

EECP/ECP BIBLIOGRAPHY

BOOKS AND BOOK CHAPTERS

Enhanced External Counterpulsation Waveform Interpretation and Clinical Application; A Primer and Case-Based Troubleshooting Guide

S.Ramasamy, MD
Self-published India 2020

Cardiometabolic Update: A Textbook of Cardiology

Ed: HK Chopra, Shashank R Joshi, GS Wander, Ravi R Kasliwal, Viveka Kumar, AK Pancholia
Chapter 98, Role of Enhanced External Counterpulsation: Future Perspectives
Sanjay Mittal, S. Ramasamy

Coronary Artery Disease: New Approaches without Traditional Revascularization

Ed: GW Barsness MD and DR Holmes Jr. MD
Chapter 6, EECP, 53-66
London, Springer 2012

Scientific Basis of Healthcare: Angina

Ed: CR Martin, MD and VR Preedy, MD
Chapter 10, Enhanced External Counterpulsation Therapy in Coronary Artery Disease Management, 174- 198
Ozlem Soran and Debra L Braverman. Enfield, USA: Science Publishers 2011

Angina Pectoris

Ed: Federico Piscione
Chapter 6, The Role of Enhanced External Counterpulsation Therapy in Management of Coronary Artery Disease, 137-158
Ozlem Soran. Rijeka, Croatia: InTech, October 2011

External Counterpulsation: A Novel Therapy to Stimulate Arteriogenesis

Nikolaos Pagonas, MD
Südwestdeutscher Verlag für Hochschulschriften AG Co. KG, 2011

Heart Failure: Device Management

Ed. Arthur Feldman, MD, PhD
Chapter 13. The Role of Enhanced External Counterpulsation in Heart Failure Management, 151-164
West Sussex, UK: Blackwell Publishing 2010

Enhanced External Counter-pulsation

Jami Shakibi, MD, FACC
Self-Published, Tehran, Iran 2008

Heal Your Heart with EECP: The Only Noninvasive Way to Overcome Heart Disease

Debra Braverman, MD
Berkley, California: Celestial Arts, 2005.

Passing on Bypass

Chapters 8-10
George Jueteronke, DO Pikes Peak Press, 2001

JOURNAL ARTICLES

The impact of Trimetazidine on patients' response in patients on EECF therapy Saad Rasool , Fadhil Al-Amran , Hayder Al-Aubaidy , Najah R Hadi ISSN: 13412051 Volume 25, Issue 08, August, 2020 For link click [here](#).

Enhanced external counterpulsation improves cardiac function in Beagles after cardiopulmonary resuscitation. Xiong J, Zhang W, Wei H, Li X, Dai G, Hu C. Braz J Med Biol Res. 2020 Jan 13;53(1):e9136. doi: 10.1590/1414-431X20199136. eCollection 2020. PMID: 31939599 <https://pubmed.ncbi.nlm.nih.gov/31939599/>

Enhanced External Counterpulsation Efficacy on Exercise Endurance in COPD Patients and Healthy Subjects: A Pilot Randomized Clinical Trial. Zhao M, Huang Y, Li L, Zhou L, Wu Z, Liu Y, Zhang H, Hu C. Int J Chron Obstruct Pulmon Dis. 2020 Jan 7;15:25-31. doi: 10.2147/COPD.S225566. eCollection 2020. PMID: 32021141 <https://pubmed.ncbi.nlm.nih.gov/32021141/>

Effectiveness of Enhanced External Counterpulsation Treatment on Symptom Burden, Medication Profile, Physical Capacity, Cardiac Anxiety, and Health-Related Quality of Life in Patients With Refractory Angina Pectoris. Wu E, Desta L, Broström A, Mårtensson J. J Cardiovasc Nurs. 2020 Jul/Aug;35(4):375-385. doi: 10.1097/JCN.0000000000000638. PMID: 31929322 <https://pubmed.ncbi.nlm.nih.gov/31929322/>

Expert consensus on the clinical application of enhanced external counterpulsation in elderly people (2019). Lin S, Xiao-Ming W, Gui-Fu W. Aging Med (Milton). 2020 Mar 3;3(1):16-24. doi: 10.1002/agm2.12097. eCollection 2020 Mar. PMID: 32232188 <https://pubmed.ncbi.nlm.nih.gov/32232188/>

The Effect of Enhanced External Counterpulsation (EECP) on Quality of life in Patient with Coronary Artery Disease not Amenable to PCI or CABG. Jan R, Khan A, Zahid S, Sami A, Owais SM, Khan F, Asjad SJ, Jan MH, Awan ZA. Cureus. 2020 May 6;12(5):e7987. doi: 10.7759/cureus.7987. <https://pubmed.ncbi.nlm.nih.gov/32523843/>

The Hemodynamic Effect of Enhanced External Counterpulsation Treatment on Atherosclerotic Plaque in the Carotid Artery: A Framework of Patient-Specific Computational Fluid Dynamics Analysis. Du J, Wu G, Wu B, Liu C, Mai Z, Liu Y, Wang Y, Zhang P, Wu G, Liu J. Cardiol Res Pract. 2020 Apr 30;2020:5903790. doi: 10.1155/2020/5903790. eCollection 2020. PMID: 32411447 <https://pubmed.ncbi.nlm.nih.gov/32411447/>

A patient-specific modelling method of blood circulatory system for the numerical simulation of enhanced external counterpulsation. Li B, Wang H, Li G, Liu J, Zhang Z, Gu K, Yang H, Qiao A, Du J, Liu Y. J Biomech. 2020 Oct 9;111:110002. doi: 10.1016/j.jbiomech.2020.110002. Epub 2020 Aug 20. PMID: 32898825 <https://pubmed.ncbi.nlm.nih.gov/32898825/>

Effect of External Counterpulsation on Running Performance and Perceived Recovery. Russell S, Evans AG, Jenkins DG, Kelly VG. Int J Sports Physiol Perform. 2020 Aug 1;15(7):920-926. doi: 10.1123/ijsspp.2019-0605. Epub 2020 Feb 27. PMID: 32106075 Clinical Trial. <https://pubmed.ncbi.nlm.nih.gov/32106075/>

External Counterpulsation Enhances Endothelial Metabolism and Neurogenic Activity in Ischemic Stroke: New Evidence by Analyzing Transcranial ...
L Xiong, D Liu, Y Wang, KSL Wong, Y Fan - Stroke. ;51:AWP186 2020
https://www.ahajournals.org/doi/abs/10.1161/str.51.suppl_1.WP186

The Hemodynamic Effect of Enhanced External Counterpulsation Treatment on Atherosclerotic Plaque in the Carotid Artery: A Framework of Patient-Specific Computational Fluid Dynamics Analysis J Du, G Wu, B Wu, C Liu, Z Mai, Y Liu, Y Wang, P Zhang, G. Wu, and J Liu. - Cardiology Research and Practice, Volume 2020 Article ID 5903790

<http://downloads.hindawi.com/journals/crp/2020/5903790.pdf>

Evaluation of the role of enhanced external counter pulsation in patients with chronic heart failure Sabapathy Kannappan and Thirumal Babu Kannappan: International Journal of Advances in Medicine pISSN 2349-3925 | eISSN 2349-3933
<https://www.ijmedicine.com/index.php/ijam/article/view/710/627>

The improvement of the shear stress and oscillatory shear index of coronary arteries during Enhanced External Counterpulsation in patients with coronary heart disease Xu L, Chen X, Cui M, Ren C, Yu H, Gao W, Li D, and Zhao W. March 2020 PLOS ONE <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0230144>

Expert consensus on the clinical application of enhanced external counterpulsation in elderly people Shen Lin, Wang Xiaoming, Wu Gui-fu Aging Medicine DOI: 10.1002/agm2.12097 <https://onlinelibrary.wiley.com/doi/full/10.1002/agm2.12097>

Effectiveness of Enhanced External Counterpulsation Treatment on Symptom Burden, Medication Profile, Physical Capacity, Cardiac Anxiety, and Health-Related ... Wu, L Desta, A Broström, J Mårtensson - The Journal of cardiovascular nursing, 2020
<https://www.ncbi.nlm.nih.gov/pubmed/31929322>

Enhanced external counterpulsation improves cardiac function in Beagles after cardiopulmonary resuscitation J Xiong, W Zhang, H Wei, X Li, G Dai, C Hu - Brazilian Journal of Medical and ..., 2020
http://www.scielo.br/scielo.php?pid=S0100-879X2020000100609&script=sci_arttext

External Counterpulsation Enhances Endothelial Metabolism and Neurogenic Activity in Ischemic Stroke: New Evidence by Analyzing Transcranial ... L Xiong, D Liu, Y Wang, KSL Wong, Y Fan - Stroke, 2020
https://www.ahajournals.org/doi/abs/10.1161/str.51.suppl_1.WP186

Enhanced External Counterpulsation Efficacy on Exercise Endurance in COPD Patients and Healthy Subjects: A Pilot Randomized Clinical Trial Zhao M, Huang Y, Li L, Zhou L, Wu Z, Liu Y, Zhang H, Hu C – International Journal of Chronic Obstructive Pulmonary Disease 2019:14 1-7, <https://www.dovepress.com/enhanced-external-counterpulsation-efficacy-on-exercise-endurance-in-c-peer-reviewed-fulltext-article-COPD>

Effect of External Counterpulsation on Running Performance and Perceived Recovery Suzanna Russell, Angus G. Evans, David G. Jenkins and Vincent G. Kelly International Journal of Sports Physiology and Performance
DOI: <https://doi.org/10.1123/ijspp.2019-0605>

Effectiveness of enhanced external counter pulsation on clinical profile and health-related quality of life in patients with coronary heart disease: a systematic review Vikram Singh, Girija Kumari^{1, 3}, Bimal Chhajjer², Ashok Kumar Jhingan³, and Saurabh Dahiya Via Medical. *Acta Angiologica*, 2018 *Acta Angiol* Vol. 24, No. 4 pp. 105–122
Doi:10.5603/AA.2018.0021 Copyright © 2018 Via Medica ISSN 1234–950X
www.journals.viamedica.pl/acta_angiologica ...

Enhanced external counterpulsation (ECCP) in rehabilitation of erectile dysfunctions: A narrative literature review. S.A. Raeis-Sadat, F. Allameh, A. Javaid *Annals of Physical and Rehabilitative Medicine* May 2018, <http://doi/10.1016/j.rehab.2018.05.906>

Effects of Enhanced External Counterpulsation on Heart Rate Recovery in Patients with Coronary Artery Disease. Akram Sardari, Sayed Kianoosh Hosseini, Ali Borzorgi, Masoumeh Lotfi-Tokaldeny, Hakimeh Sadeghian, Mostafa Nejelian *The Journal of Tehran University Heart Center* pISSN: 1735-8620, eISSN: 2008-2371 <http://jthc.tums.ac.ir/index.php/jthc/article/view/601>

A Comparative Assessment to Evaluate Enhanced External Counter Pulsation Effect on Physical Profile and Quality of Life in Diabetic and Nondiabetic Coronary Heart Disease Patients. Vikram Singh, Girija Kumari, Bimal Chhajjer, Ashok Kumar Jhingan, Saurabh Dahiya *Journal of Applied Pharmaceutical Science* Vol 8(06), pp113-123, June 2018
http://japsonline.com/admin/php/uploads/2657_pdf.pdf

External counterpulsation for the treatment of patients with refractory angina. Rovshan Huseyn Alakbarov, Tofiq Shahmur Jahangirov, Orazbek Sakhov, Sholpan Zhangelova. *Journal of Clinical Medicine of Kazakhstan*, Rovshan Huseyn DOI 10.23950/1812-2892-JCMK-00576 http://clinmedkaz.org/ozet.php?makale_id=576&dil=en

The numerical study on specialized treatment strategies of enhanced external counterpulsation for cardiovascular and cerebrovascular disease Bao Li, Sihan Chen, Xingming Qi, Wenxin Wang, Boyan Mao, Jianhang Du, Xiaoling Li, Youjun Liu Medical & Biological Engineering & Computing, May 2018 <https://doi.org/10.1007/s11517-018-1834-z>

The effect of EECP on functional exercise capacity and symptom burden in refractory angina Noman Ali, Haqeel A Jamil, Mohammad Waleed, Osama Raheem, Peysh Patel, Paul Sainsbury, Christopher Morley April 2018 doi:[10.5837/bjc.2018.011](https://doi.org/10.5837/bjc.2018.011)

Evaluation of the role of enhanced external counter pulsation in patients with chronic heart failure Sabapathy Kannappan*, Thirumal Babu Kannappan - International Journal of Advances in Medicine Aug 2017 DOI: <http://dx.doi.org/10.18203/2349-3933.ijam20173081>

The Enhanced External Counterpulsation as a Method of Non-Invasive Auxilliary Blood Circulation Used for the Combined Rehabilitative Treatment of the Patients Surviving after Ischemic Stroke (Review) MA Eneeva, EV Kostenkov, AN Razumov, LV Petrovq, SN Bobyрева, QM Nesuk Journal Kurortolog

External Counterpulsation Increases Beat-to-Beat Heart Rate Variability in Patients with Ischemic Stroke Li Xiong, Ge Tian, Li Wang, Wenhua Lin, Xiangyan Chen, Thomas Wai Hong Leung, Yannie Oi Yan Soo, Lawrence Ka Sing Wong, Department of Medicine and Therapeutics, The Chinese University of Hong Kong, Hong Kong, China - Journal of Stroke & Cardiovascular Diseases April 2017 Vol 26 Iss 4 doi: <http://dx.doi.org/10.1016/j.jstrokecerebrovasdis.2017.03.007>

Effects of external counterpulsation therapy on acute recovery in elite Australian rugby league players L. Roberts, L. James, J. Caia, B. Wellington, T. Scott, S. Halston, V. Kelly - Journal of Science & Medicine in Sport [https://www.jsams.org/article/S1440-2440\(17\)30045-2/pdf](https://www.jsams.org/article/S1440-2440(17)30045-2/pdf)

Effects of enhanced external counterpulsation on skeletal muscle gene expression in patients with severe heart failure. M. Melin, A. Montelius, L. Ryden, A Gonnon, I. Hagerman, E. Rullman Clin. Physiol Funct Imaging (2016) doi: 10.1111.cpf.12392

Effect of Enhanced External Counter Pulsation Treatment on Aortic Blood Pressure, Arterial Stiffness and Ejection Fraction in Patients with Coronary Artery Disease. Ramasamy Subramanian, Arumugam Chandrakasup, Pradeep G Nayar DOI Journal of Clinical and Diagnostic Research, 2016 Oct. Vol. 10(10) DOI:10.7860/CDR/2016/23122.8743

Alternative Therapy for Medically Refractory Angina: Enhanced External Counterpulsation and Transmyocardial Laser Revascularization. Soran O. Heart Fail Clin. 2016 Jan;12(1):107-16

Enhanced External Counterpulsation Therapy: Past, Present, and the Future. A Raza, K Steinberg, J Tartaglia, WH Frishman... - Cardiology in Review, 2016

Enhanced External Counterpulsation Can Improve Neutrophil to Lymphocyte Ration in Patients with Chronic Heart Failure. M. Taban Sadeghi, N. Aslanabadi, SK Shakouri, SA Naseri Alavi. Austin Emergency Medicine Vol 6 Iss 2. August 8, 2016.

Adaptation of external counterpulsation based on individual shear rate therapy improves endothelial function and claudication distance in peripheral artery disease EE Buschmann, M Brix, L Li, J Doreen, A Zietzer, M Li... - VASA. Zeitschrift für ..., 2016

Enhanced external counterpulsation (EECP) decreases advanced glycation end products and proinflammatory cytokines in patients with non-insulin-dependent type II diabetes mellitus for up to 6 months following treatment. Sardina PD, Martin JS, Dzieza WK, Braith RW. Acta Diabetol. 2016 Jun 9.

Enhanced external counterpulsation (EECP) improves biomarkers of glycemic control in patients with non-insulin-dependent type II diabetes mellitus for up to 3 months following treatment. Sardina PD, Martin JS, Avery JC, Braith RW. Acta Diabetol. 2016 May 14

Does Enhanced External Counterpulsation (EECP) Significantly Affect Myocardial Perfusion?: A Systematic Review &

Meta-Analysis. Qin X, Deng Y, Wu D, Yu L, Huang R. PLoS One. 2016 Apr 5;11(4):e0151822. doi: 0.1371/journal.pone.0151822. eCollection 2016.

Increases in Cardiac Output and Oxygen Consumption During Enhanced External Counterpulsation. Ahlbom M, Hagerman I, Ståhlberg M, Manouras A, Förstedt G, Wu E, Lund LH. Heart Lung Circ. 2016 May 18. pii: S1443-9506(16)30196-2. doi: 10.1016/j.hlc.2016.04.013

The Enhanced External Counterpulsation as a Method of Non-Invasive Auxiliary Blood Circulation Used for the Combined Rehabilitative Treatment of the Patients Surviving after Ischemic Stroke (Review) M.A. Eneeva, E.V.Kostenko, A.N.Razumov, L.V.Petrova, S.N. Bobyрева, O.M.Nesul Vopr Kurortol Fizioter Lech Fiz Kult. 2016 Jan-Feb;93(1):4-1

Enhanced External Counterpulsation Treatment May Intervene The Advanced Atherosclerotic Plaque Progression by Inducing The Variations of Mechanical Factors: A 3D FSI Study Based on in vivo Animal Experiment. Du J, Wang L. Mol Cell Biomech. 2015 Dec;12(4):249-63

Impact of Enhanced External Counterpulsation on Heart Failure Rehospitalization in Patients With Ischemic Cardiomyopathy

Kristen M. Tecson, PhD, Marc A. Silver, MD, Sonja D. Brune, CNS, Clay Cauthen, MD, Michael D. Kwan, MD, Jeffrey M. Schussler, MD, Anupama Vasudevan, PhD, James A. Watts, MD, Peter A. McCullough, MD, MPH
DOI: <http://dx.doi.org/10.1016/j.amjcard.2015.12.024>

The Effect of Enhanced External Counterpulsation Therapy and Improvement of Functional Capacity in Chronic Heart Failure patients: a Randomized Clinical Trial. Acta Med Indones. 2015 Oct;47(4):275-82.

Rampengan SH, Prihartono J, Siagian M, Immanuel S.

Enhanced External Counterpulsation Is an Effective Treatment for Depression in Patients With Refractory Angina Pectoris. Prim Care Companion CNS Disord. 2015 Aug 20;17(4).May O, Sjøgaard HJ.

Efficacy of Enhanced External Counterpulsation in Patients With Chronic Refractory Angina on Canadian Cardiovascular Society (CCS) Angina Class: An Updated Meta-Analysis. Medicine (Baltimore). 2015

Nov;94(47)

Zhang C, Liu X, Wang X, Wang Q, Zhang Y, Ge Z.

The enhanced external counterpulsation as a method of non-invasive auxiliary blood circulation used for the combined rehabilitative treatment of the patients surviving after ischemic stroke (a review).

Eneeva MA, Kostenko EV, Razumov AN, Petrova LV, Bobyрева SN, Nesuk OM. Vopr Kurortol Fizioter Lech Fiz Kult. 2015 May-Jun;92(3):45-52

Enhanced External Counterpulsation Is Cost-Effective in Reducing Hospital Costs in Refractory Angina Patients. Clin Cardiol. 2015 Jun;38(6):344-9. Lawson WE, Hui JC, Kennard ED, Linnemeier G; IEPR-II

Investigators.

Effect of Enhanced External Counterpulsation and Cardiac Rehabilitation on Quality of Life, Plasma Nitric Oxide, Endothelin 1 and High Sensitive CRP in Patients With Coronary Artery Disease: A Pilot Study. Ann

Rehabil Med. 2015 Apr;39(2):191-8 Shakouri SK, Razavi Z, Eslamian F, Sadeghi-Bazargani H, Ghaffari S, Babaei-Ghazani A.

The combined application of enhanced external counterpulsation for the rehabilitation of the patients presenting with coronary heart disease. Vopr Kurortol Fizioter Lech Fiz Kult. 2014 Nov-Dec;(6):13-5.

Kniazeva TA, Nikitin MV, Otto MP, Trukhacheva NV, Cherkashina IV.

Enhanced external counterpulsation reduces indices of central blood pressure and myocardial oxygen demand in patients with left ventricular dysfunction.

Clin. Exp. Pharmacol. Physiol.

Clin Exp Pharmacol Physiol 2015 Apr;42(4):315-20

Darren T Beck, Darren P Casey, Jeffrey S Martin, Paloma D Sardina, Randy W Braith

Enhanced external counterpulsation - effect on angina pectoris, QoL and exercise capacity after 1 year.

Scand Cardiovasc J. 2015 Feb;49(1):1-6.. May O, Lynggaard V, Mortensen JC, Malczynski J.

The combined application of enhanced external counterpulsation for the rehabilitation of the patients presenting with coronary heart disease.

Vopr Kurortol Fizioter Lech Fiz Kult

Vopr Kurortol Fizioter Lech Fiz Kult 2014 Nov-Dec(6):13-5

T A Kniazeva, M V Nikitin, M P Otto, N V Trukhacheva, I V Cherkashina

Enhanced external counterpulsation - Effect on angina pectoris, QoL and exercise capacity after 1 year.

Scand. Cardiovasc. J.

Scand Cardiovasc J 2015 Feb 22;49(1):1-6. Epub 2015 Jan 22.

Ole May, Vibeke Lynggaard, Jesper C A Mortensen, Jerzy Malczynski

Effect of enhanced extracorporeal counterpulsation in patients with non-arteritic anterior ischaemic optic neuropathy.

Graefes Arch. Clin. Exp. Ophthalmol.

Graefes Arch Clin Exp Ophthalmol 2015 Jan 10;253(1):127-33. Epub 2014 Oct 10.

Wenhui Zhu, Ruiduan Liao, Yongchong Chen, Li Liu, Yan Zhang

Enhanced external counterpulsation improves endothelial function and exercise capacity in patients with ischaemic left ventricular dysfunction.

Clin. Exp. Pharmacol. Physiol.

Clin Exp Pharmacol Physiol 2014 Sep;41(9):628-36

Darren T Beck, Jeffrey S Martin, Darren P Casey, Joseph C Avery, Paloma D Sardina, Randy W Braith

Alternative therapy for medically refractory angina: enhanced external counterpulsation and transmyocardial laser revascularization.

Cardiol Clin 2014 Aug;32(3):429-38

Ozlem Soran

The immediate and one-year outcomes of dialysis patients with refractory angina treated by enhanced external counterpulsation.

Clin. Nephrol.

Clin Nephrol 2014 Jul;82(1):34-40

Chung-Kuan Wu, Huei-Fong Hung, Jyh-Gang Leu, Der-Cherng Tarng, Ming-Hsien Tsai, Shou-Shan Chiang

Peripheral resistance artery blood flow in subjects with abnormal glucose tolerance is improved following enhanced external counterpulsation therapy.

Appl Physiol Nutr Metab

Appl Physiol Nutr Metab 2014 May 19;39(5):596-9. Epub 2013 Dec 19.

Jeffrey S Martin, Darren T Beck, Randy W Braith

Enhanced external counterpulsation inhibits endothelial apoptosis via modulation of BIRC2 and Apaf-1 genes in porcine hypercholesterolemia.

Int. J. Cardiol.

Int J Cardiol 2014 Feb 23;171(2):161-8. Epub 2013 Nov 23.

Yan Xiong, Yu-Feng Ren, Jia Xu, Da-Ya Yang, Xiao-Hong He, Jing-Yun Luo, Jamal S Rana, Yan Zhang, Zhen-Sheng Zheng, Dong-Hong Liu, Gui-Fu Wu

Relation between N-terminal pro-brain natriuretic peptide levels and response to enhanced external counterpulsation in chronic angina pectoris.

Coron. Artery Dis.

Coron Artery Dis 2014 Jan;25(1):45-51

Anders Sahlén, Eline Wu, Andreas Rück, Inger Hagerman, Gunilla Förstedt, Christer Sylvén, Margareta Berglund, Tomas Jernberg

Effect of Enhanced External Counterpulsation (EECP) on Exercise Time Duration and Functional Capacity in Patients with Refractory Angina Pectoris.

J Tehran Heart Cent

J Tehran Heart Cent 2014 Jan;9(1):33-7

Ali Bozorgi, Entezar Mehrabi Nasab, Akram Sardari, Mostafa Nejatian, Shaghayegh Nasirpour, Sakineh Sadeghi

Increasing pressure of external counterpulsation augments blood pressure but not cerebral blood flow velocity in ischemic stroke.

Wenhua Lin, Li Xiong, Jinghao Han, Howan Leung, Thomas Leung, Yannie Soo, Xiangyan Chen, Ka Sing Lawrence Wong.

Journal of Clinical Neuroscience, Available online 8 December 2013.

Hemodynamic effect of external counterpulsation is a different measure of impaired cerebral autoregulation from vasoreactivity to breath-holding.

W. Lin, L. Xiong, J. Han, T. Leung, H. Leung, X. Chen, K. S. L. Wong.

European Journal of Neurology 2013 first published online: 7 DEC 2013 , DOI: 10.1111/ene.12314.

Enhanced External Counterpulsation inhibits endothelial apoptosis via modulation of BIRC2 and Apaf-1 genes in porcine hypercholesterolemia.

Yan Xiong, Yu-feng Ren, Jia Xu, Da-ya Yang, Xiao-hong He, Jing-yun Luo, Jamal S. Rana, Yan Zhang, Zhen-sheng Zheng, Dong-hong Liu, Gui-fu Wu

International Journal of Cardiology, Available online 23 November 2013.

Relation between N-terminal pro-brain natriuretic peptide levels and response to enhanced external counterpulsation in chronic angina pectoris.

Sahlén A, Wu E, Rück A, Hagerman I, Förstedt G, Sylvén C, Berglund M, Jernberg T.

Coron Artery Dis. 2013 Nov 8.

Effect of enhanced external counterpulsation treatment on renal function in cardiac patients.

Prajej Ruangchanasetr, Nithi Mahanonda, Ongkarn Raungratanaamporn, Piyanuj Ruckpanich

Chagriya Kitiyakara, Amnart Chaiprasert, Surawat Adirekkiat, Dollapas Punpanich, Somlak Vanavanan,

Anchalee Chittamma, Thanom Supaporn

BMC Nephrology 2013, 14:193 doi:10.1186/1471-2369-14-193.

Longer treatment duration is associated with better functional outcome in counterpulsation-treated recent ischemic stroke patients.

Wen Hua Lin, Jinghao Han, Xiang-Yan Chen, Li Xiong, Ho wan Leung, W.H. Leung, Yannie Soo, Lawrence Wong.

BMJ Open, 2013 (to be published).

Enhanced External Counterpulsation Improves Peripheral Resistance Artery Blood Flow in Patients With Coronary Artery Disease.

Joseph C Avery, Darren T Beck, Darren P Casey, Paloma D Sardina, Randy W. Braith.

Applied Physiology, Nutrition, and Metabolism. Published on the web 11 October 2013.

The effectiveness of enhanced external counterpulsation (EECP) in patients suffering from chronic refractory angina previously treated with transmyocardial laser revascularisation.

Poay Huan Loh, Elizabeth Kennard, Christos V. Bourantas, Raj Chelliah, Paul Atkin, Jocelyn Cook, John G. Cleland, Andrew Michaels, John C.K. Hui for the International EECP Patient Registry (IEPR). International Journal of Cardiology xxx (2013) xxx–xxx (in press).

Enhanced external counterpulsation improves cerebral blood flow following cardiopulmonary resuscitation.

Rong Liu, Zi-Jing Liang, Xiao-Xing Liao, Chun-Lin Hu, Li Jiang, Gang Dai, Ying-Qing Li, Hong-Yan Wei, Gui-Fu Wu, Xin Li
American Journal of Emergency Medicine 2013 (in press)

Effect of enhanced external counterpulsation therapy on myeloperoxidase in lowering cardiovascular events of patients with chronic heart failure.

Starry H. Rampengan, Budhi Setianto, Jimmy Posangi, Suzanna Immanuel, Judo Prihartono, Minarma Siagian, Harmani Kalim, Sirowanto Inneke, Murdani Abdullah, Sarwono Waspadji. Med J Indones. 2013;22:152-60. doi: 10.13181/mji.v22.i3.584.

Effect of enhanced external counterpulsation depends on arterial compliance

Ashkan Eftekhari, Ole May
Acta Cardiol 2013;68(1):47-50.

The Safety and Efficacy of Enhanced External Counterpulsation as a Treatment for Angina in Patients with Aortic Stenosis.

Debra L Braverman, Len Braitman, Vincent M Fifeuredo.
Clin Cardiol 2013;36(2):82-87.

Clinical study in patients with ocular ischemic diseases treated with enhanced external counterpulsation combined with drugs. Yang Y, Zhang H, Yan Y, Gui Y. Mol Med Rep. 2013 Apr 26. doi: 10.3892/mmr.2013.1445.

Efficacy of Enhanced External Counterpulsation (EECP) in Nepalese chronic stable Angina patient: a single centre prospective study at Shahid Gangalal National Heart Center (SGNHC).

Adhikari CM, Prajapati D, Thapa S, KC MB.
Nepalese Heart Journal 2012 November; Vol.9, No. 1, , 20-24.

Improvement of angina, quality of life, and working capacity after enhanced external counterpulsation.

Jørgensen MT, May O. Ugeskr Laeger. 2013 Jan 14;175(3):114-116.

Predictors of good functional outcome in counterpulsation-treated recent ischaemic stroke patients.

Wenhua Lin, Jinghao Han, Xiangyan Chen, Li Xiong, Ho Wan Leung, Thomas W Leung, Yannie Soo, Lawrence Ka Sing Wong.
BMJ Open 2013;3: e002932. doi:10.1136/bmjopen-2013-002932

Enhanced external counterpulsation improves cerebral blood flow following cardiopulmonary resuscitation.

Rong Liu, Zi-Jing Liang, Xiao-Xing Liao, Chun-Lin Hu, Li Jiang, Gang Dai, Ying-Qing Li, Hong-Yan Wei, Gui-Fu Wu, Xin Li
American Journal of Emergency Medicine 2013 (in press)

Effect of enhanced external counterpulsation therapy on myeloperoxidase in lowering cardiovascular events of patients with chronic heart failure.

Starry H. Rampengan, Budhi Setianto, Jimmy Posangi, Suzanna Immanuel, Judo Prihartono, Minarma Siagian, Harmani Kalim, Sirowanto Inneke, Murdani Abdullah, Sarwono Waspadji. Med J Indones. 2013;22:152-60. doi: 10.13181/mji.v22.i3.584.

Effect of enhanced external counterpulsation depends on arterial compliance

Ashkan Eftekhari, Ole May
Acta Cardiol 2013;68(1):47-50.

The Safety and Efficacy of Enhanced External Counterpulsation as a Treatment for Angina in Patients with Aortic Stenosis.

Debra L Braverman, Len Braitman, Vincent M Fifeuredo. Clin Cardiol 2013;36(2):82-87.

Clinical study in patients with ocular ischemic diseases treated with enhanced external counterpulsation combined with drugs.

Yang Y, Zhang H, Yan Y, Gui Y.
Mol Med Rep. 2013 Apr 26. doi: 10.3892/mmr.2013.1445.

Efficacy of Enhanced External Counterpulsation (EECP) in Nepalese chronic stable Angina patient: a single centre prospective study at Shahid Gangalal National Heart Center (SGNHC).

Adhikari CM, Prajapati D, Thapa S, KC MB.
Nepalese Heart Journal 2012 November; Vol.9, No. 1, , 20-24.

Improvement of angina, quality of life, and working capacity after enhanced external counterpulsation.

Jørgensen MT, May O.
Ugeskr Laeger. 2013 Jan 14;175(3):114-116.

Predictors of good functional outcome in counterpulsation-treated recent ischaemic stroke patients.

Wenhua Lin, Jinghao Han, Xiangyan Chen, Li Xiong, Ho Wan Leung, Thomas W Leung, Yannie Soo, Lawrence Ka Sing Wong.
BMJ Open 2013;3: e002932. doi:10.1136/bmjopen-2013-002932

Early Enhanced External Counter Pulsation Improves Neurological Recovery After the Return of Spontaneous Circulation in a Mongrel Dog Cardiac Arrest Model.

Hu, Chun-Lin, Liu, Rong, Liao, Xiao-Xing, Wei, Hong-Yan, Li, Xin, Zhan, Hong, Jing, Xiao-Li, Xiong, Yan, Huang, Guo-Qing, Wu, Gui-Fu. Critical Care Medicine: June 2013 - Volume 41 - Issue 6 - p e62–e73. doi: 10.1097/CCM.0b013e318278b469

Enhanced external counterpulsation: A novel therapy for angina

Debra L Braverman
Complementary Therapies in Clinical Practice 2012;1-7

Treatment with enhanced external counterpulsation improves cognitive functions in chronic heart failure patients.

Güliz Kozdağ, Pervin İşeri, Gökçen Gökçe, Gökhan Ertaş, Fatih Aygün, Ayşe Kutlu, Kathy Hebert, Dilek Ural.
Türk Kardiyol Dern Arş - Arch Turk Soc Cardiol 2013;41(5):418-428 doi: 10.5543/tkda.2013.24366.

Are peripheral arterial changes during enhanced external counterpulsation necessary for and/or evidence of an adequate cardiovascular response?

Daniel Bia and Yanina Zo'calo.
Hypertension Research advance online publication, 24 January 2013; doi:10.1038/hr.2012.210.

The collateral circulation of the heart

Pascal Meier, Stephan H Schirmer, Alexandra J Lansky, Adam Timmis, Bertram Pitt, Christian Seiler.
BMC Medicine 2013, 11:143 doi:10.1186/1741-7015-11-143.

Therapeutic effects of Enhanced External Counter Pulsation (EECP) on clinical symptoms, echocardiographic measurements, perfusion scan parameters and exercise tolerance test in coronary artery disease patients with refractory angina.

Eslamian F, Aslanabadi N, Mahmoudian B, Shakouri SK.
Int J Med Sci Public Health. Online First: 24 Dec, 2012. doi:10.5455/ijmsph.2013.2.179-187 Int J Med Sci Public Health. 2013; 2(2): 179-187. doi: 10.5455/ijmsph.2013.2.179-187

Enhanced external counterpulsation in patients with refractory angina pectoris: a pilot study with six months follow-up regarding physical capacity and health-related quality of life.

Wu E, Mårtensson J, Broström A.
Eur J Cardiovasc Nurs. 2012 Dec 21. [Epub ahead of print]

Anti-inflammatory effects of enhanced external counterpulsation in subjects with abnormal glucose

tolerance.

Jeffrey S. Martin, Randy W. Braith. *Applied Physiology, Nutrition, and Metabolism*, 10.1139/h2012-112.
Published on the web 11 October 2012.

Enhanced external counterpulsation creates acute blood flow patterns responsible for improved flow-mediated dilation in humans.

Alvaro N Gurovich and Randy W Braith. *Hypertension Research* advance online publication, 18 October 2012; doi:10.1038/hr.2012.169

Cause or Effect of Arteriogenesis: Compositional Alterations of Microparticles from CAD Patients Undergoing External Counterpulsation Therapy.

Al Kaabi A, Traupe T, Stutz M, Buchs N, Heller M.
PLOS ONE 2012, 7(10): e46822. doi:10.1371/journal.pone.0046822

External Counterpulsation Augments Blood Pressure and Cerebral Flow Velocities in Ischemic Stroke Patients With Cerebral Intracranial Large Artery Occlusive Disease

Wenhua Lin, Li Xiong, Jinghao Han, Thomas Wai Hong Leung, Yannie Oi Yan Soo, Xiangyan Chen, Ka Sing Lawrence Wong. *Stroke*. 2012;43:00-00

Comparison of long term clinical outcomes, event free survival rates of patients undergoing enhanced external counterpulsation for coronary artery disease in the United States and Turkey

Ozlem Soran, Coskun Ikizler, Atilla Sengui, Bilal Cuglan, Elizabeth Kennard, Sheryl Kelsey
Turk Kardiyol Dem Ars - Arch Turk Soc Cardiol 2012;40(4):323-330

Vasculoprotective properties of enhanced external counterpulsation for coronary artery disease: Beyond the hemodynamics

Yang DY, Wu GF
International Journal of Cardiology; E pub ahead of print, published online 07 May 2012.

Enhanced External Counterpulsation for Ischemic Heart Disease: A Look Behind the Curtain

Randy W. Braith, Darren P. Casey, and Darren T. Beck
The American College of Sports Medicine Exercise and Sport Sciences Reviews 2012;40 (3):145-152.

Clinical Effects of Enhanced External Counterpulsation Treatment in Patients with Ischemic Heart Failure

Kozdağ G, Ertaş G, Aygün F, Emre E, Kırbaş A, Ural D, Soran O.
Anadolu Kardiyol Derg 2012 Mayıs 1; 12(3): Article in Press

The Effect of Enhanced External Counterpulsation on C-reactive protein and flow-mediated dilation in porcine model of hypercholesterolaemia

Yanqiu L, Yan X, Dongshong L, Chufan L, Yan Z, Wu G, Qiang X, Yugang D, Zhensheng Z.
Clinical Physiology and Functional Imaging. 2012; 32 (4): 262–267

Enhanced External Counterpulsation Has No Lasting Effect on Ambulatory Blood Pressure

Ole May, Wael Abdulla Mohammed Khair
Clin Cardiol 2012 DOI: 10.1002/cic.22045

The Immediate Hemodynamic Effects of Enhanced External Counterpulsation on the Left Ventricular Function

Eftekhari, A and May, O
Scandinavian Cardiovascular Journal, 2012; 46 (2): 81-86

The therapeutic effects of enhanced external counterpulsation on refractory angina in patients, unsuitable for invasive interventions

Aslan Abadi Naser, Salehi Rezvaneyeh, Alizadeh Azin, Eslamityan Fariba, Ahmadzadeh Pournaky Ahmad, Tsban Sadeghi Mohamad Reza
The J of Urmia University of Medical Sciences 2012;April-May, 23(1):7-14

Pulsatile venous waveform quality in Fontan circulation-clinical implications, venous assists options and the future Ergin Kocylidirim, Onur Dur, Ozlem Soran, Egemen Tuzun, Matthew W Miller, Gregory J Housler, Peter D Wearden, Theresa W Fossum, Victor O Morell, Kerem Pekkan

The Effects of Enhanced External Counterpulsation on Health-related Quality of Life in Patients with Angina Pectoris

Ziaeirad M, Ziaei GR, Sadeghi N, Motaghi M, Torkan B
Iranian Journal of Nursing and Midwifery Research 2012;17(1):1-7

Effect of Enhanced External Counterpulsation Treatment on mean Platelet Volume in Patients Affected by Ischemic Heart Failure

Ertas G, Kozdag G, Emre E, Akay Y, Ural D, Hebert, K
Blood Coagulation & Fibrinolysis. 2012;23(2):127-31. doi: 10.1097/MBC.0b013e32834ee144

Enhanced External Counterpulsation (EECP) Improves Peripheral Artery Function and Glucose Tolerance in Subjects with Abnormal Glucose Tolerance

Martin JS, Beck DT, Aranda Jr. JM, Braith RW
First published December 22, 2011;
doi:10.1152/jappphysiol.01336.2011 *J Appl Physiol* 2012;112: 868–876

Effect of enhanced external counterpulsation on C-reactive protein and interleukin-6 in patients with coronary heart disease

WEI Hai-zhu
Hainan, China Hainan Medical J. 2011; 22(3):56-57

Reduced peripheral vascular reactivity in refractory angina pectoris: Effect of Enhanced External Counterpulsation

Susanne M Bondesson, Marie-Louise Edvinsson, Thomas Pettersson, Lars Edvinsson
Journal of Geriatric Cardiology (2011) 8: 215–223

Microvascular response to metabolic and pressure challenge in the human coronary circulation

Stefano F. de Marchi, Steffen Gloekler, Stefano F. Rimoldi, Patrizia Rölli, Hélène Steck, and Christian Seiler *Am J Physiol Heart Circ Physiol* 301: H434–H441, 2011. First published May 13, 2011;
doi:10.1152/ajpheart.01283.2010

Hospital utilization and costs for spinal cord stimulation compared with enhanced external counterpulsation for refractory angina pectoris.

Bondesson, S. M., Jakobsson, U., Edvinsson, L. and Hallberg, I. R.
Journal of Evaluation in Clinical Practice. 2011 Epub 31 OCT 2011

Enhanced External Counterpulsation improves endothelial function, inflammatory markers and depression

Deepak Hooda, Ravindra Bhardwaj, Wissam Gharib, Bradford E. Warden, Robert Beto, Abnash C. Jain
ACC 60th Scientific Session 2011; *J Am Coll Cardiol* 57(14): E2011 Title: Best Fellows-In-Training Poster Awards

Effects of Enhanced External Counterpulsation on Arterial Stiffness and Myocardial Oxygen Demand in Patients With Chronic Angina Pectoris

Casey DP, Beck DT, Nichols WW, Conti CR, Choi CY, Khuddus MA, Braith RW
American Journal of Cardiology. 2011 May 15;107(10):1466-72. Epub 2011 Mar 17

Clinical Response of Enhanced External Counter Pulsation (EECP) Among Bangladeshi Ischemic Heart Disease Patients

Kmhs Sirajul Haque, Javed Iqbal, Mahmudur Rahman Siddiqui, Khondaker Syedus Salehin University Heart Journal. 2011 January Vol. 7, No. 1, 19-22

The Effects of Enhanced External Counterpulsation on Cardiac Electrophysiologic Properties of Patients with Ischemic Heart Disease and Refractory Angina at Function Class II-III

Fariborz Akbarzadeh, Yaghoub Salekzamani, Amir Shahram Beigzdeh
Journal of Cardiovascular and Thoracic Research 2011; 3 (2): 49- 51

Enhanced External Counter Pulsation (EECP) for Refractory Angina Pectoris (RAP); Results from a

first case series

Waqas Ahmed, Naveed Akhter, Ayesha Masood
J Pak Med Assoc. 2010, Vol. 60, No. 8 :692-694

Effects on blood pressure in patients with refractory angina pectoris after enhanced external counterpulsation

Bondesson S , Pettersson T, Ohlsson O ,Hallberg I, Wackenfors A, Edvinsson L
Blood Pressure. 2010; 19: 287–294

Enhanced External Counterpulsation - A Review

Sayami LA, Ullah M, Rahman MT, Rahman Z, Roy D, Majumder AAS
Cardiovascular Journal 2010;2(2):236-244

Does External Counterpulsation Augment Mean Cerebral Blood Flow in the Healthy Brain? Effects of External Counterpulsation on Middle Cerebral Artery Flow Velocity and Cerebrovascular Regulatory Response in Healthy Subjects

Jungehuelsing GJ, Liman TG, Brunecker P, Ebel A, Endres M, Buschmann I, Pagonas N, Buschmann, EE
on behalf of Arteriogenesis Network and the Center for Stroke Research Berlin
Cerebrovascular Diseases 2010;30:612-617

Enhanced External Counterpulsation Improves Peripheral Artery Flow-Mediated Dilation in Patients with Chronic Angina. A Randomized Sham-Controlled Study.

Braith RW, Conti CR, Nichols WW, Choi CY, Khuddus MA, Beck DT, Casey DP
Circulation 2010 [epub October 4, 2010]

Effect of Enhanced External Counterpulsation on Circulating CD34+ Progenitor Cell Subsets.

Kiernan TJ, Boilson BA, Tesmer L, Harbuzariu A, Simari RD, Barsness GW.
Int J Cardiol. 2010 Sep 13. [Epub ahead of print]

Acute Hemodynamic Effects of Enhanced External Counterpulsation

Reddy BT, Michaels AD
Journal of Geriatric Cardiology June 2010 Vol 7, No. 2, 67-73

The Four Stages of Development: A Historical Perspective of External Counterpulsation

Hui JCK, Zheng ZS
Journal of Geriatric Cardiology June 2010 Vol 7, No. 2, 74-78

EECP in the Treatment of Endothelial Dysfunction: Preventing Progression of Cardiovascular Disease

Hui JCK, Lawson WE, Barsness GW
Journal of Geriatric Cardiology June 2010 Vol 7, No. 2, 79-87

Role of External Counterpulsation in the Treatment of Ischemic Stroke

Han JH, Leung WH, Wong KS
Journal of Geriatric Cardiology June 2010 Vol 7, No. 2, 88-92

Enhanced External Counter Pulsation for Refractory Angina Pectoris; Results from a first case series

Ahmed, W, Akhter N, Masood, A
Journal of Pakistan Medical Association 2010: 60:8; 692-694

Impact of Enhanced External Counterpulsation on Canadian Cardiovascular Society Angina Class in Patients with Chronic Stable Angina: A Meta-analysis

Shah SA, Shapiro RJ, Mehta R, Snyder
JA Pharmacotherapy 2010: 30: 7; 639-645

Enhanced External Counterpulsation (EECP) Therapy: Current Evidence For Clinical Practice And Who Will Benefit?

Prasad GN, Ramasamy S, M.Thomas JM, Nayar PG, Sankar MN, Sivakadaksham N, Cherian KM
Indian Heart J. 2010; 62:296-302

Prinzmetal's Variant Angina is Effectively Treated with Enhanced External Counterpulsation

Tarpgaard Jorgensen M, Gerdes C, May

Enhanced External Counterpulsation: Mechanisms of Action and Clinical Applications

Kitsou V, Xanthos T, Roberts R, Karlis G, Padadimitriou L
Acta Cardiology 2010;65(2):239-247

Enhanced External Counterpulsation Attenuates Atherosclerosis Progression Through Modulation of Proinflammatory Signal Pathway

Zhang Y, He X, Liu D, Wu G, Chen X, Ma H, Du Z, Dong Y, Jin Y, He W, Wang K, Lawson WE, Hui JCK, and Zheng Z
Arterioscler Thromb Vasc Biol 2010;30:773-780; originally published online Feb 11,2010

Enhanced External Counterpulsation is a regenerative therapy.

Jewell CW, Houck PD, Watson LE, Dostal DE, Dehmer GJ. *Frontiers in Bioscience (Elite Ed)*. 2010 Jan 1;2:111-21.

Enhanced External Counterpulsation and Traction Therapy Ameliorates Rotational Vertebral Artery Flow Insufficiency Resulting from Cervical Spondylosis

Wang X, Guo F, Wang H, Xie J, Wang S, Zhao Y, Li X
Spine 2010; 35(15):1415-1422

Coronary Collateral Growth by External Counterpulsation: A Randomized Controlled Trial

Gloekler S, Meier P, de Marchi S, Rutz T, Traupe T, Rimoldi S, Wustmann K, Steck H, Cook S, Vogel R, Togni M, Seiler C
Heart 2010;96:202-207 [e-Pub November 5, 2009]

Effect of Enhanced External Counterpulsation on Plasma Level of Nitric Oxide and Vascular Endothelial Growth Factor

Pourmoghadas M, Nourmohamamadi H, Tabesh F, Haghjoo S, Tabesh E
ARYA Atherosclerosis Journal 2009, 5(2):59-63

The efficacy of external counterpulsation depending on severity of coronary artery lesion.

Malakhov VV, Sergienko IV, Gabrusenko SA, Bugrii ME. *Kardiologiia*. 2009;49(10):4-8.

The Efficacy and Safety of Enhanced External Counterpulsation in Patients with Peripheral Arterial Disease.

Thakkar BV, Hirsch AT, Satran D, Bart BA, Barsness G, McCullough PA, Kennard E, Kelsey S, Henry TD. *Vascular Medicine*. 2009 Oct 19.

Improvement of Fractional Flow Reserve and Collateral Flow by Treatment with External Counterpulsation (Art.Net.-2 Trial)

Buschmann EE, Utz W, Pagonas N, Schulz-Menger J, Busjahn A, Monti J, Maerz W, le Noble F, Thierfelder L, Dietz R, Klauss V, Gross M, Buschmann IR; on behalf of the Arteriogenesis Network (Art. Net.). *European Journal of Clinical Investigation*. 2009 Oct;39(10):866-75. [Epub ahead of print July 2].

Assessment of the Effect of External Counterpulsation on Myocardial Adaptive Arteriogenesis by Invasive Functional Measurements - Design of the Arteriogenesis Network Trial 2

Pagonas N, Utz W, Schulz-Menger J, Busjahn A, Monti J, Thierfelder L, Dietz R, Klauss V, Gross M, Buschmann IR, Buschmann EE; on behalf of the Arteriogenesis Network (Art.Net.). *International Journal of Cardiology*. 2009 Jun 16. [Epub ahead of print].

Enhanced External Counterpulsation Promotes Growth Cytokines-mediated Myocardial Angiogenesis in a Porcine Model of Hypercholesterolemia

Luo JY, Wu GF, Xiong Y, Chen GW, Xie Q, Yang DY, He XH, Zhang Y, Liu DH, Wang KJ, Ma H, Zheng ZS, DU ZM.
Chinese Medical Journal (Engl). 2009 May 20;122(10):1188-1194.

Enhanced External Counterpulsation for the Treatment of Stable Angina and Heart Failure: A

Systematic Review and Economic Analysis

McKenna C, McDaid C, Suekarran S, Hawkins N, Claxton K, Light K, Chester M, Cleland J, Woolacott N, Sculpher M.

Health Technology Assessment. 2009 Apr;13(24):iii-iv, ix-xi, 1-90.

Effect of Enhanced External Counterpulsation on Clinical Symptoms, Quality of Life, 6-Minute Walking Distance, and Echocardiographic Measurements of Left Ventricular Systolic and Diastolic Function After 35 Days of Treatment and at 1-Year Follow Up in 47 Patients With Chronic Refractory Angina Pectoris

Kumar A, Aronow WS, Vadnerkar A, Sidhu P, Mittal S, Kasliwal RR, Trehan N.

American Journal of Therapeutics. 2009 Mar/Apr;16(2):116-118.

Enhanced External Counterpulsation: An Innovative Physical Therapy for Refractory Angina

Braverman DL.

Physical Medicine & Rehabilitation. 2009 Mar;1(3):268-276.

EECP: A Non-invasive Therapy for Refractory Angina

Beaini Y, Morley C.

Practitioner. 2009 Feb;253(1715):27-31

Invasive Left Ventricular Energetics During Enhanced External Counterpulsation

Michaels AD, Tacy T, Teitel D, Shapiro M, Grossman W.

American Journal of Therapeutics. 2009;16:239-246. Jan 13. [Epub ahead of print].

Treatment Options for Refractory Angina Pectoris: Enhanced External Counterpulsation Therapy

Soran O.

Current Treatment Options Cardiovascular Medicine. 2009 Feb;11(1):54-60.

Evaluation of Left Ventricular Systolic and Diastolic Regional Function After Enhanced External Counter Pulsation Therapy Using Strain Rate Imaging

Esmaeilzadeh M, Khaledifar A, Maleki M, Sadeghpour A, Samiei N, Moladoust H, Noohi F, Haghighi ZO, Mohebbi A.

European Journal of Echocardiography. 2009 Jan;10(1):120-126. Epub 2008 Jun 21

Perfusion Augmentation in Acute Stroke using Mechanical Counter-Pulsation Phase IIa: Effect of External Counterpulsation on Middle Cerebral Artery Mean Flow Velocity in Five Healthy Subjects

Alexandrov AW, Ribo M, Wong KS, Sugg RM, Garami, Z, Jesurum JT, Montgomery B, Alexandrov AV. *Stroke*, 2008;39;2760-2764. [Epub July 24, 2008]

Enhanced External Counterpulsation in Treatment of Refractory Angina Pectoris: Two Year Outcome and Baseline Factors Associated with Treatment Failure

Erdling A, Bondesson S, Petterson T, Edvinsson L.

BMC Cardiovasc Disord. 2008 Dec 18;8(1):39. [Epub ahead of print]

Enhanced External Counterpulsation Improves Systolic Blood Pressure in Patients with Refractory Angina

Campbell AR, Satran D, Zenovich AG, Campbell KM, Espel JC, Arndt TL, Poulouse AK, Boisjolie CR, Juusola K, Bart BA, Henry TD.

American Heart Journal. 2008 Dec;156(6):1217-1222. Epub 2008 Oct 5.

Comparison of Patients Undergoing Enhanced External Counterpulsation and Spinal Cord Stimulation for Refractory Angina Pectoris

Bondesson S, Pettersson T, Erdling A, Hallberg IR, Wackenfors A, Edvinsson L.

Coronary Artery Disease. 2008 Dec;19(8):627-634

Passive Tobacco Exposure May Impair Symptomatic Improvement in Patients with Chronic Angina Undergoing Enhanced External Counterpulsation

Efstratiadis S, Kennard ED, Kelsey SF, Michaels AD; International EECP Patient Registry-2 Investigators.

BMC Cardiovascular Disorders. 2008 Sep;8(23).

Long-term Effect of Enhanced External Counterpulsation on Endothelial Function in the Patients with Intractable Angina

Hashemi M, Hoseinbalam M, Khazaei M.

Heart Lung Circulation. 2008 Aug 13. [Epub ahead of print].

Is Counterpulsation a Potential Therapy for Ischemic Stroke?

Han JH, Wong KS.

Cerebrovascular Disease. 2008;26:97-105 epub June 17, 2008

Enhanced External Counterpulsation in the Treatment of Chronic Refractory Angina: A Long-term Follow-up Outcome from the International Enhanced External Counterpulsation Patient Registry

Loh PH, Cleland JG, Louis AA, Kennard ED, Cook JF, Caplin JL, Barsness GW, Lawson WE, Soran OZ, Michaels AD.

Clinical Cardiology. 2008 Apr 10;31(4):159-164.

Preliminary Findings of External Counterpulsation for Ischemic Stroke with Large Artery Occlusive Disease

Han JH, Leung TW, Lam WW, Soo YO, Alexandrov AW, Mok V, Leung YV, Lo R, Wong KS.

Stroke. April 2008;39:1340-1343.

The Semantic Extension and Storage of EECF Hemodynamic Waveforms Based on DICOM Standard

Xie S, Yu D, Wei X, Wang K.

Medical Biological Engineering and Computing. 2008 Apr;46(4):391-397. Epub 2008 Feb 12.

Effect of Enhanced External Counterpulsation on Inflammatory Cytokines and Adhesion Molecules in Patients with Angina Pectoris and Angiographic Coronary Artery Disease

Casey DP, Conti CR, Nichols WW, Choi CY, Khuddus MA, Braith RW.

American Journal of Cardiology. 2008 Feb 1;101(3):300-302. Epub 2007 Dec 11.

Effects of Enhanced External Counterpulsation (EECP) on Myocardial Perfusion

Arora RR, Bergmann S.

American Journal of Therapeutics. 2007 Nov-Dec;14(6):519-523.

Echocardiographic Characteristics Including Tissue Doppler Imaging After Enhanced External Counterpulsation Therapy

Estahbanaty G, Samiei N, Maleki M, Noohi F, Mohebi A, Ojaghi Z, Esmailzadeh M, Sadeghpour A, Soran O.

The American Heart Hospital Journal. 2007 Fall;5(4):241-246.

Enhanced External Counterpulsation and Future Directions: Step Beyond Medical Management for Patients with Angina and Heart Failure

Manchanda A, Soran O.

Journal of the American College of Cardiology. 2007 Oct 16;50(16):1523-1531. Epub 2007 Oct 1.

An Analysis of the Efficacy and Safety of Enhanced External Counterpulsation at West Virginia University Hospitals

Sajja V, Dod H, Beto R, Jain AC, Hobbs GR, Finkel MS.

The West Virginia Medical Journal. 2007 May-Jun;103(3):10-12

Impact of external counterpulsation treatment on emergency department visits and hospitalizations in refractory angina patients with left ventricular dysfunction.

Soran O, Kennard ED, Bart BA, Kelsey SF; IEPR

Investigators Congest Heart Fail. 2007 Jan-Feb;13(1):36-40. Erratum in: Congest Heart Fail. 2007 Mar-

Apr;13(2):124

Residual High-Grade Angina After Enhanced External Counterpulsation Therapy

McCullough PA, Henry TD, Kennard ED, Kelsey SF, Michaels AD; IEPR Investigators.

Cardiovascular Revascularization Medicine: Including Molecular Interventions. 2007 Jul-Sep;8(3):161-165.

Effects of Enhanced External Counterpulsation on Carotid Circulation in Patients with Coronary Artery Disease

Levenson J, Simon A, Megnien JL, Chironi G, Garipey J, Pernollet MG, Craiem D, Iliou MC.

Cardiology. 2007;108(2):104-110. Epub 2006 Sep 29.

The Role of Enhanced External Counterpulsation in the Treatment of Angina and Heart Failure

Arora R.

Canadian Journal of Cardiology. 2007 Aug;23(10):779-781.

Enhanced External Counterpulsation Inhibits Intimal Hyperplasia by Modifying Shear Stress Responsive Gene Expression in Hypercholesterolemic Pigs

Zhang Y, He X, Chen X, Ma H, Liu D, Luo J, Du Z, Jin Y, Xiong Y, He J, Fang D, Wang K, Lawson WE, Hui JC, Zheng Z, Wu G.

Circulation. 2007 Jul 31;116(5):526-534. Epub 2007 Jul 9.

Enhanced External Counterpulsation In Patients With Coronary Artery Disease-Associated Erectile Dysfunction. Part II: Impact Of Disease Duration And Treatment Courses

El-Sakka AI, Morsy AM, Fagih BI.

The Journal of Sexual Medicine. 2007 Jul 18;4(5):448–1453. [Epub ahead of print].

Effects of Enhanced External Counterpulsation on Anginal Symptoms and Improvements in Objective Measures of Myocardial Ischaemia

Yavari M, Montazeri HR.

Cardiovascular Journal of South Africa. 2007 May-Jun;18(3):154-156.

The Effects of Enhanced External Counterpulsation on Time- and Frequency-Domain Measures of Heart Rate Variability

Michaels AD, Bart BA, Pinto T, Lafferty J, Fung G, Kennard ED.

Journal of Electrocardiology. 2007 Nov-Dec;40(6):515-521. Epub 2007 May 29.

Impact of Enhanced External Counterpulsation on Peripheral Circulation

Werner D, Michalk F, Hinz B, Werner U, Voigt JU, Daniel WG

Angiology. 2007 Apr-May;58(2):185-190.

Effect of Enhanced External Counterpulsation on Medically Refractory Angina Patients with Erectile Dysfunction Lawson WE, Hui JC, Kennard ED, Soran O, McCullough PA, Kelsey SF; for the IEPR Investigators.

International Journal of Clinical Practice. 2007 May;61(5):757-762.

Portable Enhanced External Counterpulsation for Acute Coronary Syndrome and Cardiogenic Shock: A Pilot Study

Cohen J, Grossman W, Michaels AD. *Clinical*

Cardiology. 2007 May;30(5):223-228.

Enhanced External Counterpulsation in Patients with Coronary Artery Disease-Associated Erectile Dysfunction. Part I: Effects of Risk Factors

El-Sakka A, Morsy A, Fagih B. *Journal of Sexual Medicine*. 2007 May;4(3):771-779. Epub 2007 Apr 13.

Impact of External Counterpulsation Treatment on Emergency Department Visits and Hospitalizations in Refractory Angina Patients with Left Ventricular Dysfunction

Soran O, Kennard ED, Bart BA, Kelsey SF.

Congestive Heart Failure. 2007 Jan-Feb;13(1):36-40

Enhanced External Counterpulsation Improves Exercise Duration and Peak Oxygen Consumption in Older Patients With Heart Failure: A Subgroup Analysis of the PEECH Trial

Abbott-Smith CW, Chung ES, Varricchio T, de Lame PA, Silver MA, Francis GS, Feldman AM; Prospective Evaluation of EECP in Congestive Heart Failure (PEECH) Investigators.

Congestive Heart Failure. 2006 Nov-Dec;12(6):307-311.

Effectiveness of Repeat Enhanced External Counterpulsation for Refractory Angina in Patients Failing to Complete an Initial Course of Therapy

Lawson WE, Barsness G, Michaels AD, Soran O, Kennard ED, Kelsey SF, Hui

JC. *Cardiology*. 2006 Nov 1;108(3):170-175 [Epub ahead of print]

Primer: Practical Approach to the Selection of Patients for and Application of EECP

Michaels AD, McCullough PA, Soran OZ, Lawson WE, Barsness GW, Henry TD, Linnemeier G, Ochoa A, Kelsey SF, Kennard ED.

Nature Clinical Practice Cardiovascular Medicine. 2006 Nov;3(11):623-632.

Enhanced External Counterpulsation for the Treatment of Angina Pectoris

Cohn PF.

Progress in Cardiovascular Diseases. 2006 Sep-Oct;49(2):88-97.

Effects of Enhanced External Counterpulsation on Carotid Circulation in Patients with Coronary Artery Disease

Levenson J, Simon A, Megnien JL, Chironi G, Garipey J, Pernollet MG, Craiem D, Iliou

MC *Cardiology*. 2006 Sep 29;108(2):104-110 [Epub ahead of print].

Enhanced External Counterpulsation Improves Exercise Tolerance in Patients With Chronic Heart Failure

Feldman AM, Silver MA, Francis GS, Abbottsmith CW, Fleishman BL, Soran O, de Lame PA, Varricchione T for the PEECH Investigators.

Journal of the American College of Cardiology. 2006 Sep 19;48(6):1199-1206. Epub 2006 Aug 25.

Enhanced External Counterpulsation Treatment Improves Arterial Wall Properties and Wave Reflection Characteristics in Patients With Refractory Angina

Nichols WW, Estrada JC, Braith RW, Owens K, Conti CR.

Journal of the American College of Cardiology. 2006 Sep 19;48(6):1209-1215. Epub 2006 Aug 25.

Effect of Enhanced External Counterpulsation on Resting Oxygen Uptake in Patients Having Previous Coronary Revascularization and in Healthy Volunteers

Ochoa AB, Dejong A, Grayson D, Franklin B, McCullough P.

American Journal Cardiology. 2006 Sep 1;98(5):613-615. Epub 2006 Jun 30.

Cyclic GMP Release by Acute Enhanced External Counterpulsation

Levenson J, Pernollet MG, Iliou MC, Devynck MA, Simon A.

American Journal Hypertension. 2006 Aug;19(8):867-872.

Effect of External Counterpulsation on Plasma Nitric Oxide and Endothelin-1 Levels

Akhtar M, Wu GF, Du ZM, Zheng ZS, Michaels AD.

American Journal Cardiology. 2006 Jul 1;98(1):28-30. Epub 2006 May 3.

One Year Follow-up of Patients with Refractory Angina Pectoris Treated with Enhanced External Counterpulsation

Pettersson T, Bondesson S, Cojocar D, Ohlsson O, Wackenfors A, Edvinsson L.

BMC Cardiovascular Disorder. 2006 Jun 15;6:28.

Enhanced External Counterpulsation Reduces Lung/Heart Ratio at Stress in Patients with Coronary Artery Disease

Lee CM, Wu YW, Jui HY, Chen MF, Lee YT, Soran O.

Cardiology. 2006 May 9;106(4):237-240 [Epub ahead of print]

Enhanced External Counterpulsation for Treatment of Refractory Angina Pectoris

Novo G, Bagger JP, Carta R, Koutroulis G, Hall R, Nihoyannopoulos P.

Journal of Cardiovascular Medicine. 2006 May;7(5):335-339.

Mechanisms and Evidence for the Role of Enhanced External Counterpulsation in Heart Failure Management

Silver MA.

Current Heart Failure Reports. 2006 Apr;3(1):25-32.

EECP and Coronary Artery Disease

Bill M. *Advance for Physician Assistants*. 2006 Mar;14(2):48-52.

The Immediate and Long-term Outcome of Enhanced External Counterpulsation in Treatment of Chronic Stable Refractory Angina

Loh PH, Louis AA, Wundram J, Rigby AS, Cook J, Hurren S, Nikolay NP, Caplin J, Cleland JG. *Journal of Internal Medicine*. 2006 Mar;259(3):276-284.

Two-Year Outcomes in Patients with Mild Refractory Angina Treated with Enhanced External Counterpulsation

Lawson WE, Hui JCK, Kennard ED, Kelsey SF, Michaels AD, Soran O. *Clinical Cardiology*. 2006 Feb;29(2):69-73.

Two year clinical outcomes, event free survival rates and incidence of repeat enhanced external counterpulsation (EECP) in refractory angina patients with left ventricular dysfunction. A report from the international EECP patient registry. Soran O, Kennard ED, Kelsey SF *Am J Cardiol*. 2006 Jan 1; 97(1): 17-20.

Impact of Body Mass Index on Outcomes of Enhanced External Counterpulsation Therapy

McCullough PA, Silver MA, Kennard ED, Kelsey SF, Michaels AD; IEPR Investigators. *American Heart Journal*. 2006 Jan;151(1):139 e9-e13.

Angiogenic Effects of Long-term Enhanced External Counterpulsation in a Dog Model of Myocardial Infarction

Wu G, Du Z, Hu C, Zheng Z, Zhan C, Ma H, Fang D, Ahmed KT, Laham RJ, Hui JC, Lawson WE. *Am J of Physiology – Heart and Circulatory Physiology*. 2006 Jan;290(1):H248-54. Epub 2005 Aug 19.

The Effects of Enhanced External Counterpulsation on Myocardial Perfusion in Patients with Stable Angina: A Multicenter Radionuclide Study

Michaels ADF, Raisinghani A, Soran O, de Lame PA, Lemaire ML, Kligfield P, Watson DD, Conti CR, Beller G. *American Heart Journal*. 2005 Nov;150(5):1066-1073.

Enhanced External Counterpulsation Improves Endothelium-Dependent Vasorelaxation in the Carotid Arteries of Hypercholesterolemic Pigs

Tao J, Tu C, Yang Z, Zhang Y, Chung XL, Ma H, Zhen ZS. *International Journal of Cardiology*. 2005 Nov 23; [Epub ahead of print]

Effects of Enhanced Counterpulsation on Vascular Cell Release of Coagulation Factors

Arora R, Chen HJ, Rabbani L. *Heart & Lung: The Journal of Acute Critical Care*. 2005 Jul-Aug;34(4):252-256.

Current Nonpharmacologic Management of Coronary Artery Disease: Focus on External Counterpulsation

Conti CR. *Current Treatment Options in Cardiovascular Medicine*. 2005 May;7(1):81-86.

Predictors of Benefit in Angina Patients One Year After Completing Enhanced External Counterpulsation: Initial Responders to Treatment Versus Nonresponders

Lawson WE, Hui JCK, Kennard ED, Barsness G, Kelsey SF. *Cardiology*. 2005 Apr 13;103(4):201-206

Treating Heart Failure With Enhanced External Counterpulsation (EECP): Design of the Prospective Evaluation of EECP in Heart Failure (PEECH) Trial

Feldman AM, Silver AM, Francis GS, de Lame P, Parmley WW. *Journal of Cardiac Failure*. 2005 Apr;11(3):240-245.

Enhanced External Counterpulsation Improves Systolic Function by Echocardiography in Patients with Coronary Artery Disease

Arora RR, Lopez S, Saric M.

Heart Lung. 2005 Mar-Apr;34(2):122-125.

Enhanced External Counter Pulsation (EECP) as a Novel Treatment for Restless Legs Syndrome (RLS): A Preliminary Test of the Vascular Neurologic Hypothesis for RLS

Rajaram SS, Shanahan J, Ash C, Walters AS, Weisfogel G.
Sleep Medicine. 2005 Mar;6(2):101-106. Epub 2005 Jan 24

An Update on Enhanced External Counterpulsation

Shea ML, Conti CR, Arora RR
Clinical Cardiology. 2005 Mar;28(3):115-118.

Enhanced External Counterpulsation: A New Technique to Augment Renal Function in Liver Cirrhosis

Werner D, Trägner P, Wawer A, Porst H, Werner DG, Gross P.
Nephrology Dialysis Transplantation. 2005 Mar 23; [Epub ahead of print].

Angina Patients with Diastolic Versus Systolic Heart Failure Demonstrate Comparable Immediate and One-Year Benefit from Enhanced External Counterpulsation

Lawson WE, Silver MA, Hui JCK, Kennard ED, Kelsey SF.
Journal of Cardiac Failure. 2005 Feb;11(1):61-66.

Frequency and Efficacy of Repeat Enhanced External Counterpulsation for Stable Angina Pectoris (from the International EECP Patient Registry)

Michaels AD, Barsness GW, Soran O, Kelsey SF, Kennard ED, Hui JCK, and Lawson WE for the International EECP Patient Registry Investigators.
American Journal of Cardiology. 2005 Feb;95(3):394-397.

Enhanced External Counterpulsation Does Not Compromise Cerebral Autoregulation

Marthol H, Werner D, Brown CM, Hecht M, Daniel WG, Hilz MJ.
Acta Neurologica Scandinavica. 2005 Jan;111(1):34-41.

Enhanced External Counterpulsation Does Not Alter Arterial Stiffness in Patients with Angina

Dockery F, Rajkumar C, Bulpitt CJ, Hall RJ, Bagger JP.
Clinical Cardiology. 2004 Dec;27:689-692.

Effects of Enhanced External Counterpulsation on Hemodynamics and its Mechanism-Relation to Neurohormonal Factors

Taguchi I, Ogawa K, Kanaya T, Matsuda R, Kuga H, Nakatsugawa M.
Circulation Journal. 2004 Nov;68(11):1030-1034.

Enhanced External Counterpulsation

Brosche TA, Middleton, SK, Boogaard RG.
Dimensions of Critical Care Nursing. 2004 Sep/Oct;23(5):208-214.

Accelerated Reperfusion of Poorly Perfused Retinal Areas in Central Retinal Artery Occlusion and Branch Retinal Artery Occlusion After a Short Treatment with Enhanced External Counterpulsation

Werner D, Michalk F, Harazny J, Hugo C, Daniel WG, Michelson G.
Retina. 2004 Aug;24(4):541-547.

Effectiveness of Enhanced External Counterpulsation in Patients with Left Main Disease and Angina

Lawson WE, Hui JCK, Barsness GW, Kennard ED, Kelsey SF for the IEPR Investigators. *Clinical Cardiology*. 2004 Aug;27(8):459-463.

Enhanced External Counterpulsation Therapy: Significant Clinical Improvement without Electrophysiologic Remodeling

Henrickson CA, Chandra-Strobos N.
Annals of Noninvasive Electrocardiology. 2004 Jul;9(3):265-269.

Enhanced External Counterpulsation Improves Skin Oxygenation and Perfusion

Hilz MJ, Werner D, Marthol H, Flachskampf FA, Daniel WG.
European Journal of Clinical Investigation. 2004 Jun;34(6):385-391.

Successful Treatment of Symptomatic Coronary Endothelial Dysfunction with Enhanced External Counterpulsation

Bonetti PO, Gadasalli SN, Lerman A, Barsness GW.
Mayo Clinic Proceedings. 2004 May;79(5):690-692.

Enhanced External Counterpulsation in Ischemic Heart Disease and Congestive Heart Failure

Mielniczuk L, da Silva LB, Haddad H.
Canadian Medical Association Journal. 2004 Apr 13;170(8):1223-1224.

Improvement of Oxygen Metabolism in Ischemic Myocardium as a Result of Enhanced External Counterpulsation with Heparin Pretreatment for Patients with Stable

Masuda D, Fujita M, Nohara R, Matsumori A, Sasayama S.
Heart Vessels. 2004 Mar;19(2):59-62.

Effect of Enhanced External Counterpulsation on Dobutamine-induced Left Ventricular Wall Motion Abnormalities in Severe Chronic Angina Pectoris

Bagger JP, Hall RJ, Koutroulis G, Nihoyannopoulos P.
American Journal of Cardiology. 2004 Feb 15;93(4):465-467.

Two-Year Outcomes After Enhanced External Counterpulsation for Stable Angina Pectoris (from the International Patient Registry [IEPR])

Michaels AD, Linnemeier G, Soran O, Kelsey SF, Kennard ED.
American Journal of Cardiology. 2004 Feb 15;93(4):461-464.

A New Treatment Modality in Heart Failure Enhanced External Counterpulsation (EECP)

Soran O.
Cardiology in Review. 2004 Jan-Feb;12(1):15-20.

Enhanced External Counterpulsation as Initial Revascularization Treatment for Angina Refractory to Medical Therapy

Fitzgerald CP, Lawson WE, Hui JC, Kennard ED; IEPR Investigators.
Cardiology. 2003 Nov;100(3):129-135

Functional Status Improvement After Enhanced External Counterpulsation (EECP) for Treatment of Chronic Angina Pectoris

Kennard ED, Linnemeier G, Kelsey SF.
Proceedings of the 5th International Congress on Coronary Artery Disease –Frontiers in Coronary Artery Disease. 2003 Oct 19-21;(Florence, Italy):187-189.

Enhanced External Counterpulsation for the Relief of Angina in Patients with Diabetes: Safety, Efficacy and 1-Year Clinical Outcomes

Linnemeier G, Rutter MK, Barsness G, Kennard ED, Nesto RW; IEPR Investigators.
American Heart Journal. 2003 Sep;146(3):453-458.

Analysis of Baseline Factors Associated with Reduction in Chest Pain in Patients with Angina Pectoris Treated by Enhanced External Counterpulsation

Lawson WE, Kennard ED, Hui JCK, Holubkov R, Kelsey SF.
American Journal of Cardiology. 2003 Aug 15;92(4):439-443.

Enhanced External Counterpulsation for Refractory Angina Pectoris

Sinvhal RM, Gowda RM, Khan IA.
Heart. 2003 Aug;89(8):830-833.

Enhanced External Counterpulsation for Ischemic Heart Disease: What's Behind the Curtain?

Bonetti PO, Holmes DR Jr, Lerman A, Barsness GW.
Journal of the American College of Cardiology. 2003 Jun 4;41(11):1918-1925.

Exercise Capability and Myocardial Perfusion in Chronic Angina Patients Treated with Enhanced External Counterpulsation

Tartaglia J, Stenerson Jr J, Charney R, Ramasamy S, Fleishman BL, Gerardi P, Hui JCK. *Clinical Cardiology*. 2003 Jun;(26):287-290.

Changes of Cerebral Blood Flow Velocities During Enhanced External Counterpulsation

Werner D, Marthol H, Brown CM, Daniel WG, Hilz MJ. *Acta Neurologica Scandinavica*. 2003 Jun;107(6):405-411.

Enhanced External Counterpulsation Improves Endothelial Function in Patients with Symptomatic Coronary Artery Disease

Bonetti PO, Barsness GW, Keelan PC, Schnell TI, Pumper GM, Kuvin JT, Schnall RP, Holmes DR, Higano ST, Lerman A. *Journal of the American College of Cardiology*. 2003 May 21;41(10):1761-1768.

Enhanced External Counterpulsation in the Management of Angina in the Elderly

Linnemeier G, Michaels AD, Soran O, Kennard ED; International EECPP Registry (IEPR) Investigators. *American Journal of Geriatric Cardiology*. 2003 Mar-Apr;12(2):90-96.

Enhanced External Counterpulsation

Lam L, Mahmood S. *Asian Cardiovascular & Thoracic Annals*. 2003 Mar;11(1):92-94.

The Safety and Efficacy of Enhanced External Counterpulsation (EECP) In-Patients with Heart Failure: A Multi-center Feasibility Study. Soran O, De Lame PA, Fleishman B, Grossman W, Feldman AM. *Congest Heart Fail* 2002; 8: 204-208.

A Historical Overview of Enhanced External Counterpulsation

DeMaria AN. *Clinical Cardiology*. 2002 Dec;25(12 Suppl 2):II3-5.

A Review of Enhanced External Counterpulsation Clinical Trials

Beller GA. *Clinical Cardiology*. 2002 Dec;25(12 Suppl 2):II6-10.

Enhanced External Counterpulsation: Mechanism of Action

Feldman AM. *Clinical Cardiology*. 2002 Dec;25(12 Suppl 2):II11-15.

Current Use of Enhanced External Counterpulsation and Patient Selection

Lawson WE. *Clinical Cardiology*. 2002 Dec;25(12 Suppl 2):II16-21.

Treatment Options for Angina Pectoris and the Future Role of Enhanced External Counterpulsation

Holmes DR Jr. *Clinical Cardiology*. 2002 Dec;25(12 Suppl 2):II22-25.

Ongoing and Planned Studies of Enhanced External Counterpulsation

Conti CR. *Clinical Cardiology*. 2002 Dec;25(12 Suppl 2):II26-28.

Enhanced External Counterpulsation - A Therapeutic Option for Patients with Chronic Cardiovascular Problems

Linnemeier G. *Journal of Cardiovascular Management*. 2002 Nov-Dec;13(6):20-25.

Enhanced External Counterpulsation as Treatment for Chronic Angina in Patients with Left Ventricular Dysfunction: A Report from the International EECPP Patient Registry (IEPR)

Soran O, Kennard ED, Kelsey SF, Holubkov R, Strobeck J, Feldman AM. *Congestive Heart Failure*. 2002 Nov-Dec;8(6):297-302.

Left Ventricular Systolic Unloading and Augmentation of Intracoronary Pressure and Doppler Flow During Enhanced External Counterpulsation

Michaels AD, Accad M, Ports TA, Grossman W. *Circulation*. 2002 Sep 3;106(10):1237-

1242.

Experience with Enhanced External Counterpulsation (EECP) in Coronary Artery Disease

Crawford LE. *Today's Therapeutic Trends*. 2002;20(3):243-252.

Enhanced External Counterpulsation in Patients with Heart Failure: A Multicenter Feasibility Study

Soran O, Fleishman B, Demarco T, Grossman W, Schneider VM, Manzo K, de Lame PA, Feldman AM. *Congestive Heart Failure*. 2002 Jul-Aug;8(4):204-208, 227.

Relation of the Pattern of Diastolic Augmentation During a Course of Enhanced External Counterpulsation (EECP) to Clinical Benefit [from the International EECP Patient Registry (IEPR)] Lakshmi

MV, Kennard ED, Kelsey SF, Holubkov R, Michaels AD. *American Journal of Cardiology*. 2002 Jun 1;89(11):1303-1305.

Comparison of Patients Undergoing Enhanced External Counterpulsation and Percutaneous Coronary Intervention for Stable Angina Pectoris

Holubkov R, Kennard ED, Foris JM, Kelsey SF, Soran O, Williams DO, Holmes Jr. DR. *American Journal of Cardiology*. 2002 May 15;89:1182-1186.

Effects of Enhanced External Counterpulsation on Stress Radionuclide Coronary Perfusion and Exercise Capacity in Chronic Stable Angina Pectoris

Stys TP, Lawson WE, Hui JCK, Fleishman B, Manzo K, Strobeck JE, Tartaglia J, Ramasamy S, Suwita R, Zheng ZS, Liang H, Werner D. *American Journal of Cardiology*. 2002 Apr 1;89(7):822-824.

Effects of Enhanced External Counterpulsation on Health-Related Quality of Life Continue 12 Months After Treatment: A Substudy of the Multicenter Study of Enhanced External Counterpulsation

Arora RR, Chou TM, Jain D, Fleishman B, Crawford L, McKiernan T, Nesto R, Ferrans CE, Keller S. *Journal of Investigative Medicine*. 2002 Jan;50(1):25-32.

Acute and Chronic Hemodynamic Effects of Enhanced External Counterpulsation in Patients with Angina Pectoris

Arora RR, Carlucci ML, Malone AM, Baron NV. *Journal of Investigative Medicine*. 2001 Nov;49(6):500-504.

Acute Hemodynamic Effects and Angina Improvement with Enhanced External Counterpulsation

Stys T, Lawson WE, Hui JCK, Lang G, Liuzzo J, Cohn PF. *Angiology*. 2001 Oct;52(10):653-658.

A Report from the International Enhanced External Counterpulsation Registry (IEPR)

Holubkov R, Kennard E, Kelsey S, Soran O. *Advances in Coronary Artery Diseases-4th International Congress on Coronary Artery Disease*. 2001 Oct 21-24;(Prague, Czech Republic):387-391.

Benefit and Safety of Enhanced External Counterpulsation in Treating Coronary Artery Disease Patients with a History of Congestive Heart Failure

Lawson WE, Kennard ED, Holubkov R, Kelsey SF, Strobeck JE, Soran O, Feldman AM. *Cardiology*. 2001;96(2):78-84.

Changes in Ocular Blood Flow Velocities During External Counterpulsation in Healthy Volunteers and Patients with Atherosclerosis

Werner D, Michelson G, Harazny J, Michalk F, Voigt JU, Daniel WG. *Graefe's Archive for Clinical and Experimental Ophthalmology*. 2001 Aug;239(8):599-602.

Enhanced External Counterpulsation Improved Myocardial Perfusion and Coronary Flow Reserve in Patients with Chronic Stable Angina; Evaluation by ¹³N-Ammonia Positron Emission Tomography

Masuda D, Nohara R, Hirai T, Kataoka K, Chen LG, Hosokawa R, Inubushi M, Tadamura E, Fujita M, Sasayama S. *European Heart Journal*. 2001 Aug;22(16):1451-1458.

Safety and Effectiveness of Enhanced External Counterpulsation in Improving Angioplasty Restenosis

Stys TP, Lawson WE, Hui JCK, Tartaglia JJ, Subramanian R, Du ZM, Zhang MQ.

Proceedings of the 2nd International Congress on Heart Disease – New Trends in Research, Diagnosis and Treatment (International Academy of Cardiology).. 2001 Jul 21-24;(Washington DC, USA):369-372.

Effects of Enhanced External Counterpulsation on Rennin-Angiotensin System on Experimental AMI

Lu L, Zheng ZS, Wu WK, Lawson WE, Hui JCK.

Proceedings of the 2nd International Congress on Heart Disease – New Trends in Research, Diagnosis and Treatment (International Academy of Cardiology). 2001 Jul 21-24;(Washington DC, USA):275-279.

Predictors of Adverse Outcomes in Treating Angina Patients with Enhanced External Counterpulsation

Lawson WE, Fleishman B, Manzo K, Kennard ED, Holubkov R, Kelsey SF.

Proceedings of the 2nd International Congress on Heart Disease – New Trends in Research, Diagnosis and Treatment (International Academy of Cardiology). 2001 Jul 21-24;(Washington DC, USA):231-234.

The International EECPP Patient Registry (IEPR): Design, Methods, Baseline Characteristics and Acute Results

Barsness G, Feldman AM, Holmes Jr. DR, Holubkov R, Kelsey SF, Kennard ED.

Clinical Cardiology. 2001 Jun;24(6):435-442.

Does Higher Diastolic Augmentation Predict Clinical Benefit from Enhanced External Counterpulsation?: Data from the International EECPP Patient Registry (IEPR)

Michaels AD, Kennard ED, Kelsey SE, Holubkov R, Soran O, Spence S, Chou TM.

Clinical Cardiology. 2001 Jun;24(6):453-458.

Numerical Simulation of Enhanced External Counterpulsation

Ozawa ET, Bottom KE, Xiao X, Kamm RD.

Annals of Biomedical Engineering. 2001 Apr;29(4):284-297.

Psychosocial Effects of Enhanced External Counterpulsation in the Angina Patient: A Second Study

Springer S, Fife A, Lawson W, Hui JCK, Jandorf L, Cohn PF, Fricchione G.

Psychosomatics. 2001 Mar-Apr;42(2):124-132.

Enhanced External Counterpulsation in Unrevascularizable Patients

Barsness GW.

Current Interventional Cardiology Reports. 2001 Feb;3(1):37-43.

Enhanced External Counterpulsation Improves Exercise Tolerance, Reduces Exercise-Induced Myocardial Ischemia and Improves Left Ventricular Diastolic Filling in Patients with Coronary Artery Disease

Urano H, Ikeda H, Ueno T, Matsumoto T, Murohara T, Imaizumi T.

Journal of the American College of Cardiology. 2001 Jan;37(1):93-99.

Enhanced External Counterpulsation for Chronic Myocardial Ischemia

Lawson WE, Hui JCK.

The Journal of Critical Illness. 2000 Nov;15(11):629-636.

Comparison of Hemodynamic Effects of Enhanced External Counterpulsation and Intra-Aortic Balloon Pumping in Patients with Acute Myocardial Infarction

Taguchi I, Ogawa K, Oida A, Abe S, Kaneko N, Sakio H.

American Journal of Cardiology. 2000 Nov 15;86(10):1139-1141.

Treatment Benefit in the Enhanced External Counterpulsation Consortium

Lawson WE, Hui JCK, Lang G.

Cardiology. 2000;94(1):31-35.

Noninvasive Revascularization by Enhanced External Counterpulsation: A Case Study and Literature Review

Singh M, Holmes Jr. DR, Tajik AJ, Barsness GW.

Mayo Clinic Proceedings. 2000 Sep;75(9):961-965.

Long-Term Prognosis of Patients with Angina Treated with Enhanced External Counterpulsation:

Five-Year Follow-Up Study

Lawson WE, Hui JCK, Cohn PF.
Clinical Cardiology. 2000 Apr;23(4):254-258.

EECP Therapy Continues to Demonstrate Potential as a Treatment for Chronic Angina

Lang M. *Cardiovascular Disease Management*. 1999 Nov.

Pneumatic External Counterpulsation: A New Noninvasive Method to Improve Organ Perfusion

Werner D, Schneider M, Weise M, Nonnast-Daniel B, Daniel WG. *American Journal of Cardiology*. 1999 Oct 15;84(8):950-952.

External Counterpulsation Increases Capillary Density During Experimental Myocardial Infarction

Huang W, Chen YC, Zheng ZS, Zhong WF, Lawson W, Hui J.
Reprinted from the International Proceedings Division of the XXI Congress of the European Society of Cardiology. 1999 Aug 28-Sep 1; Barcelona, Spain:349-353.

Enhanced External Counterpulsation: The Howard County Experience in the First 18 Patients

Gloth S, Oken HA.
Maryland Medical Journal. 1999 Jul-Aug;48(4):155-156.

Enhanced External Counterpulsation

Caldwell CR, St. Pierre M, Talley JD.
Journal of the Arkansas Medical Society. 1999 Jul;96(2):54-56.

The Multicenter Study of Enhanced External Counterpulsation (MUST-EECP): Effect of EECP on Exercise-Induced Myocardial Ischemia and Anginal Episodes

Arora RR, Chou TM, Jain D, Fleishman B, Crawford L, McKiernan T, Nesto R.
The Journal of the American College of Cardiology. 1999 Jun;33(7):1833-1840.

Improvement of Regional Myocardial and Coronary Blood Flow Reserve in a Patient Treated with Enhanced External Counterpulsation: Evaluation by Nitrogen-13 Ammonia PET

Masuda D, Nohara R, Inada H, Hirai T, Li-Guang C, Kanda H, Inubushi M, Tadamura E, Fujita M, Sasayama S.
Japanese Circulation Journal. 1999 May;63(5):407-411.

Enhanced External Counterpulsation in the Management of Patients with Cardiovascular Disease

Soran O, Crawford LE, Schneider VM, Feldman AM. *Clinical Cardiology*. 1999 Mar;22(3):173-178.

Enhanced External Counterpulsation as a New Treatment Modality for Patients with Erectile Dysfunction

Froschermaier SE, Werner D, Leike S, Schneider M, Waltenberger J, Daniel WG, Wirth MP.
Urologia Internationalis. 1998;61(3):168-171.

Prior Revascularization Increases the Effectiveness of Enhanced External Counterpulsation

Lawson WE, Hui JCK, Guo T, Burger L, Cohn PF.
Clinical Cardiology 1998 Nov;21(11):841-844.

Maximizing the Hemodynamic Benefit of Enhanced External Counterpulsation

Suresh K, Simandl S, Lawson WE, Hui JCK, Lillis O, Burger L, Guo T, Cohn PF.
Clinical Cardiology. 1998 Sep;21(9):649-653.

Enhanced External Counterpulsation

Chou TM.
ACC Educational Highlights. 1998 Summer:6-9.

Historical Review of the Development of Enhanced External Counterpulsation Technology and its Physiologic Rationale

Soroff HS, Hui JCK, Giron F.
Cardiovascular Reviews and Reports. 1997 Nov;18(11):34-36, 39.

Case Studies: Enhanced External Counterpulsation

Tartaglia J, Stenerson JF.
Cardiovascular Reviews and Reports. 1997 Nov;18(11):26, 29-33.

The Emerging Role of Enhanced External Counterpulsation in Cardiovascular Disease Management

Strobeck JE, Baklajian R, Hannon JC.
Cardiovascular Reviews and Reports. 1997 Nov;18(11):20-25.

Psychosocial Aspects of Enhanced External Counterpulsation

Fricchione GL, Hui JCK, Fife A, Jandorf L, Vaccaro B, Burger L, Lawson WE, Cohn P.
Cardiovascular Reviews and Reports. 1997 Oct;18(10):37-41.

Enhanced External Counterpulsation: U.S. Clinical Research

Lawson WE, Cohn PF, Hui JCK, Burger L, Guo T, Soroff H.
Cardiovascular Reviews and Reports. 1997 Oct;18(10):25-29.

Enhanced External Counterpulsation: Chronicle of a New Approach to the Therapy of Angina Pectoris

Amsterdam EA.
Cardiovascular Reviews and Reports 1997 Nov;18(11):15-16, 19.

Enhanced External Counterpulsation: A New Therapeutic Option for Patients Who Have Failed Coronary Angioplasty and/or Bypass Surgery

Cohn PF, Lawson WE, Burger L, Hui JCK.
Cardiovascular Reviews and Reports. 1997;18(5):10-17.

New Therapy Provides Non-Invasive Revascularization

Burger L.
Cath-Lab Digest. 1997;5(1):1-4.

Enhanced External Counterpulsation as an Adjunct to Revascularization in Unstable Angina

Lawson WE, Hui JCK, Oster ZH, Zheng ZS, Cabahug C, Katz JP, Dervan JP, Burger L, Jiang L, Soroff HS, Cohn PF.
Clinical Cardiology. 1997 Feb;20:178-180.

Improved Exercise Tolerance Following Enhanced External Counterpulsation: Cardiac or Peripheral Effect?

Lawson WE, Hui JCK, Zheng ZS, Burger L, Jiang L, Lillis O, Oster Z, Soroff H, Cohn PF.
Cardiology. 1996 Jul-Aug;87(4):271-275.

Can Angiographic Findings Predict which Coronary Patients will Benefit from Enhanced External Counterpulsation?

Lawson WE, Hui JCK, Zheng ZS, Burger L, Jiang L, Lillis O, Soroff HS, Cohn PF.
American Journal of Cardiology. 1996 May 15;77(12):1107-1109.

Psychosocial Effects of Enhanced External Counterpulsation in the Angina Patient

Fricchione GL, Jaghab K, Lawson W, Hui JCK, Jandorf L, Zheng ZS, Cohn PF, Soroff H.
Psychosomatics. 1995 Sep-Oct;36(5):494-497.

Three-Year Sustained Benefit from Enhanced External Counterpulsation in Chronic Angina Pectoris

Lawson WE, Hui JCK, Zheng ZS, Oster Z, Katz JP, Diggs P, Burger L, Cohn CD, Soroff HS, Cohn PF.
American Journal of Cardiology. 1995 Apr 15;75:840-841.

Enhanced External Counterpulsation in the Treatment and Rehabilitation of Coronary Patients in Indonesia

Sjukri K, Aulia S, Karo-Karo S, Manoefris K, Adnil B, Gunadhi I, Japaries W, Suwita R.
Asian Cardiovascular & Thoracic Annals. 1995;3(1):26-28.

Role of Enhanced External Counterpulsation in Angina Treatment

Cohn PF, Lawson WE.
The Journal of Myocardial Ischemia. 1994 Nov-Dec;6(10):25-27.

Efficacy of Enhanced External Counterpulsation in the Treatment of Angina Pectoris

Lawson WE, Hui JCK, Soroff HS, Zheng ZS, Kayden DS, Sasvary D, Atkins H, Cohn PF. *American Journal of Cardiology*. 1992 Oct 1;70(9):859-862.

New Sequential External Counterpulsation for the Treatment of Acute Myocardial Infarction

Zheng ZS, Yu LQ, Cai SR, Kambic H, Li TM, Ma H, Chen PZ, Huang BJ, Nose Y. *Transactions of the American Society of Artificial Internal Organs*. 1984 Nov;8(4):470-477.