证实为单发肾结石,结石横径0.5~2.0cm,双侧肾分泌功能正常者。(3)血分析、出凝血时间正常,尿分析白细胞 ≤ 25 ,蛋白 $\leq 0.3g/L$,血代谢四项及肝功能正常者。

排除标准:(1)重复接受ESWL治疗者。(2)静脉尿路造影提示有明显肾积液者。(3)有血友病家族史及紫癜等出血倾向者。(4)兼患有泌尿系统炎症、自身免疫性疾病、肿瘤等对 β_2 -MG测试结果有干扰的其他疾病患者。

病例分组及用药方法:共计观察35例,男14例,女21例。年龄21~63岁,平均39.4岁。根据随机原则将纳入病例按ESWL治疗的先后顺序编号,单数编入对照组,双数编入用药组。35例按此原则分为对照组18例,用药组17例。对照组不用药,用药组从ESWL前1天开始服消瘀化石合剂,每次100ml,加温开水稀释至200ml口服,每日2次。

碎石机工作参数:工作电压10kV,频率80次/分钟,每例冲击2000次。

标本收集与检测:每个病例各收集4次血、尿标本,时间分别在ESWL前1天(用药组在服药前)、ESWL后24小时、72小时及168小时。每次取空腹静脉血3ml、尿液10ml,均以3000rpm离心5分钟,分别取其血清及取尿上清液5ml,置于干燥洁净之青霉素空瓶中,编号后置-25℃冰箱中保存待测。贮存时间最长不超过3个月。检测方法按 β_2 -MG药盒检测说明书。

2 结果

表1及表2示,行体外冲击波碎石术后,对照组24小时血、尿中 β_2 -MG含量升高,均具有非常显著性差异($P<0.01$);72小时 β_2 -MG升高仍具有显著性意义($P<0.05$)。用药组碎石术前、后 β_2 -MG则无明显改变。

3 讨论

β_2 -MG在血、尿中含量的变化是判断肾功能变化的敏感指标,对肾功能损害的早期防治具有指导意义。

肾功能是影响血清 β_2 -MG含量的最主要因素,肾小球滤过率及肾血流量降低,则血清 β_2 -MG含量

表1 两组ESWL前后血 β_2 -MG含量变化(mg/L)

ESWL前后时间	用药组(17例)	对照组(18例)
ESWL前	2.46±0.63	2.40±0.70
后24小时	2.55±0.62	2.72±0.75**
后72小时	2.54±0.55	2.63±0.69*
后168小时	2.50±0.47	2.57±0.80

与碎石前比较 *P<0.05; **P<0.01

表2 两组ESWL前后尿 β_2 -MG含量变化(mg/L)

ESWL前后时间	用药组(17例)	对照组(18例)
ESWL前	0.20±0.14	0.20±0.15
后24小时	0.22±0.12	0.28±0.16**
后72小时	0.21±0.20	0.25±0.17*
后168小时	0.18±0.13	0.21±0.15

与碎石前比较 *P<0.05; **P<0.01

升高。测定血 β_2 -MG含量可以反映肾小球滤过功能和肾血流量改变的程度。尽管血 β_2 -MG与BUN、Cr呈正相关,但 β_2 -MG的增加比BUN、Cr反映得更早,更显著。而当肾小管损伤时,其重吸收 β_2 -MG的功能降低,尿中 β_2 -MG的含量则增加。肾小管的重吸收率只要减少10%,尿中 β_2 -MG的排泄量就要增加30倍左右。所以,测定尿中 β_2 -MG的含量又是鉴别轻度肾小管损伤的良好指标^[3]。大量研究表明,ESWL在破碎结石的同时,也不可避免地造成肾损伤。这种损伤表现在组织形态学、酶系列、肾功能以及生化等方面的改变。ESWL所致之肾损伤多数是可以恢复的,但也有部分可造成不可逆的肾损害^[4]。本实验表明,对照组ESWL后24小时血、尿 β_2 -MG均有显著升高(P<0.01),72小时后仍比ESWL前升高(P<0.05),168小时逐渐恢复正常,与有关报道一致。

随着有关ESWL所致肾损伤的报道越来越多,有

人提出以延长重复碎石的间隔时间,控制冲击能量、频率及每次治疗的冲击次数等方法,以便减轻ESWL对肾损伤的副效应。但有关用药物防治ESWL损伤负效应的报道尚不多见。我们根据ESWL后患者有血尿、冲击部位瘀斑及腰痛等表现,认为ESWL后肾损伤的病程是血瘀。这一推论后来也得到了实验研究的支持^[5]。为此,我们选用了消瘀化石合剂防治ESWL所致之肾损伤。实验结果显示,用药组ESWL后血、尿中 β_2 -MG含量与ESWL前比较,差别无显著性意义(P>0.05),提示消瘀化石合剂具有减轻或加速修复肾损伤的作用。方中三棱、莪术、赤芍活血祛瘀,行气止痛;田七、茜草根既能活血,又可止血;小蓟、白茅根凉血止血,兼能利水,专为血淋、尿血而设;金钱草、海金沙、冬葵子利水通淋,化石排石,为治尿结石之要药。活血药物能改变“浓、粘、凝、聚”的血液流变学病变,扩张血管,加速血流,改善微循环,提高肾血流量。止血药物又能使毛细血管的通透性降低,纤维蛋白原增加,阻止微血管渗血,切断间质瘀血之源。祛瘀药物则可使离经之血消散吸收。另外,ESWL所致之肾损伤还有毛细血管内皮细胞,肾小管细胞以及间质的水肿改变,利尿药物亦有助于组织细胞水肿的排泄吸收。这些都有利于减轻肾损伤和促进损伤的修复。

4 参考文献

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ABSTRACTS OF ORIGINAL ARTICLES

Fifty — seven Cases of Chronic Gastritis with Ulcerative Colitis Treated on the Basis of Differentiation of Zheng

Meng Murong

All the 57 cases were divided into four syndrome types, viz. liver—depression Qi—stagnation, damp—heat of stomach and intestine, deficient—cold of spleen—stomach, mixed heat and cold. Results were: 23 cases cured (40.4%), 28 effective (49.1%), the total effective rate being 89.5%. When the effective rate of the two disorders were assessed separately, for chronic gastritis, 23 cases were cured (40.3%), 28 effective (49.1%); for ulcerative colitis, 25 cases were cured (43.8%), 28 effective (49.1%). The total effective rates were 89.5% and 93.0% respectively, with no significant difference between them ($P > 0.05$). The coincidence of the efficacy further showed that the two disorders are closely related pathologically, hence treatment should be performed for both simultaneously.

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Key Words: Gastritis/TCM therapy colitis, ulcerative/TCM therapy treatment based on differentiation of Zheng

(Original article on page 89)

Investigation on the Action of Chinese Materia Medica on Insulin Resistance in Type—II Diabetic Mellitus by Applying Senesitive Index of Insulin

Feng Shiliang, Gao Bin, Bai Shuying.

By using a kind of new index for determining the sensitivity to insulin in human groups, viz. the reverse of the product of fasting insulin multiplied by fasting blood glucose, the effect of a Chinese drug, "Shiliang Jiantang Powder" on the insulin sensitivity in type—II diabetics was studied. Results showed that the sensitivity to insulin was increased after treatment ($P < 0.05$), demonstrating that this remedy lowered the patient's resistance to insulin.

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Key Words: Diabetes mellitus, non—insulin dependent/TCM therapy antagonist of insulin insulin/metabolism

(Original article on page 100)

Experimental Studies on Effect of Yincheng Wuling Powder on Hyperlipoproteinemia and Its Lipid Peroxidation

Yu Rong, Wu Yongjun

Administration of Yincheng Wuling Powder, a recipe formulated by Zhang Zhongjing, can markedly inhibit the contents of Tch, TG, LDL and increase the ratio of LDL/HDL in rat models. Analysis on the recipe showed Yincheng (Herba Artemisia Capillaris) and Wuling (Five—Poria) Powder all markedly lowered the Tch contents in mice of hypercholesterol level, while the Yincheng Wuling Powder yielded the actions of both. Moreover, the recipe yielded marked action of antioxidation, lowered the blood content of MDA, activated the action of GSH—PK.

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Key Words: Hyperlipemia/TCM therapy Lipid Peroxidation/drug action Yincheng Wuling Powder/pharmacology

(Original article on page 104)

Experimental Studies on Injuries of Kidney by External Blast Waves Prevented and Treated by Xiaoyu Huashi Mixture

Chi Jian'an, Yi Wangfeng, Tang Peiqiong

Observation was made on 35 patients of renal lithiasis receiving ESWL for the changes of β_2 —MG in blood and urine before and after treatment. Results revealed that the contents of blood and urine β_2 —MG 24 hours after lithotripsy was increased in the control group, with significant difference ($P < 0.01$), even 72 hours after treatment, restored to normal only until 168 hrs. While in the treatment group, there were no significant difference before and after the operation, the difference being not significant ($P > 0.05$). These showed that the lithotriptic operation can cause, to a certain extent, injury to the kidney, while the mixture decrease the injury caused by ESWL and accelerate its rehabilitation.

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Key Words: kidney/pathology lithotripsy, laser/side effect @ Xiaoyu Huashi agent

(Original article on page 108)