

[首页](#)[最新一期](#)[期刊动态](#)[过刊浏览](#)[医学视频](#)[在线投稿](#)[期刊检索](#)[期刊订阅](#)[合作科室](#)

期刊导读

8卷12期 2014年6月 [最新]



期刊存档

期刊存档

[查看目录](#)

期刊订阅



在线订阅



邮件订阅



RSS

作者中心



资质及晋升信息



作者查稿



写作技巧



投稿方式



作者指南

编委会

期刊服务



建议我们



会员服务



广告合作



继续教育

您的位置: [首页](#)>> 文章摘要[中文](#) [English](#)

缺血性心脏病微血管再生临床研究进展

马晓磊, 吕安林, 艾世宜, 邱翠婷, 姜晓宇, 郭显, 李珊, 李芹

710032 西安, 第四军医大学西京医院心内科[马晓磊(在读硕士研究生)、吕安林、艾世宜(在读硕士研究生)、姜晓宇(在读硕士研究生)、郭显(在读硕士研究生)、李珊(在读硕士研究生)、李芹(在读硕士研究生)]

吕安林, Email: 2458107857@qq.com

摘要:缺血性心脏病的治疗, 首先要解决心肌组织的缺氧和营养物质供应不足。促进缺血心肌区微循环是当前治疗缺血性心脏病的研究方向之一。临床促血管再生的治疗方式包括基因治疗、细胞移植等, 目前取得了显著的进展, 显示了其广泛的应用前景。

关键词:心肌缺血; 心力衰竭; 血管发生; 血管新生

[评论](#) [收藏](#) [全文](#)

文献标引: 马晓磊, 吕安林, 艾世宜, 邱翠婷, 姜晓宇, 郭显, 李珊, 李芹. 缺血性心脏病微血管再生临床研究进展. 中华临床医师杂志(电子版), 2014, 8(9): 1748-1752. [复制](#)

参考文献:

[1] Lavu M, Gundewar S, Lefter DJ. Gene therapy for ischemic heart disease[J]. J Am Coll Cardiol, 2011, 50(5): 742-750.

[2] Seiler C, Stoller M, Pitt B, et al. The human coronary collateral circulation: clinical importance[J]. Eur Heart J, 2013, 34(34): 2674-2682.

[3] Scianna M, Bell CG, Preziosi L. A review of mathematical models for the formation of collateral networks[J]. J Theor Biol, 2013, 333: 174-209.

[4] Wolfram JA, Donahue JK. Gene therapy to treat cardiovascular disease[J]. J Am Coll Cardiol, 2011, 57(4): e119.

[5] Kajdaniuk D, Marek B, Borgiel-Marek H, et al. Vascular endothelial growth factor-1: in physiology and pathophysiology[J]. Endokrynol Pol, 2011, 62(5): 444-455.

[6] Hedman M, Muona K, Hedman A, et al. Eight-year safety follow-up of coronary artery disease patients after local intracoronary VEGF gene transfer[J]. Gene Ther, 2009, 16(5): 623-630.

[7] Stewart DJ, Kutryk MJ, Fitchett D, et al. VEGF gene therapy fails to improve

ischemic myocardium in patients with advanced coronary disease: results of the NORTH
Ther, 2009, 17(6): 1109-1115.

[8] Kajdaniuk D, Marek B, Foltyn W, et al. Vascular endothelial growth factor (V
endocrinology and oncology[J]. Endokrynol Pol, 2011, 62(5): 456-464.

[9] Itoh N, Ornitz DM. Fibroblast growth factors: from molecular evolution to ro
metabolism and disease[J]. J Biochem, 2011, 149(2): 121-130.

[10] Henry TD, Grines CL, Watkins MW, et al. Effects of Ad5FGF-4 in patients wit
analysis of pooled data from the AGENT-3 and AGENT-4 trials[J]. J Am Coll Cardiol, 2
1046.

[11] Madonna R, Cevik C, Nasser M, et al. Hepatocyte growth factor: molecular bi
in cardioprotection and cardiovascular regeneration[J]. Thromb Haemost, 2012, 107(4)

[12] Yang ZJ, Zhang YR, Chen B, et al. Phase I clinical trial on intracoronary a
hHGF treating severe coronary artery disease[J]. Mol Biol Rep, 2009, 36(6): 1323-132

[13] Westenbrink BD, Oeseburg H, Kleijn L, et al. Erythropoietin stimulates norm
progenitor cell-mediated endothelial turnover, but attributes to neovascularization
of local ischemia[J]. Cardiovasc Drugs Ther, 2008, 22(4): 265-274.

[14] Tang YD, Hasan F, Giordano FJ, et al. Effects of recombinant human erythrop
activation in acute myocardial infarction: results of a double-blind, placebo-contro
trial[J]. Am Heart J, 2009, 158(6): 941-947.

[15] Yockman JW, Kastenmeier A, Erickson HM, et al. Novel polymer carriers and g
treatment of myocardial ischemia and infarction[J]. J Control Release, 2008, 132(3):

[16] Kastrup J. Gene therapy and angiogenesis in patients with coronary artery d
Rev Cardiovasc Ther, 2010, 8(8): 1127-1138.

[17] Baldazzi F, Jorgensen E, Ripa RS, et al. Release of biomarkers of myocardia
direct intramyocardial injection of genes and stem cells via the percutaneous transl
Heart J, 2008, 29(15): 1819-1826.

[18] Cao Z, Bao M, Miele L, et al. Tumour vasculogenic mimicry is associated wit
human cancer patients: a systemic review and meta-analysis[J]. Eur J Cancer, 2013, 4

[19] Goel HL, Mercurio AM. VEGF targets the tumour cell[J]. Nat Rev Cancer, 2013

[20] Bandello F, Lattanzio R, Zucchiatti I, et al. Pathophysiology and treatment
retinopathy[J]. Acta Diabetol, 2013, 50(1): 1-20.

[21] Virgili G, Parravano M, Menchini F, et al. Antiangiogenic therapy with anti
endothelial growth factor modalities for diabetic macular oedema[J]. Cochrane Databa
12: D7419.

[22] Leblond AL, O'Sullivan J, Caplice N. Bone marrow mononuclear stem cells: po
treatment of myocardial infarction[J]. Stem Cells Cloning, 2009, 2: 11-19.

[23] Miettinen JA, Salonen RJ, Niemela M, et al. Effects of intracoronary infusion of bone marrow-derived stem cells on pulmonary artery pressure and diastolic function after myocardial infarction. *Int J Cardiol*, 2010, 145(3): 631-633.

[24] Roncalli J, Mouquet F, Piot C, et al. Intracoronary autologous mononuclear cell infusion for acute myocardial infarction: results of the randomized multicenter BONAMI study. *Heart J*, 2011, 32(14): 1748-1757.

[25] Traverse JH, Henry TD, Pepine CJ, et al. Effect of the use and timing of bone marrow-derived mononuclear cell delivery on left ventricular function after acute myocardial infarction: a randomized trial[J]. *JAMA*, 2012, 308(22): 2380-2389.

[26] Charwat S, Lang I, Dettke M, et al. Effect of intramyocardial delivery of bone marrow-derived mononuclear stem cells on the regional myocardial perfusion. NOGA-guided subcutaneous injection of bone marrow-derived mononuclear stem cells in acute myocardial infarction: the MYSTAR prospective randomised study[J]. *Thromb Haemost*, 2010, 103(3): 564-571.

[27] Watt S M, Gullo F, van der Garde M, et al. The angiogenic properties of mesenchymal stem/stromal cells and their therapeutic potential[J]. *Br Med Bull*, 2013, 108: 25-53.

[28] Grajek S, Popiel M, Gil L, et al. Influence of bone marrow stem cells on left ventricular perfusion and ejection fraction in patients with acute myocardial infarction of anterior wall: a randomized clinical trial: Impact of bone marrow stem cell intracoronary infusion on microcirculation[J]. *Eur Heart J*, 2010, 31(6): 691-702.

[29] Straburzynska-Migaj E, Popiel M, Grajek S, et al. Exercise capacity, arrhythmias, and pulmonary function is not influenced by intracoronary injection of bone marrow stem cells in patients with acute myocardial infarction[J]. *Int J Cardiol*, 2012, 159(2): 134-138.

[30] Silvestre JS. Pro-angiogenic cell-based therapy for the treatment of ischemic heart diseases[J]. *Thromb Res*, 2012, 130 Suppl 1: S90-S94.

[31] Taljaard M, Ward MR, Kutryk MJ, et al. Rationale and design of Enhanced Angiogenesis in Acute Myocardial Infarction (ENACT-AMI): the first randomized placebo-controlled trial of progenitor cell therapy for acute myocardial infarction[J]. *Am Heart J*, 2010, 159(3): 407-414.

[32] Leistner DM, Fischer-Rasokat U, Honold J, et al. Transplantation of progenitor cells and regeneration enhancement in acute myocardial infarction (TOPCARE-AMI): final 5-year follow-up: long-term safety and efficacy[J]. *Clin Res Cardiol*, 2011, 100(10): 925-934.

[33] Herrmann JL, Abarbanell AM, Weil BR, et al. Optimizing stem cell function for treatment of ischemic heart disease[J]. *J Surg Res*, 2011, 166(1): 138-145.

[34] Mathieu E, Lamirault G, Toquet C, et al. Intramyocardial delivery of mesenchymal stem cells seeded hydrogel preserves cardiac function and attenuates ventricular remodeling after myocardial infarction[J]. *PLoS One*, 2012, 7(12): e51991.

[35] Bernardo ME, Fibbe WE. Safety and efficacy of mesenchymal stromal cell therapy in hematological disorders[J]. *Ann N Y Acad Sci*, 2012, 1266: 107-117.

[36] Jung Y, Bauer G, Nolte JA. Concise review: Induced pluripotent stem cell-derived cardiac stem cells: progress toward safe clinical products[J]. *Stem Cells*, 2012, 30(1): 42-48.

[37] Hu Z, Zhang F, Yang Z, et al. Low-dose aspirin promotes endothelial progenitor cell proliferation and adhesion and prevents senescence[J]. Cell Biol Int, 2008, 32(7): 761-768.

[38] Holmes CE, Jasielec J, Levis JE, et al. Initiation of aspirin therapy modulates endothelial nitric oxide synthase protein levels in women with breast cancer receiving tamoxifen therapy[J]. Clin Transl Oncol, 2008, 10(4): 386-390.

[39] Sanchez DML, Neysari S, Jakob S, et al. B2-kinin receptor plays a key role in endothelial nitric oxide synthase converting enzyme inhibitor-, and vascular endothelial growth factor-stimulated in vivo nitric oxide production in the hypoxic mouse heart[J]. Cardiovasc Res, 2008, 80(1): 106-113.

[40] Sharma A, Bettis DI, Cowden JW, et al. Localization of angiotensin converting enzyme in the rat cornea and its role in controlling corneal angiogenesis in vivo[J]. Mol Vis, 2010, 16(1): 10-17.

[41] Wuerzner G, Burnier M, Waeber B. Critical review of cancer risk associated with angiotensin II receptor blocker therapy[J]. Vasc Health Risk Manag, 2011, 7: 741-747.

[42] Bhaskaran K, Douglas I, Evans S, et al. Angiotensin receptor blockers and risk of cancer: a cohort study among people receiving antihypertensive drugs in UK General Practice Research Unit[J]. BMJ, 2012, 344: e2697.

[43] Stati T, Musumeci M, Maccari S, et al. beta-blockers promote angiogenesis in vitro: a ring assay[J]. J Cardiovasc Pharmacol, 2014, 46(1): 1-8.

[44] Nishizawa T, Cheng XW, Jin Z, et al. Ca(2+) channel blocker benidipine promotes endothelial nitric oxide synthase angiogenesis and reduces both left-ventricular diastolic stiffness and mortality in hypertensive rats[J]. J Hypertens, 2010, 28(7): 1515-1526.

[45] Yang Y, Chin A, Zhang L, et al. The role of traditional Chinese medicines in promoting endothelial nitric oxide synthase angiogenesis[J]. Phytother Res, 2014, 28(1): 1-8.

[46] Peng L, Sun S, Xie LH, et al. Ginsenoside Re: pharmacological effects on cardiac function and endothelial nitric oxide synthase[J]. Cardiovasc Ther, 2012, 30(4): e183-e188.

[47] Gao XF, Shi HM, Sun T, et al. Effects of Radix et Rhizoma Rhodiolae Kirilow on endothelial nitric oxide synthase von Willebrand factor, hypoxia-inducible factor 1 and vascular endothelial growth factor expression in the hearts of rats with acute myocardial infarction[J]. Zhong Xi Yi Jie He Xue Bao, 2009, 7(5): 753-757.

[48] Bai WW, Xing YF, Wang B, et al. Tongxinluo improves cardiac function and attenuates left ventricular remodeling in mice model of myocardial infarction through enhancing angiogenesis[J]. Evidence-Based Complement Alternat Med, 2013, 2013: 813247.

[49] Wang H, Zhang Y, Xia T, et al. Synergistic promotion of blood vessel regeneration by astragaloside IV and ferulic acid from electrospun fibrous mats[J]. Mol Pharm, 2013, 30(12): 2343-2352.

综 述

线粒体解偶联蛋白在中枢神经系统中的作用

王迎青, 叶钦勇. . 中华临床医师杂志: 电子版

2014;8(9):1703-1707.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

星形胶质细胞与阿尔茨海默病

吕田明, 史翠丽, 梁彦珊, 黄小玉. .中华临床医师杂志: 电子版
2014;8(9):1708-1713.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

睡眠限制国内研究现状分析

刘艳, 吴卫平. .中华临床医师杂志: 电子版
2014;8(9):1714-1716.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

脑白质疏松的研究进展

张小雨, 李见, 胡文立. .中华临床医师杂志: 电子版
2014;8(9):1717-1721.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

去铁胺治疗脑出血的研究进展

于焱, 高旭光. .中华临床医师杂志: 电子版
2014;8(9):1722-1725.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

髓母细胞瘤SHH信号通路及靶向抑制剂研究进展

林中啸, 蔡铭, 盛汉松, 张弩. .中华临床医师杂志: 电子版
2014;8(9):1726-1729.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

GCH1基因和神经源性疼痛以及相互作用机制方面的研究进展

李庆伟, 梁啸, 孟纯阳. .中华临床医师杂志: 电子版
2014;8(9):1730-1733.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

KLF2调节内皮细胞功能的研究进展

刘铸容, 皮光环. .中华临床医师杂志: 电子版
2014;8(9):1734-1738.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

高通量测序技术检测T&B细胞CDR3受体库在临床中的应用

张天, 孙素红. .中华临床医师杂志: 电子版
2014;8(9):1739-1742.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

可溶性白细胞分化抗原14在脓毒症中的研究进展

杨吉林, 吴先正. .中华临床医师杂志: 电子版
2014;8(9):1743-1747.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

缺血性心脏病微血管再生临床研究进展

马晓磊, 吕安林, 艾世宜, 邱翠婷, 姜晓宇, 郭显, 李珊, 李芹. .中华临床医师杂志:
2014;8(9):1748-1752.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

小细胞肺癌c-kit蛋白表达及小细胞肺癌化疗后维持治疗探讨

展峰峰, 韩福才. .中华临床医师杂志: 电子版
2014;8(9):1753-1757.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

循环肿瘤细胞的检测在结直肠癌中的应用

陈媛媛, 程勃然, 王振盟, 杨帅龙, 张春晓, 万璐, 熊斌. .中华临床医师杂志: 电

2014;8(9):1758-1762.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

糖尿病视网膜病变的防治进展

梁卫强, 王丽聪. . 中华临床医师杂志: 电子版

2014;8(9):1763-1766.

[摘要](#) [FullText](#) [PDF](#) [评论](#) [收藏](#)

[| 编委会](#) [| 联系我们](#) [| 合作伙伴](#) [| 友情链接](#) [|](#)

© 2014版权声明 中华临床医师杂志(电子版)编辑部
网站建设: 北京华夏世通信息技术有限公司 京ICP备0

北京市公安局西城分局备案编号: 110102000676