

实验研究

中医不同治法对 实验性高脂血症兔主动脉内膜脂斑形成的影响

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摘要 本文利用动物模型,以形态学为主,比较研究了活血化瘀(水蛭、川芎)、健脾化痰(半夏、陈皮、茯苓、竹沥水、甘草)和痰瘀同治(将上述两方合并而成)3种中医治法对实验性高脂血症兔主动脉内膜脂斑形成及脂质水平的影响。发现3者均能显著地降低家兔血清TC、TG、LDL-C和LPO含量和抑制主动脉内膜脂斑的形成,其中活血化瘀组的作用强度与西药安妥明接近。然而化痰组在降低血清TC、LDL-C和抗脂斑形成方面均比活血化瘀组明显。3种治法中,以痰瘀同治组的作用最明显,与活血化瘀组及安妥明组相比其降低血清TC、LDL-C和抗脂斑形成的作用有非常显著的差异。其抗脂质过氧化作用也有明显差异,并稍优于化痰组。形态学观察与生化测定结果,与血清LDL-C及LPO含量变化相一致,即血中TC、LDL-C含量越高,LPO的浓度则越高,脂斑形成百分率就越高,对脂斑病变程度的镜下观察也显示了相同的对应关系。表明脂质代谢紊乱,血中TC、TG及LDL-C含量的升高,导致LPO的累积是血管内膜受损及脂斑形成的主要原因。

主题词 血脂过多/中医药疗法 主动脉/病理学 动脉粥样硬化/中医药疗法

近年来,根据中医对高脂血症及动脉粥样硬化的深入认识,治疗上主要采用健脾化痰、活血化瘀或痰瘀兼治等多种治法。虽然各种治法在临床上均显示较好疗效,但迄今未见对上述治法进行比较的实验研究的报道。本文利用动物模型比较了不同治法对其主动脉内膜脂斑形成的影响。

1 材料及方法

1.1 药物:活血化瘀方(由水蛭、川芎组成),健脾化痰方(由制半夏、陈皮、茯苓、竹沥水和甘草组成),痰瘀同

治方(合并上述两方)。按要求制成水溶性制剂备用。

1.2 造模方法:新西兰家兔40只(由军事医学科学院动物中心提供),体重 2.0 ± 0.2 kg,雌雄各半,随机均分成5组:对照组(高脂组)每只每天给予胆固醇0.3g,猪油4.5g,蛋黄粉4.5g;阳性对照组:除上述高脂食物外,每只每天另给安妥明0.105g;痰瘀同治组:每只每天另给相当于22.5g生药的痰瘀同治方的制剂;健脾化痰组:每只每天另给相当于20g生药的化痰健脾方制剂;活血化瘀组:每只每天另给相当于11.2g生药的活血化瘀方制剂。实验各组的给药量均相当于临床剂量的5倍,实验时间为10周。实验结束时由颈总动脉取血测定相应指标,并作病理学检查。

1.3 病理学检查及生化指标测定:实验动物全部用空气栓塞处死,摘取心脏,并从主动脉至髂总动脉分叉处断开,剔除血管外脂肪及结缔组织。主动脉纵行剪开平铺滤纸上,用10%Formalin固定,苏丹IV染色。将血管外形及红染部分(脂斑)描于硫酸纸上,分别称量血管外形及红染部分之纸重,计算脂斑所占主动脉内膜总面积百分比。另取主动脉弓部血管两段,心脏左心房、左心室中段及心尖部分组织,作常规石蜡切片,HE染色,进行光镜观察。

生化测定:血清总胆固醇(TC)用酶法,血清甘油三酯(TG)用乙酰丙酮法,低密度脂蛋白-胆固醇(LDL-C) $TC - (TC/2.2 + HDL-C)$,血清过氧化脂质(LPO)参照大碱石子的方法^[1]。

2 结果

2.1 不同治法对脂斑形成的影响:将主动脉纵行剖开后,肉眼见病变多集中于主动脉弓部,也有广泛弥漫累及各段主动脉内膜,呈灶状、条索状及不规则的小片状分布,色淡黄,略突出于内膜表面。附表示,斑块所占主动脉总面积百分比,给药各组均能明显地抑制主动脉内膜脂斑的形成($P < 0.01$),其中健脾化痰组的作用优于活血组($P < 0.05$),而痰瘀同治组作用更加明显($P < 0.01$)。镜下脂斑主要由吞噬脂质的泡沫细胞组成。对

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照组动物主动脉的血管内膜增厚,内皮下有较多的泡沫细胞聚集,薄则3~5层,厚则10多层,大多为5~8层。部分斑块内泡沫细胞崩解,并可见少量平滑肌细胞增生,但未见纤维斑块及粥样灶形成。给药各组血管内膜病变范围变小,泡沫细胞聚集层明显变薄,其中活血化瘀组多为3~6层,健脾化痰组多为2~5层,而痰瘀同治组则为1~2层,且部分动物仅见零散的泡沫细胞,其病变较其它各组为轻。心脏未见明显病变。

2.2 不同治法对血清脂质及过氧化脂质的影响:由附

附表 不同治法对主动脉内膜脂斑形成及血清脂质和LPO含量的影响

组别	TC (mmol/L)	TG (mmol/L)	LDL-C (mmol/L)	LPO (nmol/ml)	脂斑面积百分比 (%)
对照组	51.54±14.91	2.00±0.41	49.73±14.29	5.96±1.47	9.48±2.63
安妥明组	16.51±6.03*	0.53±0.11*	15.64±5.91*	2.89±0.43*	3.19±1.13*
痰瘀同治组	6.28±2.59*	0.59±0.19*	5.24±2.64*△	2.24±0.54*△	1.86±0.66*△△
健脾化痰组	10.33±5.27*△	0.55±0.21*	9.34±5.63	2.49±0.92*	2.79±1.75*△
活血化瘀组	20.41±9.05*	0.73±0.32*	19.22±8.68*	3.14±0.74*	4.85±2.04*

注:表中数据均为均值±标准误

* 与对照组相比 $P<0.01$; 与活血化瘀组相比 $\Delta P<0.05$, $\Delta\Delta P<0.01$

3 讨论

宋剑南^[2]曾报道血中TC、TG和LDL升高是高脂血症痰浊的主要特征和生化物质基础,并认为LPO是中医冠心病血瘀和痰浊两证的中心环节及“痰瘀相关”的生化物质基础,内皮细胞的损伤则是由痰致瘀的主要病理特征,而脂质代谢紊乱及引起脂质代谢紊乱的内外因素是它们的病因所在^[3]。痰瘀两者既为同源异物,又有相互消长、相互依存的关系。

本实验以形态学为主,比较了活血化瘀、健脾化痰和痰瘀同治3种高脂血症及动脉粥样硬化的基本治法,发现它们对实验性高脂血症家兔TC、TG、LDL-C及LPO含量均有极为显著的降低作用,并具有极强的防止血管内膜脂斑形成的作用。形态学观察与生化测定结果,特别与LDL以及LPO含量变化相一致。血中TC、LDL-C含量越高,LPO的浓度则越高,脂斑形成百分率就越高,病变区域泡沫细胞聚集层也越厚。本实验动物血管病变主要为泡沫细胞堆积而隆起于内膜表面的脂质斑块,这与人类动脉粥样硬化(AS)比较,属于AS早期病变。上述结果为痰瘀相关理论及由痰致瘀的变化过程提供了进一步的实验依据。表明临床上高脂血症及动脉粥样硬化应以痰瘀同治为首选治法。当然应在辨证基础上予以重点考虑。此外,从血管内膜脂斑形成的百分率及细胞形态的改变可以看出,降脂、抗氧化在防治高脂血症及动脉硬化中有重要作

用。表可见,给药组均能降低实验性高脂血症家兔血清TC、LDL-C及LPO含量($P<0.01$),其中活血化瘀组降低血清TC、TG、LDL-C和LPO含量及抗脂斑形成的作用强度与降脂西药安妥明接近,二者间无统计学差异,但显然不及健脾化痰组($P<0.05$);几种治法中应推痰瘀同治组的效果最好,与活血组相比有极为显著的差异($P<0.01$);与西药安妥明组相比也有明显的差异($P<0.05$);健脾化痰组较痰瘀同治组稍差,但无明显差异。

用。

4 参考文献

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中国中医研究院培训中心常年招生

为适应当前医药卫生事业的飞速发展和广大医务工作者的实际需要以及我院中医药高层次人材集中的优势在中医药界所处的特殊地位,中国中医研究院培训中心常年举办如下各类专题讲习班:

1. 高级进修班(时间2周): (1)高级中医进修班; (2)高级中西医结合进修班; (3)高级针灸推拿进修班。
2. 专题进修班: (1)肛肠病专题讲习班(时间1周); (2)钱作尧长银针班(时间1周); (3)耳针班(时间1周); (4)王文远整体平衡一疗法实用技术推广专题讲习班(时间4天); (5)中药炮炙班(时间20天)。

以上各班报名满40人即开班,学习结束后颁发结业证书。我院设有内部招待所、食堂,干净舒适,价格合理。为方便学员学习,培训中心代办住宿、返程火车、飞机票等业务。

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ABSTRACTS OF ORIGINAL ARTICLES

Random Talks on Relieving Depression of Liver (wood) and Mutual Dissemination Among Internal Viscera.

Liu Xingwu

Description is made on the mechanism on offence of stomach and lung due to adverse transverse flowing of liver Qi, obstruction of stomach and spleen function due to liver depression, involvement of heart, spleen, Chong and Ren channels as a result of liver depression, its clinical manifestations, appropriate therapies and selection of recipes and drugs. Elucidation of inner connection and its rules among viscera due to liver depression by applying the Five - phase Theory. The paper also mentioned the appropriate basic therapies on the basis of its "generation, subduing, overwhelming, humiliation" theory. The clinical significance of treatment of liver depression under the direction of theory of "mutual dissemination of viscera" is also expounded on the basis of holistic conception and treatment based on differential diagnosis of Zheng. Both are unique features of TCM.

Key Words: Mutual dissemination among viscera, depression of liver/TCM therapy @ Relieving liver depression

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(Original article on page137)

Observation on primary liver carcinoma treated with Qinglong (green dragon) Bolus.

Chen Changhuai, Song Li, Yang Guofeng, et. al

Two hundred cases were treated, with 90 cases treated by chemotherapy as control for comparison. In the treatment group, 17 cases (8.5%) were totally or partially ameliorated, 161 cases (80.5%) stable. There was significant amelioration in clinical symptoms and survival quality in the treatment group as compared with that of the control group.

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Key Words: Liver Tumor/TCM therapy @ Qinglong Bolus

(Original article on page165)

Influence of different TCM therapies on formation of fat plaque in aortic intima of experimental hyperlipidemic rabbit.

Zhou Xiaqing, SongJiannan, Lu Aiping, et. al

Three kinds of TCM therapy, i.e. blood - activating stasis - removing (leech, Rhizoma Ligustici chuanxiong, 1st group), spleen - strengthening and phlegm-dissipating (Rhizoma pinellia, Poria tangerine peel, Radix Glycyrrhiza, and fluid of bamboo sap 2nd group) and simultaneous therapy on phlegm and stasis (3rd group), were applied morphologically in animal model to observe their influence on the lipid level and lipid plaque formation in the aortic intima of experimental hyper lipidemic rabbit. Results revealed that all 3 methods markedly lowered the serum TC, TG, LDL - C and LPO contents and inhibited the formation of aorticintimal lipid plaque. Its action in the 1st group and that in the atomid - s group were similar. However, the lowering of serum TC, LDL - C and anti - formation of lipid plaque in the phlegm dissipating group was better in the 2nd or blood - activating stasis

removing group. In all the 3 groups, the 3rd group revealed the best results. When compared with the 1st group and atomid - S group, the difference was very significant in lowering of serum TC, LDL - C and anti - formation of lipid plaque, and was also a bit better than the 2nd group. morphological and biochemical studies revealed that it changed identically with the changes in serum LDL - C and LPO, or, in other words, the higher the contents of blood TC, LDL - C, the higher the concentration of LPO, and the higher the percentage of plaque formation. The degree of plaque formation under the microscope revealed the same correlative changes, suggesting that the accumulation of LPO as a result of lipid metabolic disturbance, increase of blood TC, TG, LDL - C contents were the major causes of injury of arterial intima and lipid plaque formation.

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Key Words: Hyperlipidemia/TCM therapy aorta/pathology arterio-athero sclerosis/TCM therapy

(Original article on page174)