Effect of Aerobic Exercise on Postmenopausal Women with Major Depression.

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ABSTRACT

Aims: To investigate the effect of aerobic exercise on post menopausal women with major depression.
Study design: A clinical controlled trial.
Place and Duration of study: Department of Neuropsychiatry, Polaq Hospital-Cairo, between July 2011 and April 2012.
Methodology: Thirty postmenopausal women (age range 45-50 years) were selected randomly, clinically diagnosed with major depression and divided into 2 equal groups (A&B). Patients in group A were treated by aerobic exercise and anti depressive drug (paroxetine; 20mg/day),patients in group B were treated by anti depressive drug (paroxetine; 20mg/day). The rate of depression was measured by Hamilton depression scale before and after the treatment program.
Results: Patients in group A showed highly significant changes in depression intensity (*P=.0001*) after the treatment program with percentage of improvement was 6.27%. Patients in group B showed highly significant changes in depression intensity (*P=.001*) with percentage of improvement was 5.35%. There were highly significant changes between both groups (*P=.002*).
Conclusion: Aerobic exercise with antidepressant are important to improve depression in post menopausal women than antidepressive drug alone. .

Keywords: Menopause; Major depression; Aerobic exercise; Antidepressive drug.

1. INTRODUCTION

Menopause is a natural process, not a medical illness and it is manifested by the cessation of menstrual flow lasting at least 12 months. Even so, the physical and emotional symptoms of menopause can disrupt woman's sleep, sap her energy and at least indirectly trigger feelings of sadness and loss [1]. It is thought that somewhere between 8% and 15% of menopausal women experience some form of depression [2].A variety of theories have been suggested as to why so many menopausal women experience mood disorders. One theory asserts that the stress of menopause symptoms leads to depression, another theory links menopause depression with fluctuating levels of hormones in the body. Throughout menopause, levels of estrogen, progesterone and androgen are constantly changing. These

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hormones are thought to be linked with the mood centers in the brain. As hormones drop, especially estrogen, women can experience periods of sadness and hopelessness. Some women experience a severe drop in mood, resulting in depression [3].Depression is a medical illness that involves the mind and body. Also called major depression, major depressive disorder and clinical depression, it affects feeling, thinking and behaving. Depression can lead to a variety of emotional and physical problems. Women may have trouble doing normal day to day activities and depression may make them feel as if life is not worth living [4]. A person having a major depressive episode usually exhibits a very low mood, which pervades all aspects of life, an inability to experience pleasure in activities that formerly were enjoyed. Depressed people may be preoccupied with, or ruminate over, thoughts and feelings of worthlessness, inappropriate guilt regret, helplessness, hopelessness and self-hatred [5]. A depressed individual is 4.5 times more likely to suffer a heart attack, 2 to 3 times more likely to develop hypertension as depression affects heart rhythm and the platelets in the blood have an increased risk of clumping together to form blood clots. Depressed individuals are 88% more likely to develop cancer because depression can cause damage to T- cells that help to fight disease. Depressed people are also more susceptible to developing Type 2 diabetes [6]. An antidepressant is a psychiatric medication used to alleviate mood disorders, such as major depression and dysthymia and anxiety disorders such as social anxiety disorder . Most mental health experts agree that when depression is severe, medication can be helpful-even life-saving However, research shows that antidepressants fall short for many people. A major U.S. government study released in 2006 showed that fewer than 50 percent of people become symptom-free on antidepressants, even after trying two different medications. Furthermore, many who do respond to medication slip back into depression within a short while, despite sticking with drug treatment [7]. Because of the higher incidence of depressed post menopausal, it has a profound psychosocial impact not only on women but also, on their families, resulting in loss of self steem and withdrawal from society which may threat women's general health, well being and decrease her ability to maintain an independent life style, so it adversely affect all aspect of a woman's quality of life and general health. Accordingly, it seems to be important to find out a conservative method for alleviating the post menopausal depression. The aim of the study was to investigate the effect of aerobic exercise on post menopausal women with major depression treated by anti depressive drug.

2. MATERIAL AND METHODS

A total of 30 postmenopausal women diagnosed as having major depression according to Hamilton Depression Scale, were selected randomly from department of neuropsychiatry from Polaq Hospital in Cairo, divided into 2 equal groups (A&B). Patients in group (A) were treated by aerobic exercise and paroxetine (20 mg/day) as antidepressive drug, patients in group (B) were treated by paroxetine (20 mg/day). Their age was ranged from 45 to 50 years. Their body mass index was less 30 kg/m^2. The menstruation stopped since at least 12 months ago. Patients were excluded who exhibited chronic musculoskeletal problems such as knee joint osteoarthritis, ankle joint deformities, or lower back pain in the previous 6 months, had undergone cardiovascular and neurological disorders. The design of this study was a clinical controlled trial. Informed consent form had been signed from each patient before participating in the study. The study was done from July 2011 to April 2012. We measured the severity of depression by Hamilton Depression Scale, it is a multiple choice questionnaire that clinicians may use to rate the severity of a patient's major depression. The rate of depression was measured for each women before and after the treatment program by asking her some of questions which found in the scale and according to her answers the rate of depression was assessed as follow, mild depression(scores between 7-17), moderate

depression (scores between 18-24) and severe depression (scores of 25 or more).The treatment program consisted of aerobic exercises in the form of treadmill exercise for 9 weeks, three sessions per week, each session 30 min. divided into 5 min. warming up, 20 min. walking on treadmill and 5 min. cooling down.

The collected data was statistically analyzed by using Mann-Witney, Wilcoxon matched pairs test and descriptive statistics: mean, standard deviation and percentage. Statistical significance level of 0.05 would be used within this study.

3. RESULTS

All data had been collected and statistically analyzed and presented under the following headings;

3.1 Physical characteristics of the patients:

In this study, 30 women with major depression were divided randomly into two equal groups (A&B). Group (A): 15 women were included in this group; the mean age and BMI were (*49.33±2.69*) years and (*26.78±1.49*) Kg/m^2. Group (B): 15 women were included in this group; the mean age and BMI were (*49.6±3.01*) years and (*26.73±1.45*) Kg/m^2.There was no significant difference (*P= .8 and ,93*) between both groups (A&B) regarding their ages and BMI respectively.

3.2 Rate of depression by Hamilton depression Scale:

Group (A): There were a highly significant differences in patient's depression intensity (*P=.0001*) between mean values of patient's depression before (*18±2.1*) and after (*16.86±2.06*) the treatment program with percentage of improvement was *6.27%*. Group (B): There were a highly significant differences in patient's depression intensity (*P=.001*) between mean values of patient's depression before (*18.66±2.58*) and after (*17.66±2.16*) the treatment program with percentage of improvement was *5.35%*.When comparing between the mean values of patient's depression intensity between both groups (A&B), there was no significant difference (*P=.44*) at the beginning of the study. While there was a highly statistical significant difference (*P= 0.002*) at the end of the treatment program.

4- DISCUSSION

An earlier study showed that the transition from reproductive to non-reproductive years in women (the menopausal transition) is characterized by increased reporting of psychological, somatic, vasomotor and urogenital symptoms [8]. It is unclear why psychological symptoms occur at the menopause, and they may well have little to do with hormonal fluctuations. Life stresses at this age, as well as past problems, are an obvious causative factor [9]. Vasomotor, somatic, and psychological symptoms associated with menopause are often treated with hormone replacement therapy (HRT), but the role of non pharmacological interventions has received little attention. Two studies used the Profile of Mood States (POMS) and Women's Health Questionnaire (WHQ) to examine the effects of exercise among postmenopausal women Study 1, a comparison of exercisers and non exercisers, showed that exercisers' moods were significantly more positive than sedentary women's moods, regardless of menopausal state. Exercising women also scored lower on somatic symptoms and memory-concentration difficulties. Study 2 examined the acute effects of aerobic exercise postmenopausal with HRT and found significant enhancements in mood and reductions in reported somatic and vasomotor symptoms immediately following an aerobic class [10].

This study found that aerobic exercise with antidepressive drug may assist in the alleviation of postmenopausal depression than antidepressive drug.

Regular exercises increase levels of serotonin in the brain. Serotonin is a neurotransmitter involved in mood, sleep, libido, appetite and other functions. Exercise may also increase endorphins, which are chemicals in the brain with 'mood lifting' properties. Regular exercise also helps depression by: Increasing energy levels, helping to get a good night's sleep, providing distraction from worries and rumination, providing social support and reducing loneliness if exercise is done with other people. Increasing a sense of control and self-esteem, by taking an active role in the individual's own recovery [11].

Knubben et al [12] examined the impact of menopausal status on the ability of women to derive psychological benefits from exercise, regular exercise assessed immediately following an exercise class scored significantly lower on negative mood dimensions and higher on positive mood than did non exercise. The results suggest that the acute mood enhancing effects of exercises are maintained despite the endocrine changes associated with menopause, it is argued that encouraging menopausal women to adopt appropriate exercise patterns may assist in the alleviation of psychological distress as well as providing physical benefits.

5. CONCLUSION

It could be concluded that aerobic exercise with antidepressive drug produced substantial improvement in mood of post menopausal women with major depressive disorders than antidepressants alone.

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