

# 中医运动疗法对冠心病患者炎症水平影响的研究进展

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**摘要:** **目的:** 冠状动脉粥样硬化性心脏病, 简称冠心病, 亦称缺血性心脏病, 是指冠状动脉粥样硬化使血管腔狭窄或阻塞, 或因冠状动脉功能性改变痉挛导致心肌缺血缺氧或坏死而引起的心脏病。近些年, 国家颁布的《健康中国 2030 规划纲要》中明确提出了降低重大慢性病过早死亡率的发展目标, 其中就有将心血管疾病的防控工作视为未来我国卫生工作的重点之一; 同时纲要也明确指出要加强体医融合及非医疗健康干预, 开展传统体育养生项目, 推动形成体医融合的疾病管理与健康服务模式。此外, 《中医药发展“十三五”规划》中明确指出要以慢性病管理为重点, 以治未病理念为核心, 推广太极拳、八段锦等中医传统运动, 建立一批民族特色的临床诊疗方案与指南。根据规划要求以及我国康复医学的发展, 我国心脏康复领域逐渐引入中医药相关技术理念, 其中就有将具有中国文化特色的中医传统运动应用于心脏康复, 在心脏康复运动治疗模式中开展中医运动疗法。目前, 炎症反应驱动许多动脉粥样硬化的形成过程, 引起了国内外广泛关注, 已有大量研究表明运动康复可以通过降低炎症因子缓解冠心病的动脉粥样硬化。而中医运动疗法作为具有中国文化特色的心脏康复运动, 研究表明可以降低冠心病患者的不良事件、改善生活质量和心肺功能, 并减轻患者医疗负担等。但目前相关研究多为中医运动疗法对冠心病患者心肺功能和生活质量(步行能力、抓握力、睡眠及情绪)等方面的研究, 对其改善冠心病发病机制上的挖掘较少, 对其是否通过改善炎症状态来为患者带来临床获益尚无回顾性研究。因此, 在明确冠心病是典型低度慢性炎症的基础上, 本研究以炎症反应为切入点, 对中医运动疗法对冠心病患者炎症指标的影响进行综述, 并在此基础上提出临床应用中的问题与未来的研究建议, 以期中医运动疗法在心脏康复运动领域的应用提供支撑和依据。

**方法:** 通过 Web of Science、Pub Med、Embase、Cochrane Library、EBSCO、CNKI、SinoMed、WanFang Data 和 VIP 数据库, 检索中医运动疗法(太极拳、八段锦、易筋经、五禽戏、六字诀)干预具有冠心病危险因素患者的随机对照临床试验(RCT), 检索时限均为建库至 2021 年 5 月, 同时对纳入研究文献的参考文献进行手工检索, 以补充获取相关文献。检索策略采用主题词与自由词相结合的形式, 中文检索词主要包括: 冠心病、冠状动脉粥样硬化、心肌缺血、稳定型心绞痛、炎症、炎症因子、太极/太极拳、八段锦、易筋

经、五禽戏、六字诀、随机对照试验等。英文检索词主要包括：coronary disease、coronary atherosclerosis、myocardial ischemia、stable angina pectoris、Inflammatory Factors、inflammation、inflammatory response、tai ji /tai chi /tai ji quan /tai chi quan、Baduanjin、Yijinjing、Wuqinxi、Liuzhijue、randomized controlled trial 等。排除不相关的文献后，对中医运动疗法对冠心病患者炎症水平的影响进行综述，并在此基础上提出临床应用中的问题与未来的研究建议。**结果：**初步检索共获得文献 267 篇，其中英文文献 180 篇，中文文献 87 篇，排除不符合文献后，对中医运动疗法干预冠心病患者炎症水平的效果进行综述。从干预方法来看，发现将太极拳作为心脏康复干预手段改善患者炎症状态的研究较多，八段锦次之，五禽戏更次之。从干预结果来看，发现中医运动疗法对冠心病人群的 baPWV、血脂水平、内皮素及血清炎症因子水平、血流动力学等方面均有不同程度的改善，其中炎症因子的改善包括：IL-4、IL-6、IL-10、IL -18、TNF-a、MMP-9、hs-CRP、sICAM-1、sVCAM-1。本研究的局限性及中医运动疗法在临床研究中存在的问题：（1）检索文献的干预方法呈多样化，如太极拳种类较多，干预选择的套路并不一致，八段锦等功法同样存在风格迥异的问题，这些都可能影响本研究的结果；这代表在临床研究中中医运动疗法可能缺少标准化的心脏康复运动方案体系；（2）检索文献的干预周期、强度频率和每次干预时间也不一致，其干预过程的安全性和不良事件难以判断，这代表在临床研究中中医运动疗法可能缺少科学化的运动强度；（3）检索文献的结局指标多为现象描述，对其产生现象的进一步潜在机制的探索较少，且多为小样本单中心研究；仍需对中医运动疗法更多的科学化、大样本、多中心临床随机对照研究；（4）本研究检索文献均为中英文，缺乏其他语言的文献。**结论：**综上所述中医运动疗法对冠心病患者的炎症状态有着良好疗效，这可能对缓解血管内皮损伤和减少沉淀物在动脉内膜的堆积有着积极效果，对进一步减轻动脉阻塞和功能障碍，改善斑块状态，促进血氧供应产生良性影响。但受相关研究数量和质量限制，上述结论还需未来开展更多高质量的实证研究加以验证。

**关键词：**中医运动疗法；冠心病；炎症；太极拳；八段锦

## Research progress on the influence of exercise therapy of traditional Chinese medicine on the level of inflammation in patients with coronary heart disease

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**Abstract: Objective:** Coronary atherosclerotic heart disease, or coronary heart disease, also called ischemic heart disease, is a heart disease caused by coronary atherosclerosis that narrow or block the lumen, or caused by myocardial ischemia, hypoxia or necrosis caused by altered coronary functional spasm. In recent years, the Outline of the Healthy China 2030 Plan has clearly set out the development goal of reducing premature mortality from major chronic diseases, which regards the prevention and control of cardiovascular diseases in China as one of the health work in the future, to strengthen medical integration and non-health intervention, carry out traditional sports health projects, and promote the formation of health integration disease management and health service mode. In addition, the "13th Five-Year Plan" for the Development of Traditional Chinese Medicine clearly pointed out that the focus on chronic diseases and the concept of no disease treatment as the core, promote traditional Chinese medicine sports such as Taijiquan and Badaguan, and establish a number of clinical diagnosis and treatment plans and guidelines with ethnic characteristics. According to the planning requirements and the development of rehabilitation medicine in China, TCM related technology is gradually introduced in the field of cardiac rehabilitation, among which traditional TCM sports with Chinese cultural characteristics are applied to cardiac rehabilitation, and TCM sports therapy is carried out in the treatment mode of cardiac rehabilitation sports. At present, the inflammatory reaction drives the formation process of many atherosclerosis, which has attracted wide attention at home and abroad. A large number of studies have shown that exercise rehabilitation can relieve the atherosclerosis of coronary heart disease by reducing inflammatory factors. As a cardiac rehabilitation sports with Chinese cultural characteristics, the research shows that it can reduce the adverse events in patients with coronary heart disease, improve the quality of life and cardiopulmonary function, and reduce the medical burden of patients. But the current research is mostly traditional Chinese medicine exercise therapy on cardiopulmonary function and quality of life (walking ability, grip, sleep and mood) in patients with coronary heart disease, less to improve the pathogenesis of coronary heart disease, and there is no retrospective study on whether it can bring clinical benefits to patients by improving the state of inflammation. Therefore, on the basis of clear coronary heart disease is a typical low chronic inflammation, this research with inflammatory response as the breakthrough

point, the effect of TCM movement therapy on inflammation index, and on the basis of the clinical application problems and future research suggestions, in order to provide support and basis for the application of traditional Chinese medicine sports therapy in the field of cardiac rehabilitation exercise. **Methods:** Through the Web of Science, Pub Med, Embase, Cochrane Library, EBSCO, CNKI, SinoMed, WanFang Data and VIP databases, To retrieve randomized controlled clinical trials (RCT) of TCM sports therapy (Taijiquan, Badaguan, Yijin Jing, Wuqinxi, and six-character formula) for intervention in patients with risk factors for coronary heart disease, The retrieval time limit is from library building to May 2021, Meanwhile, the references incorporated in the research literature were searched manually, To supplement the access to the relevant literature. The search strategy adopts the form of combining theme words and free words. Chinese search words mainly include: coronary disease, coronary atherosclerosis, myocardial ischemia, stable angina pectoris, Inflammatory factors, inflammation, inflammatory response, tai ji /tai chi /tai ji quan /tai chi quan, Baduanjin, Yijinjing, Wuqinxi, Liuzhijue, randomized controlled trial, etc. The English search words mainly include: coronary disease, coronary atherosclerosis, myocardial ischemia, stable angina pectoris, inflammatory factors, inflammation, inflammatory response, tai ji /tai chi /tai ji quan /tai chi quan, Baduanjin, Yijinjing, Wuqinxi, Liuzhijue, randomized controlled trial, etc. After the unrelated literature is excluded, the impact of traditional Chinese medicine exercise therapy on the level of inflammation in patients with coronary heart disease is reviewed, and the problems in clinical application and future research suggestions are proposed. **Results:** 267 literature was obtained, including 180 English literature and 87 Chinese literature. After excluding the unqualified literature, the effect of TCM exercise therapy intervention in patients with coronary heart disease was reviewed. From the perspective of intervention methods, it was found that Taijiquan was used as a cardiac rehabilitation intervention to improve the inflammatory status of patients, and it was more studied. From the perspective of the intervention results, it was found that traditional Chinese medicine exercise therapy has improved to different degrees in baPWV, blood lipid levels, endothelin and serum inflammatory factor levels, and hemodynamics in people with coronary heart disease, among which the improvement of inflammatory factors includes: IL-4, IL-6, IL-10, IL-18, TNF-a, MMP-9, hs-CRP, sICAM-1, sVCAM-1, Ga L-3, etc. Limitations and clinical research issues: (1) The selection of intervention methods for retrieval of literature is

diverse, such as different types of Taijiquan, and different styles, which may affect the results of this study; This represents the possible lack of standardized cardiac rehabilitation exercise regimen in clinical studies; (2) The intervention cycle, intensity frequency and time of each intervention of the retrieved literature are also inconsistent, and the safety and adverse events of the intervention process are difficult to judge, representing the possible lack of scientific exercise intensity in TCM exercise therapy in clinical studies; (3) The outcome indicators of the retrieved literature are mostly phenomenon description, less further potential mechanisms of their phenomena, and more small sample single-center studies; more scientific, large sample, multi-center clinical randomized control of TCM exercise therapy is needed; (4) The search literature is both Chinese and English and lacking in other languages. **Conclusion:** In conclusion, TCM exercise therapy has good effect on the inflammatory state of patients with coronary heart disease, which may have a positive effect on alleviating vascular endothelial injury and reducing the accumulation of sediment in the arterial endometrium, further reducing artery obstruction and dysfunction, improving plate state and promoting blood oxygen supply. However, limited by the quantity and quality of relevant studies, the above conclusions also need to be verified by more high-quality empirical studies in the future.

**Key words:** Traditional Chinese medicine, Exercise therapy, Coronary heart disease, Inflammation, Taijiquan, Baduanjin