Erectile Dysfunction

Effect of enhanced external counterpulsation on medically refractory angina patients with erectile dysfunction

W. E. Lawson,1 J. C. K. Hui,1 E. D. Kennard,2 O. Soran,3 P. A. McCullough,4 S. F. Kelsey2 for the IEPR Investigators

SUMMARY

Patients with refractory angina often suffer from erectile dysfunction. Enhanced external counterpulsation (EECP) decreases symptoms of angina, and increases nitric oxide release. This study evaluated the effect of EECP on sexual function in men with severe angina.The International Index of Erectile Function (IIEF) was used to assess erectile function of severe angina patientsenroled in the International EECP Patient Registry. Their symptom status, medication use, adverse clinical events and quality of life were also recorded before and after completing a course of EECP.A cohort of 120 men (mean age 65.0 ± 9.7) was enroled. The men had severe coronary disease with 69% having a prior myocardial infarction, 90% prior coronary artery bypass graft or percutaneous coronary intervention, 49% with three vessel coronary artery disease, 86% were not candidates for further revascularisation, 71% hypertensive, 83% dyslipidaemia, 42% diabetes mellitus, 75% smoking and 68% using nitrates. Functional status was low with a mean Duke Activity Status Inventory score of 16.6 ± 14.8. After 35 h of EECP anginal status improved in 89%, and functional status in 63%. A comparison of the IIEF scores pre- and post-EECP therapy demonstrated a significant improvement in erectile function from 10.0 ± 1.0 to 11.8 ± 1.0 (p ¼ 0.003), intercourse satisfaction (4.2 ± 0.5 to 5.0 ± 0.5, p ¼ 0.009) and overall satisfaction (4.7 ± 0.3 to 5.3 ± 0.3, p ¼ 0.001). However, there were no significant changes in orgasmic function (4.2 ± 0.4 to 4.6 ± 0.4, p ¼ 0.19) or sexual desire (5.3 ± 0.2 to 5.5 ± 0.2). The findings suggest that EECP therapy is associated with improvement in erectile function in men with refractory angina.

METHODS:

The IEPR 2 is co-ordinated at the Graduate School of Public Health at the University of Pittsburgh, enroling consecutive patients treated with EECP from 73 participating centres, typically with severe, medically refractory angina. All sites had approval of the Institutional Review Board and patients gave their written informed consent. Data prior to EECP treatment included information on patient demographics, medical and cardiovascular history, angina status, quality of life, medications and Duke Activity Status Inventory (DASI) scores. All male patients enrolling in the IEPR from 16 participating sites were asked if they would like to participate in this study. The 15-item, self-administered questionnaire of the International Index of Erectile Function (IIEF) (8) was used to assess ED before and after completing a course of EECP. A repeat IIEF was completed within the month following completion of EECP therapy. The IIEF identifies five domains (erectile function, orgasmic function, sexual desire, intercourse satisfaction and overall satisfaction) associated with male sexual function. A higher score on each domain represents better functioning. The completed IIEF forms were submitted directly to the University of Pittsburgh in an anonymous manner. The completed forms were never seen by the clinical centres,

and were matched to the clinical data by means of a unique code. EECP treatment course was typically prescribed for 1 h/day, 5 days/week for a total of 35 h. Patients were included in the study if they had one or more hours of treatment. The treatment course could be altered by patient preference, clinical course or response to therapy. Post-treatment, all patients in the Registry were reassessed for symptom status, medication use, adverse clinical events, additional interventions and quality of life. Major adverse cardiovascular events (MACE) during treatment were identified, namely: all-cause mortality, non-fatal MI and revascularization with angioplasty or bypass surgery. Data from the Mens Health Study were analysed for each domain of the IIEF before and after therapy. A comparison of the clinical baseline characteristics of men participating in the study was made with all men not participating.

RESULTS:

One hundred and twenty men completed the IIEF forms pre- and post-EECP. A comparison group of 644 men who were in the IEPR 2 registry but did not participate in the Men Health study was used as a comparison in evaluating their angina status. Baseline demographics demonstrated the Mens Health subgroup to have largely similar characteristics to the overall group of men not enroled in the substudy.

CONCLUSIONS:

Patientsenroled in the Mens Health substudy were comparable with the general population of men enroled in the IEPR 2, a study of the effect of EECP in patients with medically refractory angina. The studied population had multiple conditions associated with ED including: older age, advanced cardiovascular disease, a high prevalence of diabetes and hypertension, a need for drugs affecting sexual function, moderate to severe physical impairment and decreased psychosocial functioning. A high prevalence of ED was noted in these patients with improvement in the domains of erectile function, intercourse satisfaction and overall satisfaction after treatment with EECP. The findings suggest EECP remains effective in end-stage CAD patients in mediating an improvement in vascular function and in associated ED.

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

*S.E. Froschermaier*a*D. Werner*b*S. Leikea**M. Schneider*b*J. Waltenberger*c*W.G. Daniel*b *M.P. Wirth*a

ABSTRACT:

Enhanced external counterpulsation (EECP) is a noninvasive treatment modality which can increase arterial blood flow in peripheral and coronary arterial disease. Several studies have demonstrated an increase in the flow of the internal iliacal artery and in carotid and renal perfusion during EECP treatment. We investigated the effect of EECP in patients with erectile dysfunction (ED). Thirteen patients were treated with EECP for 20 days, 1 h per day.Patients reported a significant improvement of penile rigidity after completion of the EECP treatment and a significant improvement of penile peak systolic flow was measured by Doppler

sonography. No adverse effects were observed. In conclusion, EECP seems to be an effective treatment modality in patients with ED.

Enhanced external counterpulsation in patients with coronary artery disease-associated erectile dysfunction. Part I: Effects of risk factors. El-Sakka AI, Morsy AM, Fagih BI. Department of Urology, Suez Canal University, Ismailia, Egypt.

aielsakka@yahoo.com Source Citation: Journal of Sexual Medicine, 2007; 9p/

Recently it has been demonstrated that enhanced external countepulsation (EECP) could improve erectile dysfunction (ED) in patients with refractory ischemic heart disease (IHD). The aim was to assess the effect of risk factors on the efficacy and the satisfaction rate of EECP in patients with coronary artery disease (CAD)-associated ED> To assess the effect of risk factors on EECP efficacy and the satisfaction rate, we compared the pre and post EECP responses to erectile function domain, Q3 and Q4 in patients with and without risk factors. Overall satisfaction and global efficacy question (GEQ) were also assessed. A total of 44 male consecutive patients with intractable angina caused by coronary insufficiency which cannot be controlled by conventional therapy were enrolled in this study. Patients were screened and followed up for ED using erectile function psychosocial history was taken from all patients. All patients had severe diffuse triple vessels disease. They all had class III or IV angina. They were receiving the maximal antianginal pharmacotherapy. The mean age + or – SD was 57.1 + or – 5.6 years. Of the patients, 63.9% were below 60 years, and 86.4% were current ex-smokers. There were significant difference between pre and post EECP regarding erectile function domain, Q3 and Q4. The sociodemographic variables were not significantly different among the studies groups and had not affected the GEQ or overall satisfaction. Overall satisfaction and GEQ were negatively influenced by smoking and presence of more than two risk factors. However, diabetes, hypertension, dyslipidemia, myocardial infarction, and obesity have not had such effects. The efficacy and satisfaction rate of EECP in patients with CAD-associated ED were negatively influenced by presence of risk factors; however, the global efficacy and the overall patients' satisfaction were encouraging.

Enhanced external counterpulsation in patients with coronary artery disease-associated erectile dysfunction. Part II: impact of disease duration and treatment courses. J Sex Med. 2007 Sep;4(5):1448-53. Epub 2007 Jul 18.

Sakka AI, Morsy AM, Fagih BI. Department of Urology, Suez Canal University, Ismailia, Egypt.

aielsakka@yahoo.com

INTRODUCTION:

Enhanced external counterpulsation (EECP) is a noninvasive outpatient treatment used for patients with intractable angina refractory to aggressive surgical and medical treatment. Recent results have demonstrated a positive impact of EECP on patients with ischemic heart disease (IHD)-associated erectile dysfunction (ED). AIM: To assess the effect of IHD duration and number of EECP courses on efficacy and satisfaction rate of EECP on patients with IHD-associated ED. MAIN OUTCOME MEASURES: We compare pre and post EECP responses to erectile function (EF) domain, Q3 and Q4 of the International Index of Erectile Function score in patients who received one or two courses of EECP and those who had <5- or > or=5-years duration of IHD. METHODS: As mentioned in part I a total of 44 male patients with intractable angina caused by coronary insufficiency were enrolled in this study. Treatment course of EECP consists of 35 1-hour sessions over 7 weeks. Another 35 1 hour sessions over another 7 weeks were offered to patients who received one course and required a second course because of no or minimal improvement from class IV to class III angina after the first course. RESULTS: Patients who received only one course (N=34) had significantly higher EF domain, Q3 and Q4, in pre and post EECP results than patients who received two courses (N=10) after they completed the first course. Patients who had <5-years duration of IHD had significantly higher pre and post EECP than patients who had >or=5 years regarding EF domain, Q3 and Q4. Considering the global efficacy question, overall satisfaction, and angina, there were significant improvements of post EECP in patients with <5 years than in patients with >or-5- years duration of IHD. CONCLUSION: The efficacy and satisfaction rate of EECP in patients with IHD associated ED were negatively influenced by longer duration of IHD and requirement of a second course of EECP.