福建省人民医院
福建中医学院附属人民医院

论文集

2004年12月

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冠心病冠状动脉造影结果、同型半胱氨酸及C反应蛋白与中医证型关系的研究

专　　业：中西医结合临床
博士研究生：熊尚全
指导老师：杜　建　教授

摘　要

第一部分　冠心病冠状动脉造影结果与中医辨证分型关系的研究

目的：探讨CHD中医本虚标实辨证及不同程度血瘀证与冠状动脉病变程度、形态的关系。

资料和方法：1、选择经CAG确诊的CHD患者285例，分析其CAG结果，包括冠状动脉病变程度、病变形态、病变支数、Gensini积分。冠状动脉病变形态采用两种分型方法：①按ACC/AHA病变分型标准分A型、B型及C型三种；②对狭窄程度＞50％而＜100％的斑块进行形态学分析分型分为Ⅰ型、Ⅱ型及Ⅲ型三种。2、按冠心病中医辨证标准进行本虚标实辨证分型。标实证中，单纯血瘀证42例，气滞血瘀证69例，痰浊血瘀证65例，痰热血瘀证78例，寒凝血瘀证31例。本虚辨证中，259例有本虚证，其中气虚证136例，阴虚证62例，阳虚证38例，阳脱证23例。血瘀证还按自拟的血瘀证评分办法进行轻度、中度及重度血瘀证的判定，其中轻度血瘀证84例，中度血瘀证108例，重度血瘀证93例。3、统计学处理采用SPSS10.0统计软件。计数资料比较采用X^2检验，计分数据比较采用方差分析。

结果：

1、CAG结果与CHD中医标实辨证的相关性

（1）CHD冠脉病变支数和狭窄严重程度与中医标实证的关系

标实证各组间冠状动脉病变支数分布差异有非常显著性意义（X=50.366，P<0.001）。单纯血瘀证组（52.4%）及气滞血瘀证组（60.9%）多见单支病变，痰浊血瘀证组（49.2%）、痰热血瘀证组（45.6%）及寒凝血瘀证组（54.8%）多见三支病变。患者平均冠脉狭窄支数，由气滞血瘀证组（1.55）、单纯血瘀证组（1.67）、痰热血瘀证组（2.24）、痰浊血瘀证组（2.25）到寒凝血瘀证组（2.42）依次增多，但差异无显著性意义（P>0.05）。冠状动脉病变Gensini分值差异有显著性意义（F=9.149, P<0.001），痰浊血瘀证组显著高于单纯血瘀证组和气滞血瘀证组（P<0.05），痰热血瘀证组和寒凝血瘀证组显著高于单纯血瘀证组和气滞血瘀证组（均P<0.01）。

（2）CHD冠脉病变ACC/AHA分型和形态学分型与中医标实证的关系

标实证各组间冠状动脉病变ACC/AHA分型分布差异有非常显著性意义（X=38.881，P<0.001）。单纯血瘀证组以A型（38.1%）和B型（42.9%）病变为多，气滞血瘀证组也以A型（47.8%）B型（43.5%）病变为多，痰热血瘀证组B型病变（51.3%）为多，寒凝血瘀证组（48.2%）和痰浊血瘀证组（44.6%）以C型病变占大多数。冠状动脉狭窄形态学分型分布差异也有非常显著性意义（X=

73.643，P<0.001）。Ⅰ型病变在单纯血瘀证组（65.6%）和气滞血瘀证组（70.4%）居多，Ⅱ型病变在痰热血瘀证组（59.1%）和寒凝血瘀证组（42.9%）居多，痰浊血瘀证组（53.8%）则以Ⅲ型病变为多。

2、CAG 结果与 CHD 中医本虚辨证的相关性

（1）CHD 冠脉病变支数及狭窄程度与中医本虚证的关系

本虚证各组间冠状动脉病变支数分布差异有非常显著性意义（X=20.588，P =0.002）。气虚证组以单支（41.2%）及双支（42.6%）病变为多，阴虚证组从单支病变（29.0%）、双支病变（32.3%）到三支病变 24 （38.7%）例数逐渐增多，阳虚证组（55.2%）及阳脱证组（65.3%）以三支病变为多。由气虚到阳脱，每例患者平均病变支数依次增多，但无显著差异（P>0.05）。冠状动脉病变 Gensini 分值差异有显著性意义（F=18.873, P<0.001），阳脱证组显著高于气虚证组、阴虚证组和阳虚证组（均 P<0.01），阳虚证组的也显著高于气虚证组和阴虚证组（均 P<0.05）。

（2）CHD 冠脉病变 ACC/AHA 分型及狭窄形态学分型与中医本虚证的关系

本虚证各组间冠状动脉病变 ACC/AHA 分型分布差异有非常显著性意义（X= 69.651，P<0.001）。气虚证组 A 型病变最多（44.8%），阴虚证组 B 型病变为主（51.6%），阳虚证组 C 型病变占大部分（60.5%），阳脱证组均为 B 型病变。冠状动脉狭窄形态学分型分布差异也有非常显著性意义（X= 23.789，P=0.001）。气虚证组Ⅰ型病变占大多数（57.3%），阴虚证组Ⅱ型病变为主（47.9%），阳虚证组Ⅲ型病变为多（41.4%）。阳脱证组为 2 例Ⅱ型病变，未列入统计。

3、CAG 结果与 CHD 不同程度血瘀证的相关性

（1）CHD 冠脉病变支数及狭窄程度与不同程度血瘀证的关系

不同程度血瘀证组间冠状动脉病变支数分布差异有非常显著性意义（X= 72.407，P<0.001）。轻度血瘀证组单支病变占 63.1%，中度血瘀证组单支病变（30.6%）、双支病变 39（36.1%）及三支病变 36（33.3%）例数比较平均，重度血瘀证组三支病变为 63.4%。由轻度血瘀证组到重度血瘀证组，患者平均冠状动脉病变支数依次增多，组间有显著差异（P<0.05）。冠状动脉病变 Gensini 分值差异也有显著性意义（F=96.511, P< 0.001），轻度血瘀证组显著低于中度和重度血瘀证组（均 P<0.01）；中度血瘀证组也显著低于重度血瘀证组（P<0.01）。

（2）冠脉病变 ACC/AHA 分型及狭窄形态学分型与血瘀证不同程度的关系

不同程度血瘀证组间冠状动脉病变 ACC/AHA 分型分布差异有非常显著性意义（X=42.424，P<0.001）；轻度血瘀证组 A 型病变为 51.2%，中度血瘀证组 B 型病变为 44.4%，重度血瘀证组 B 型（48.4%）和 C 型（43.0%）病变占大部分。冠状动脉狭窄形态学分型分布差异也有非常显著性意义（X=28.305，P<0.001）；轻度血瘀证组Ⅰ型病变为 60.5%，中度血瘀证组Ⅰ型（37.1%）和Ⅱ型（40.4%）病变占大部分，重度血瘀证组以Ⅱ型（45.0%）和Ⅲ型病变（36.7%）为多。

结论：1、（1）CHD 标实证从血瘀（单纯血瘀、气滞血瘀）到痰浊、痰热血瘀再到寒凝血瘀，冠脉病变支数逐渐增多，狭窄程度不断加重，病变渐趋复杂。说明 CHD 标实证是由血瘀（单纯血瘀、气滞血瘀）向痰浊、痰热血瘀再向寒凝血瘀发展。（2）冠脉病变在痰热血瘀证以不稳定斑块为主，单纯血瘀证及气滞血瘀证以稳定斑块为主，痰浊血瘀证及寒凝血瘀证也相对稳定，但大多病变复杂。2、（1）CHD 本虚证从气虚、阴虚、阳虚到阳脱，冠脉病变支数逐渐增加，狭窄程度不断加重，病变渐趋复杂。说明 CHD 本虚证由气虚日久伤阳到阳虚，或阴虚、阴损及阳发展到阴阳两虚存在病理解剖学基础。（2）气虚证冠脉病变相对简单且斑块相对稳定；阳虚证斑块也相对稳定但复杂病变多

见；阴虚证不稳定斑块相对多见；阳脱证主要是冠脉急性闭塞，心脏泵衰竭出现阳脱证候。3、CHD血瘀证从轻度、中度到重度，冠脉病变支数逐渐增多，狭窄程度不断加重；病变形态从A型向B型、C型发展，病变渐趋复杂。4、CHD中医辨证与CAG结果存在相关性，CAG多项指标作为CHD本虚标实辨证及血瘀证不同程度判定指标有临床价值。

关键词：冠状动脉粥样硬化　冠状动脉造影　冠心病　中医辨证分型

第二部分　冠心病血浆同型半胱氨酸和高敏C反应蛋白变化及其与中医辨证的关系

高同型半胱氨酸（Hcy）血症、C反应蛋白（CRP）被认为是CHD的独立危险因素；CHD中医辨证与Hcy及CRP尚无系统研究。

目的：探讨Hcy、CRP与冠状动脉病变程度、活动度的相关性；Hcy、CRP与传统危险因素的关系；以及CHD中医本虚标实辨证及不同程度血瘀证血浆Hcy、CRP水平的变化规律，为CHD中医辨证及中西医结合防治提供部分客观依据。

资料和方法：1、经CAG确诊的CHD患者173例，证型分布：标实证中，单纯血瘀证26例，气滞血瘀证42例，痰浊血瘀证39例，痰热血瘀证47例，寒凝血瘀证19例。157例有本虚证，气虚证81例，阴虚证37例，阳虚证22例，阳脱证17例。血瘀证中，轻度血瘀证48例、中度血瘀证66例、重度血瘀证59例。正常对照组19例，冠造正常组24例。2、对CHD进行多重分组。3、高效液相色谱荧光检测法检测血浆tHcy水平；免疫增强的透射比浊法检测血浆hs-CRP水平。4、统计学处理采用t检验比较检测数据的两组均数，三组以上样本数据比较采用方差分析。

结果：

1、CHD血浆tHcy水平变化及其与中医证型的关系

（1）CHD血浆tHcy水平为19.15±9.03μmol/L，显著高于正常对照组（7.87±2.73μmol/L）和冠造正常组（8.91±3.64μmol/L）（均$P<0.01$），冠造正常组与正常对照组间无显著性差异（$P>0.05$）。对CHD多重分组，结果显示：CHD各亚组血浆tHcy水平，包括①临床诊断各组，②是否曾心肌梗死，③冠状动脉病变各支数组，④冠状动脉病变ACC/AHA分型各组，⑤病变>50%且<100%的冠状动脉狭窄形态学分型各组，⑥冠状动脉病变Gensini不同分值各组，均显著高于正常对照组和冠造正常组（均$P<0.01$）。各临床诊断组间无显著性差异；心肌梗死组显著高于非心肌梗死组（$P<0.01$）；单支病变组明显低于双支组（$P<0.05$）及三支病变组（$P<0.01$）；A型病变组显著低于B型组（$P<0.05$）和C型病变组（$P<0.01$）；Ⅲ型病变组显著高于Ⅰ型组和Ⅱ型组（均$P<0.05$）；Gensini分值<20组明显低于Gensini分值20~40组和Gensini分值>40组（均$P<0.05$）。

（2）按CHD各传统主要危险因素分组，结果显示：血浆tHcy水平男性明显高于女性，有吸烟史者明显高于不吸烟者（均$P<0.01$）；而在高危年龄组与低危年龄组、高血压病组与非高血压病组、高脂血症组与非高脂血症组以及有无冠心病家族史组之间，均无显著性差异（$P>0.05$）。

（3）从中医辨证分型来看：标实证的单纯血瘀证组（15.68±8.88μmol/L）、气滞血瘀证组（15.23

± 7.72 μ mol/L）、痰浊血瘀证组（22.73 ± 8.41 μ mol/L）、痰热血瘀证组（19.65 ± 9.08 μ mol/L）和寒凝血瘀证组（23.82 ± 8.45 μ mol/L），本虚证的气虚证组（20.67 ± 9.06 μ mol/L）、阴虚证组（15.21 ± 6.36 μ mol/L）、阳虚证组（23.32 ± 9.54 μ mol/L）和阳脱证组（20.77 ± 10.59 μ mol/L），以及不同程度血瘀证的轻度血瘀证组（15.52 ± 7.63 μ mol/L）、中度血瘀证组（19.02 ± 8.36 μ mol/L）和重度血瘀证组（22.21 ± 9.83 μ mol/L），血浆 tHcy 水平均明显高于正常对照组和冠造正常组（均 P<0.01）。单纯血瘀证组显著低于痰浊血瘀证组和寒凝血瘀证组（均 P<0.05），气滞血瘀证组也显著低于痰浊血瘀证组（P<0.01）和寒凝血瘀证组（P<0.05）；阴虚证组显著低于气虚证组（P<0.05）和阳虚证组（P<0.01）；重度血瘀证组显著高于轻度血瘀证组（P<0.01）。

2、CHD 血浆 hs-CRP 变化及其与中医证型的关系

（1）CHD 患者血浆 hs-CRP 水平（4.87 ± 2.89mg/L）显著高于正常对照组（1.29 ± 1.19 mg/L）和冠造正常组（1.61 ± 1.32 mg/L）（均 P<0.01），冠造正常组与正常对照组间无显著性差异（P>0.05）。对 CHD 进行多重分组，结果显示：CHD 各亚组血浆 hs-CRP 水平，包括①临床诊断各组，②是否曾心肌梗死，③冠状动脉病变各支数组，④冠状动脉病变 ACC/AHA 分型各组，⑤病变>50%且<100%的冠状动脉狭窄形态学分型各组，⑥不同冠状动脉病变 Gensini 分值各组，均显著高于正常对照组和冠造正常组（均 P<0.01）。临床诊断组的不稳定型心绞痛组和急性心肌梗死组显著高于稳定型心绞痛组（均 P<0.01）；非心肌梗死组和心肌梗死组间无显著差异；三支病变组显著高于单支病变组（P<0.01）； B 型病变组非常显著高于 A 型病变组和 C 型病变组（均 P<0.01）；Ⅱ型病变组显著高于Ⅰ型组和Ⅲ型病变（均 P<0.01）；Gensini 分值<20 组显著低于 Gensini 分值 20~40 组（P<0.01）和 Gensini 分值>40 组（P<0.05）。

（2）按 CHD 各主要危险因素分组，结果血浆 hs-CRP 水平在男性组（5.16 ± 2.59mg/L）和女性组（4.05 ± 2.37mg/L）、高血压病组（5.40 ± 3.00mg/L）和非高血压病组（4.37 ± 2.71mg/L）、糖尿病组（5.64 ± 3.05mg/L）和非糖尿病组（4.67 ± 2.82mg/L）、吸烟史组（5.53 ± 2.94mg/L）与无吸烟史组（4.47 ± 2.80mg/L）间差异显著（均 P<0.05）。而高危年龄组与低危年龄组、高脂血症组与非高脂血症组、有无冠心病家族史组间无显著性差异。

（3）对患者进行中医辨证，结果显示：无论是标实证的单纯血瘀证组（3.06 ± 1.99 mg/L）、气滞血瘀证组（3.67 ± 2.44 mg/L）、痰浊血瘀证组（5.25 ± 2.59 mg/L）、痰热血瘀证组（6.16 ± 3.02 mg/L）和寒凝血瘀证组（6.09 ± 3.00 mg/L），还是本虚证中的气虚证组（3.78 ± 2.44 mg/L）、阴虚证组（5.73 ± 2.49 mg/L）、阳虚证组（6.05 ± 3.04 mg/L）和阳脱证组（7.21 ± 3.28 mg/L），以及不同程度血瘀证中的轻度血瘀证组（3.55 ± 2.51 mg/L）、中度血瘀证组（4.64 ± 2.48 mg/L）和重度血瘀证组（6.21 ± 3.07 mg/L），其血浆 hs-CRP 水平均明显高于正常对照组和冠造正常组（均 P<0.01）。标实证的痰浊血瘀证组和痰热血瘀证组显著高于气滞血瘀证组（均 P<0.01），寒凝血瘀证组显著高于气滞血瘀证组（P<0.05），痰热血瘀证组显著高于痰浊血瘀证组（P<0.05）。本虚证中的阴虚证组和阳脱证组显著高于气虚证组（P<0.01），阳虚证组显著高于气虚证组（P<0.05）。重度血瘀证组显著高于轻度血瘀证组（P<0.01）和中度血瘀证组（P<0.05）。

结论：1、CHD 患者血 tHcy 明显升高，男性和吸烟者易患 CHD 可能与其 Hcy 升高有关。血 tHcy 与 CHD 冠脉病变支数、狭窄严重程度及病程长短有关，与斑块是否稳定无关。提示 Hcy 致 As 产生 CHD 可能是一个日积月累的过程。2、CHD 血 hs-CRP 显著升高，高血压和糖尿病易患 CHD 可能与 hs-CRP 升高有关。血浆 hs-CRP 水平可反映动脉粥样硬化的严重程度，也可反映冠状动脉斑块是否

稳定。说明 CRP 对 CHD 临床诊断有参考价值，可估计其病情程度，对预测预后有帮助。3、CHD 中医辨证与血 tHcy、hs-CRP 存在相关性，tHcy、hs-CRP 作为 CHD 本虚标实辨证及血瘀证不同程度判定指标有临床价值。

关键词 冠状动脉粥样硬化　冠状动脉造影　冠心病　中医辨证分型
同型半胱氨酸　C 反应蛋白　炎症

Abstract

Part One: Relationship between Coronary Arteriography and TCM Syndrome Differentiation-type in Coronary Heart Disease

Objective: To study the relationship between severity and form of coronary artery lesion and TCM Syndrome Differentiation-type（TCM-SDT） and various degree Blood-stasis Syndrome with CHD.

Methods: 1. 285 patients with CHD who were finally diagnosed by CAG were selected and their results of CAG were analyzed, which involved number, severity, form and Gensini score of coronary artery lesion. Two methods were adopted to analyse the form of coronary artery lesion: ①Form of coronary artery lesion was divided into A type, B type and C type according to ACC/AHA criteria; ②Coronary artery stenosis（its stenosis ≥50%and <100%）was divided into Ⅰtype, Ⅱ type and Ⅲ type according to its form. 2. All patients' TCM-SDT was differentiated by adopting the standard of Syndrome Differentiation for coronary artery diseases revised in 1991. All 285 patients had secondary Excess Syndrome, among them 42 patients with Blood stasis Syndrome, 69 with Qi stagnation-Blood stasis Syndrome, 65 with Phlegm Turbid-Blood stasis Syndrome, 78 with Phlegm heat-Blood stasis Syndrome, and 31 with Cold condensation-Blood stasis Syndrome. 259 patients with obvious primary Deficiency Syndrome, among them 136 were Qi-Deficiency, 62 Yin-Deficiency, 38 Yang-Deficiency, and 23 Yang-collapse. Patients' Blood stasis Syndrome was also differentiated to slight, secondary and serious according to scoring measure which was formulated by ourselves, among them 84 with slight, 108 with secondary, and 93 with serious. 3. Subsequent statistic processing included chi-square test and analysis of variance.

Results:

1. Correlation between CAG results and secondary Excess Syndrome in TCM-SDT of CHD

（1） Relationship between number and severity of coronary artery lesion and TCM secondary Excess Syndrome

There were significant differences in the distribution of coronary artery lesion number among secondary

Excess Syndrome groups (X=50.366, P<0.001) . One-artery lesion constituted the majorty in Blood stasis Syndrome group (52.4%) and Qi stagnation-Blood stasis Syndrome group (60.9%) , while three-artery lesion was the most in Phlegm Turbid-Blood stasis Syndrome group (49.2%) , Phlegm heat-Blood stasis Syndrome group (45.6%) and Cold condensation-Blood stasis Syndrome group (54.8%) . From Qi stagnation-Blood stasis Syndrome group(1.55), Blood stasis Syndrome group(1.67), Phlegm heat-Blood stasis Syndrome group (2.24) , Phlegm Turbid-Blood stasis Syndrome group (2.25) to Cold condensation-Blood stasis Syndrome group(2.42), average number of coronary artery lesion increased one by one, but there were no significant differences. There were significant differences in Gensini score among secondary Excess Syndrome groups (F=9.149, P<0.001) . Gensini score of Phlegm Turbid-Blood stasis Syndrome group was higher than that of Blood stasis Syndrome group and Qi stagnation-Blood stasis Syndrome group (all P<0.05) ; Gensini score of Phlegm heat-Blood stasis Syndrome group and Cold condensation-Blood stasis Syndrome group was also higher than that of Blood stasis Syndrome group and Qi stagnation-Blood stasis Syndrome group (all P<0.01) .

(2) Relationship between ACC/AHA type or form of coronary artery lesion and TCM secondary Excess Syndrome

There were significant differences in the distribution of coronary artery lesion ACC/ AHA type among secondary Excess Syndrome groups (X=38.881, P<0.001) . A type lesion (38.1%) and B type lesion (42.9%) constituted the majority in Blood stasis Syndrome group; A type lesion (47.8%) and B type lesion (43.5%) also constituted the majority in Qi stagnation-Blood stasis Syndrome group; B type lesion (51.3%) ranked first in Phlegm heat-Blood stasis Syndrome group; while C type lesion was the most in Phlegm Turbid-Blood stasis Syndrome group (44.6%) and Cold condensation-Blood stasis Syndrome group (48.2%) . There were also significant differences in the distribution of coronary artery stenosis type among secondary Excess Syndrome groups(X=73.643, P<0.001). Ⅰ type stenosis constituted the majority in Blood stasis Syndrome group (65.6%) and Qi stagnation-Blood stasis Syndrome group (70.4%) ; Ⅱ type stenosis ranked first in Phlegm heat-Blood stasis Syndrome group (59.1%) and Cold condensation-Blood stasis Syndrome group (42.9%) ; while Ⅲ type stenosis was the most Phlegm Turbid-Blood stasis Syndrome group (53.8%) .

2. Correlation between CAG results and primary Deficiency Syndrome in TCM-SDT of CHD

(1) Relationship between number and severity of coronary artery lesion and TCM primary Deficiency Syndrome

There were significant differences in the distribution of coronary artery lesion number among primary Deficiency Syndrome groups (X=20.588, P=0.002) . One-artery lesion (41.2%) and two-artery lesion (42.6%) constituted the majority in Qi-Deficiency group, The cases were gradually increased from

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one-artery lesion (29.0%) , and two-artery lesion (32.3%) to three-artery lesion (38.7%) in Yin-Deficiency group, while three-artery lesion ranked first in Yang-Deficiency group (55.2%) and Yang-collapse group (65.3%) . From Qi-Deficiency to Yang-collapse, average number of coronary artery lesion increased one by one, but there were no significant differences among them. There were significant differences in Gensini score among primary Deficiency Syndrome groups (F=18.873, P< 0.001) . Gensini score of Yang-collapse group was highest among primary Deficiency Syndrome groups (all P<0.01) ; Gensini score of Yang-Deficiency group was higher than that of Qi-Deficiency group and Yin-Deficiency group (all P<0.05) .

(2) Relationship between ACC/AHA type or form of coronary artery lesion and TCM primary Deficiency Syndrome

There were significant differences in the distribution of coronary artery lesion ACC/ AHA type among primary Deficiency Syndrome groups (X=69.651, P<0.001) . A type lesion (44.8%) was the most in Qi-Deficiency group, and B type lesion (51.6%) ranked first in Yin-Deficiency group, while C type lesion (60.5%) constituted the majority in Yang-Deficiency group, only B type lesion were detected in Yang-collapse group. There were also significant differences in the distribution of coronary artery stenosis type among primary Deficiency Syndrome groups (X= 23.789, P=0.001) . Ⅰ type stenosis (57.3%) constituted the majority in Qi-Deficiency, Ⅱ type lesion (47.9%) ranked first in Yin-Deficiency group, while Ⅲ type lesion (41.4%) was the most in Yang-Deficiency group. There were only 2 cases of Ⅱ type lesion in Yang-collapse group.

3. Correlation between CAG results and severity of Blood stasis Syndrome in TCM-SDT of CHD

(1) Relationship between number and severity of coronary artery lesion and severity of Blood stasis Syndrome

There were significant differences in the distribution of coronary artery lesion number among various degree Blood stasis Syndrome groups (X=72.407, P<0.001) . The percentage of one-artery lesion was 63.1% in slight Blood stasis Syndrome, and the percentage of one-artery lesion (30.6%) , two-artery lesion (36.1%) and three-artery lesion (33.3%) was approximately close in secondary Blood stasis Syndrome, while three-artery lesion ranked first in serious Blood stasis Syndrome (63.4%) . From slight Blood stasis Syndrome to serious Blood stasis Syndrome, average number of coronary artery lesion increased one by one, and there were significant differences among them (P<0.05) . There were significant differences in Gensini score among primary Deficiency Syndrome groups (F=96.511, P< 0.001) . Gensini score of slight Blood stasis Syndrome group was lower than that of secondary and serious Blood stasis Syndrome groups (all P<0.01) ; Gensini score of secondary Blood stasis Syndrome group was lower than that of serious Blood stasis Syndrome group (P<0.01) .

（2） Relationship between ACC/AHA type or form of coronary artery lesion and severity of Blood stasis Syndrome

There were significant differences in the distribution of coronary artery lesion ACC/ AHA type among various degree Blood stasis Syndrome groups（X=42.424, P<0.001）. A type lesion（51.2%） was the most in slight Blood stasis Syndrome group, and B type lesion （44.4%） ranked first in secondary Blood stasis Syndrome group, while B type （48.4%） and C type lesion （43.0%） constituted the majority in serious Blood stasis Syndrome group. There were also significant differences in the distribution of coronary artery stenosis type among various degree Blood stasis Syndrome groups（X= 28.305, P<0.001）. Ⅰ type stenosis （57.3%） was the most in slight Blood stasis Syndrome group, Ⅰ type stenosis （37.1%） and Ⅱ type lesion（40.4%） constituted the majority in secondary Blood stasis Syndrome group, while Ⅱ type lesion （45.0%） and Ⅲ type lesion（36.7%） constituted the majority in serious Blood stasis Syndrome group.

Conclusion: 1. （1）From Blood stasis Syndrome, Qi stagnation-Blood stasis Syndrome to Phlegm Turbid-Blood stasis Syndrome, Phlegm heat-Blood stasis Syndrome, and to Cold condensation-Blood stasis Syndrome in secondary Excess Syndrome of CHD, not only did coronary artery lesion number increase unceasingly, and its stenosis become gradually serious, but coronary artery lesion developed from simple to complicated. This showed that the development of secondary Excess Syndrome in CHD was from Blood stasis Syndrome, Qi stagnation-Blood stasis Syndrome to Phlegm Turbid-Blood stasis Syndrome, Phlegm heat-Blood stasis Syndrome, and to Cold condensation-Blood stasis Syndrome. （2） Unstable coronary artery lesion was more detected in Phlegm heat-Blood stasis Syndrome, while stable coronary artery lesion was more detected in the other four secondary Excess Syndromes, but complicated lesion constituted the majority in Phlegm Turbid-Blood stasis Syndrome and Cold condensation-Blood stasis Syndrome. 2. （1） From Qi-Deficiency, Yin-Deficiency to Yang-Deficiency in primary Deficiency Syndrome, not only did coronary artery lesion number increase unceasingly, and its stenosis become gradually serious, but coronary artery lesion developed from simple to complicated. This showed that the development of primary Deficiency Syndrome in CHD had a background in coronary artery pathological anatomy. Coronary artery lesion is simple and stable in Qi-Deficiency but stable and complicate in Yang-Deficiency, while unstable coronary artery lesion was detected relative more in Yin-Deficiency. Coronary artery was blocked in Yang-collapse, because pump failure of heart resulted in the occurrence of Yang-collapse. 3. From slight Blood stasis Syndrome, to secondary Blood stasis Syndrome, and to serious Blood stasis Syndrome, not only did coronary artery lesion number increase unceasingly, and did its stenosis become gradually serious, but coronary artery lesion type developed from A type to B type and C type. 4. There was a correlation between TCM-SDT and CAG results in CHD. It was valuable in clinical practice that some CAG indices were regarded as objective markers of TCM-SDT and severity of Blood stasis Syndrome in CHD.

Key words: atherosclerosis coronary arteriography coronary heart disease
TCM Syndrome Differentiation-type

Part Two: Relationship between the Levels of Hcy and hs-CRP and TCM Syndrome Differentiation-type in Coronary Heart Disease

Both hyperhomocysteinemia and C-reactive protein（CRP） are thought to be independent risk factors of coronary heart disease（CHD）. There is no systemic investigation about the relationship between the TCM Syndrome Differentiation-type （TCM-SDT） with CHD and the levels of Hcy and CRP yet.

Objective: To study the correlation between Hcy , CRP and severity , activity of coronary artery lesion, the relationship of Hcy and CRP and traditional risk factors of CHD, and the variance of levels of Hcy and CRP among the TCM Syndrome Differentiation-type（TCM-SDT） and among various degree Blood stasis Syndrome with CHD.

Methods: 1. 173 patients with CHD who were finally diagnosed by CAG were divided into different groups according to different criteria for recruiting. 2. Patients' TCM-SDT was differentiated. All 173 patients had secondary Excess Syndrome, among them 26 patients with Blood stasis Syndrome, 42 with Qi stagnation-Blood stasis Syndrome, 39 with Phlegm Turbid-Blood stasis Syndrome, 47 with Phlegm heat-Blood stasis Syndrome, and 19 with Cold condensation-Blood stasis Syndrome. 157 patients with obvious primary Deficiency Syndrome, among them 81 were Qi-Deficiency, 37 Yin-Deficiency, 22 Yang-Deficiency, and 17 Yang-collapse. All the 173 patients had various degree Blood stasis Syndrome, among them 48 with slight, 66 with secondary, and 59 with severe. 3. 43 age-matched adults involved normal group（19 samples） and coronary angiography （CAG） normal group（24 samples）. 4. Patient's fasting plasma tHcy was measured with high-performance liquid chromatographic fluorescent method （HPLC-FD）, and fasting plasma hs-CRP with Immunoturbidimetric test. 5. Subsequent statistic processing included analysis of variance and t test.

Results:

1. The change of plasma tHcy and the relationship between tHcy and TCM-SDT in CHD

（1） The tHcy concentration of CHD group（19.15 ± 9.03 μmol/L） was obviously higher than that of normal group （7.87 ± 2.73 μmol/L） and CAG normal group （8.91 ± 3.64 μmol/L）（all $P<0.01$）, and there was no obvious difference between the two latter groups. The tHcy concentrations of sub-groups with CHD were obviously higher than that of normal group and CAG normal group（all $P<0.01$）, those sub-groups involving ①sub-groups according to clinical diagnosis,②whether or not myocardial infarction （MI） ever, ③the number of coronary artery lesion, ④ACC/AHA type of coronary artery lesion, ⑤ form of coronary artery stricture, ⑥Gensini score of coronary artery lesion. The tHcy concentration is not obvious different among clinical diagnosis groups; but MI group was obviously higher than non- MI group （$P<0.01$）; one-artery lesion group obviously lower than two-artery lesion group（$P<0.05$） and three-artery lesion group（$P<0.01$）; A type lesion group obviously lower than B type lesion group（$P<0.05$）

and C type lesion group (P<0.01); Ⅲ type lesion group obviously higher than Ⅰ type lesion group and Ⅱ type lesion group (all P<0.05) ; Gensini score <20 group obviously lower than Gensini score 20~40 group and Gensini score >40 group (all P<0.05) .

(2) All patients were divided into two groups according to each risk factor of CHD. The results showed that the tHcy concentration of male is higher than that of female, the tHcy concentration of smoker higher than that of non-smoker; but there was not remarkable difference between high-risk age group and low-risk age group, between hypertension group and non-hypertension group, between hyperlipemia group and non-hyperlipemia group, and between family history group and non-family history group.

(3) TCM-SDT in CHD showed some significant results. Whether Blood stasis Syndrome, Qi stagnation-Blood stasis Syndrome, Phlegm Turbid-Blood stasis Syndrome, Phlegm heat-Blood stasis Syndrome, Cold condensation-Blood stasis Syndrome, or Qi-Deficiency, Yin-Deficiency, Yang-Deficiency, Yang-collapse, and various degree Blood stasis Syndrome with CHD, their tHcy levels were obviously higher than that of normal group and CAG normal group (all P<0.01) . The tHcy level of Blood stasis Syndrome group was significantly lower than that of Phlegm Turbid-Blood stasis Syndrome group and that of Cold condensation-Blood stasis Syndrome group (all P<0.01) ; Qi stagnation-Blood stasis Syndrome group was also significantly lower than Phlegm Turbid-Blood stasis Syndrome group (P<0.01) and Cold condensation-Blood stasis Syndrome group (P<0.05) ; Yin-Deficiency group was significantly lower than Qi-Deficiency group (P<0.05) and Yang-Deficiency group (P<0.01) ; slight Blood stasis Syndrome group was significantly lower than serious Blood stasis Syndrome group (P<0.01) .

2. The change of plasma hs-CRP and the relationship between hs-CRP and TCM-SDT in CHD

(1) The hs-CRP concentration of CHD group (4.87 ± 2.89mg/L) was obviously higher than that of normal group (1.29 ± 1.19 mg/L) and CAG normal group (1.61 ± 1.32 mg/L) (all P<0.01), and there is not obvious difference between the two latter groups. The hs-CRP concentrations of sub-groups with CHD were obviously higher than that of normal group and CAG normal group (all P<0.01) , those sub-groups involving ①sub-groups according to clinical diagnosis,②whether or not MI ever, ③the number of coronary artery lesion, ④ACC/AHA type of coronary artery lesion, ⑤form of coronary artery stricture, ⑥Gensini score of coronary artery lesion. The hs-CRP concentration of unstable angina pactoris (UA) group and that of acute myocardial infarction (AMI) group were obviously higher than that of stable angina pactoris(SA) groups(all P<0.01); there was no obviously difference between MI group and non-MI group; one-artery lesion group was obviously lower than three-artery lesion group(P<0.01); B type lesion group obviously higher than A type lesion group and C type lesion group(all P<0.01); Ⅱ type lesion group obviously higher than Ⅰ type lesion group and Ⅲ type lesion group(all P<0.01); Gensini score <20 group obviously lower than Gensini score 20~40 group (P<0.01) and Gensini score >40 group (P<0.05) .

（2）All patients were divided into two groups according to each risk factor of CHD. The results showed that the hs-CRP concentration of male was higher than that of female, the hs-CRP concentration of hypertension group higher than that of non-hypertension group, the hs-CRP concentration of diabetes mellitus（DM） group higher than that of non-DM group, the hs-CRP concentration of smoker higher than that of non-smoker; but there was not remarkable difference between high-risk age group and low-risk age group, between hyperlipemia group and non- hyperlipemia group, and between family history group and non-family history group.

（3） There were some significant results about hs-CRP in TCM-SDT of CHD. Whether Blood stasis Syndrome, Qi stagnation-Blood stasis Syndrome, Phlegm Turbid-Blood stasis Syndrome, Phlegm heat-Blood stasis Syndrome, Cold condensation-Blood stasis Syndrome, or Qi-Deficiency, Yin-Deficiency, Yang-Deficiency, Yang-collapse, and various degree Blood stasis Syndrome with CHD, their hs-CRP levels were obviously higher than that of normal group and CAG normal group（all $P<0.01$）. The hs-CRP level of Qi stagnation-Blood stasis Syndrome group was significantly lower than that of Phlegm Turbid-Blood stasis Syndrome group and that of Phlegm heat-Blood stasis Syndrome group（all $P<0.01$）; Qi stagnation-Blood stasis Syndrome group was also significantly lower than Cold condensation-Blood stasis Syndrome group（$P<0.01$）, and Phlegm Turbid-Blood stasis Syndrome group significantly lower than Phlegm heat-Blood stasis Syndrome group（$P<0.05$）. The hs-CRP level of Qi-Deficiency group was significantly lower than that of Yin-Deficiency group and Yang-collapse group（all $P<0.01$）, Qi-Deficiency group was also significantly lower than Yang-Deficiency group（$P<0.05$）; serious Blood stasis Syndrome group was significantly higher than slight Blood stasis Syndrome group（$P<0.01$） and secondary Blood stasis Syndrome group（$P<0.05$）.

Conclusion: 1. plasma tHcy level of patients with CHD was abnormally high. It could be relative to plasma high tHcy level that male and smoker suffer from CHD easily. Plasma tHcy level of CHD had relation to number, severity and course of coronary artery lesion, but irrelative to its stability. This showed that Hcy causing As, moreover, resulting in CHD was increasing procedure. 2. plasma hs-CRP level of patients with CHD was abnormally high. It could be relative to plasma high hs-CRP level that the patients of hypertension and diabetes mellitus suffer from CHD easily. Plasma hs-CRP level reflected severity and stability of coronary artery lesion. This shows that CRP has reference value in clinical diagnosis of CHD, estimates the severity of patient's condition, and has value in predicting prognosis. 3. Because TCM-SDT and the severity of Blood-stasis Syndrome in CHD had relation to plasma levels of tHcy and hs-CRP, It was valuable in clinical practice that tHcy and hs-CRP were regarded as objective markers of TCM-SDT and severity of Blood stasis Syndrome in CHD.

Key words: atherosclerosis coronary arteriography coronary heart disease
TCM Syndrome Differentiation-type C-reactive protein
Homocysteine inflammation

保肾口服液对 IgA 肾病小鼠肾小球转化生长因子 β1 蛋白及 mRNA 的影响

吴 竞 杨爱国 阮诗玮 王 智 洪江淮 丘余良

摘要 目的 观察 TGF-β_1 蛋白及 mRNA 基因在 IgA 肾病小鼠肾小球中的表达及保肾口服液对该表达的影响。**方法：** 采用口服牛血清白蛋白及静注葡萄糖球菌肠毒素制成的小鼠 IgA 肾病模型，免疫组化和原位杂交检测肾小球转化生长因子 β_1（TGF-β_1）蛋白和 mRNA。**结果：** 5 个治疗组中保肾口服液大剂量组肾小球内 TGF-β_1 蛋白表达最弱；保肾口服液大剂量组比模型组 TGF-β_1 mRNA 表达减弱，其它组比较没有变化或增强。**结论：** 大剂量保肾口服液可能抑制 IgA 肾病小鼠肾脏局部 TGF-β_1 基因表达而达到下调肾脏局部 TGF-β_1 蛋白质的表达水平从而减轻肾损伤，起到保护肾脏的作用。

关键词 保肾口服液 IgA 肾病 转化生长因子 β_1 免疫组化 原位杂交

近年来研究发现许多细胞因子在 IgA 肾病及其他系膜增生性肾小球疾病发病过程中起重要作用，其中转化生长因子 β（TGF-β）是最重要的细胞因子之一[1-3]。有研究表明在人类肾小球疾病，TGF-β 的增加与系膜增殖病变及系膜外基质沉积的严重程度呈正相关，进一步证实它是肾小球硬化中的重要调控因子[4]。本研究旨在通过观察 TGF-β_1 蛋白及 mRNA 基因在 IgA 肾病小鼠肾小球中的表达及保肾口服液对该表达的影响，探讨保肾口服液治疗 IgA 肾病的可能作用机理。

1 材料与方法

1.1 实验动物

昆明雌性小鼠 79 只，SPF 级条件下饲养，体重 16-18g，中国科学院上海实验动物中心提供。随机分为正常对照组、模型组、保肾口服液大剂量组、保肾口服液中剂量组、保肾口服液小剂量组、潘生丁组、肾炎康复片组，正常组小鼠 9 只，其余各组分别为 12 只。

1.2 药物

保肾口服液是福建省人民医院肾内科多年研制出来治疗 IgA 肾病的有效方药，主要由益气养阴的药物（太子参，黄芪，桑椹子，苦石莲，益母草，当归，茯苓，车前子，茜草等）组成，院内制剂，每 1ml 保肾口服液含生药 1.86g。潘生丁购自上海九福药业有限公司。肾炎康复片，购自天津同仁堂制药厂。

1.3 模型制备

参照刘宏伟等[5]报道的方法（刘宏伟参照 Emiancipator[6]和刘志红等[7]报道的方法加以改良）：隔日口服含牛血清白蛋白（BSA）200mg/kg 体重（用 1%盐酸酸化水稀释）的酸化水，在口服 BSA 的同时于第 6 周开始尾静脉注射 BSA20mg/kg 体重,每日 1 次，连续 3 次，8 周时附加尾静脉注射葡萄糖球菌肠毒素（SEB）0.6mg/kg 体重，每周 1 次，连续 3 周，然后观察至第 12 周末。

1.4 分组与用药

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