

Exercise Training: A “Medicine” for Depression in Chronic Heart Failure?

Stavros Dimopoulos* and Serafim Nanas

Cardiopulmonary Exercise Testing and Rehabilitation Laboratory, 1st Critical Care Medicine Department, NKUA, Athens, Greece

Depression is a common co-morbidity in Chronic Heart Failure (CHF) with a high aggregated prevalence, ranging from 26% in men to 33% in women [1]. The presence of depression has been associated with poor quality of life, increased morbidity, rate of hospitalizations and mortality in CHF population [2].

Pharmacological and non-pharmacological options include psychotherapeutic interventions, complementary and alternative medicine, and general psychosocial as well as exercise training interventions, in order to treat depression in CHF [3]. However, the optimal treatment approach for depression in daily clinical practice for CHF patients remains under investigation.

Exercise training has been shown to be beneficial in terms of increasing functional capacity, improving quality of life, and reducing cardiovascular mortality in CHF patients, while there is growing evidence that it can also decrease levels of depression [4].

Nowadays, SSRIs remain the first-line anti-depressive treatment in CHF patients; however, it has contraindications and collateral effects that often limit its use in such population.

Interestingly, a recent meta-analysis has demonstrated that exercise training and SSRIs can be both effective in treating depression in CHF population and that there is no significant difference between these two medical treatment choices in terms of the size of their effect [5]. The improvement was independent of the severity of CHF syndrome. These challenging data raise the question for medical doctors: is exercise training a new “medicine” for depression in CHF?

The above mentioned meta-analysis provides confirming evidence that exercise training maybe really a “medicine” for treating depression in CHF.

Exercise besides several positive effects reduces stress, restores circadian rhythm and autonomic nervous system imbalance, improves self esteem, mental wellness and increases sense of euphoria, all possible contributing factors that may explain antidepressive beneficial effects in CHF.

Despite its great beneficial effects, exercise training is limited mainly from the low percentage of adherence in exercise training programs by CHF patients. Even though exercise training programs are highly recommended (recommendation Class I) [6], less than 20% of CHF patients are participating in a cardiac rehabilitation program according to a recent European survey [7].

In the large HF-ACTION study, only 30% of CHF patients who assigned to exercise training arm, reached the training goal of 120 minutes after the first 3 months [8], whereas initial training goal was 200 minutes. Depression in CHF maybe per se a limiting factor for reduced adherence in exercise training programs.

Exercise training is relatively inexpensive, easy to perform with few contraindications (if adequately prescribed after medical assessment and supervision) and might be considered as an alternative or complementary intervention to antidepressive drugs (SSRIs).

Different forms of exercise training can be prescribed in CHF patients including aerobic exercise, strength training, or combination.

However, the possible beneficial antidepressive effects have been only investigated so far by aerobic exercise training. It remains unknown whether a combination of aerobic and strength training would have an additional antidepressive effect in such population.

Prospective cohort studies are needed in order to explore if the combination of exercise training with antidepressant is better than each intervention alone. The comparison between exercise training, SSRIs and their combination for depression in terms of efficacy and safety, has also to be addressed. The optimal duration of treatment's beneficial effect on depression should also be investigated further in CHF population. There are not enough data for gender-specific preferable treatment of depression in CHF. This could be also answered by future studies focused on gender differences in terms of depression improvement by applying exercise training and/or SSRIs.

Exercise training has undoubtedly considerable antidepressive effects in CHF patients. Therefore, exercise should be investigated further as a “medicine” in terms of dose-response, moderate or high intensity, continuous or interval exercise, aerobic and/or strength training controlling for safety and efficacy in order to become a new treatment strategy for depression in all stable CHF patients.

References

1. Rutledge T, Reis VA, Linke SE, Greenberg BH, Mills PJ (2006) Depression in heart failure a meta-analytic review of prevalence, intervention effects, and associations with clinical outcomes. *J Am Coll Cardiol* 48: 1527-1537.
2. Freedland KE, Carney RM, Rich MW (2011) Effect of depression on prognosis in heart failure. *Heart Fail Clin* 7: 11-21.
3. Blumenthal JA (2011) New frontiers in cardiovascular behavioral medicine: Comparative effectiveness of exercise and medication in treating depression. *Cleve Clin J Med* 78: S35-S43.
4. Blumenthal JA, Babyak MA, O'Connor C, Keteyian S, Landzberg J, et al. (2012) Effects of exercise training on depressive symptoms in patients with chronic heart failure: the HF-ACTION randomized trial. *JAMA* 308: 465-474.
5. Samartzis L, Dimopoulos S, Tziogourou M, Koroboki E, Kyrianiou T, et al. SSRIs versus exercise training for depression in chronic heart failure: A meta-analysis of randomized controlled trials. *Int J Cardiol* 2013 Aug 3. pii: S0167-5273(13)01354-5 doi:10.1016/j.ijcard.2013.07.143.
6. Dickstein K, Cohen-Solal A, Filippatos G, McMurray JJ, Ponikowski P, et al. (2008) ESC guidelines for the diagnosis and treatment of acute and chronic heart failure 2008: the Task Force for the diagnosis and treatment of acute and chronic heart failure 2008 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association of the ESC (HFA) and

*Corresponding author: Dimopoulos Stavros, Cardiopulmonary Exercise Testing and Rehabilitation Laboratory, 1st Critical Care Medicine Department, National Kapodistrian University of Athens 20, Papadiamantopoulou Str, Athens, 11528, Greece, Tel: 0030-210-7236743, 0030-6973956974; Fax: 0030-210-7242785; E-mail: a-icu@med.uoa.gr

Received August 27, 2013; Accepted August 28, 2013; Published August 30, 2013

Citation: Dimopoulos S, Nanas S (2013) Exercise Training: A “Medicine” for Depression in Chronic Heart Failure? *J Pain Relief* 2: e115. doi:10.4172/2167-0846.1000e115

Copyright: © 2013 Dimopoulos S, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

-
- endorsed by the European Society of Intensive Care Medicine (ESICM). Eur J Heart Fail 10: 933-989.
7. Bjarnason-Wehrens B, McGee H, Zwisler AD, Piepoli MF, Benzer W, et al. (2010) Cardiac rehabilitation in Europe: results from the European Cardiac Rehabilitation Inventory Survey. Eur J Cardiovasc Prev Rehabil 17: 410-418.
8. Sossai P, Sponga B (2012) Physical activity to combat depression in chronic heart failure. JAMA 308: 1738-1739.