

Hormone replacement combined with the prevention effect of aerobic exercise on osteoporosis of postmenopausal women

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Abstract. Objective to study the preventive effect of hormone replacement combined with exercise on osteoporosis of postmenopausal women. Methods 70 postmenopausal osteoporosis patients in our hospital obstetrics and Gynecology treated according to different therapeutic methods were divided into treatment group and contrast group, 37 cases in the treatment group were given hormone replacement combined with aerobic treatment, the comparison group 33 cases were treated with conventional calcium supplement and adjust diet treatment, research before and after the treatment, the patients in the two groups bone mineral density. Results before treatment, the treatment group the estrogen level was (85.11 ± 0.11) pmol/L, bone density of (1.02 ± 0.22) g/cm³; contrast group, the estrogen level was (85.12 ± 0.12) pmol/L, bone density of (1.03 ± 0.32) g/cm³, contrast group after treatment for bone density (0.91 ± 0.12) g/cm³, significantly lower than the treatment before; in the treatment group, the bone density was (1.12 ± 0.32) g/cm³, significantly higher than those before treatment, after treatment, two groups of bone density have obvious difference, the difference was statistically significant $P < 0.05$. Conclusion hormone replacement combined with aerobic exercise can increase the vertebral bone mineral density in postmenopausal women, significant therapeutic effect on prevention and treatment of postmenopausal osteoporosis, worthy of promotion.

Introduction

Women of a certain age ovarian function begins to decline, leading to the cessation of menstruation is called menopause. Menopausal women divided into natural menopause and artificial menopause, natural menopause which is due to the exhaustion of ovarian follicles of gonadotropin lose response, resulting in longer follicular development and secretion of estrogen, which affects the growth of the endometrium leading to menopause^[1-2]. Menopause may explain the decline of ovarian function in women, estrogen secretion, reproductive function and menstruation stops. Primary disease in postmenopausal women with osteoporosis, the most common, and postmenopausal women between 45-55 years of age, if post-menopausal women with osteoporosis will cause great harm to their bodies^[3]. So I Institute of Physical and affiliated hospital gynecology, orthopedic surgery doctor to carry out the experiment, an alternative method of aerobic exercise combined with hormone for osteoporosis in postmenopausal women as a result of prevention and treatment efficacy of research and analysis, the effect is significant, We are as follows.

Materials and Methods

General Information. Obstetrics and gynecology clinic in our hospital treated 70 cases of postmenopausal women with osteoporosis, according to the treatment were divided into treatment group and control group, the treatment group of 37 patients received hormone replacement therapy and aerobic exercise jointly, compared to only 33 cases given conventional calcium diet and adjust treatment. The selected patients had cessation of menstruation more than 12 months, were significantly lower estrogen, follicle stimulating hormone were more than equal to 45ln/L. Aged 44-53 years, mean age (47.1±1.5) years. Other patients are upset, dizziness, chest tightness, and menopausal symptoms, patients were unintentional, kidney and other serious illnesses. Levels and bone mineral density in female patients were no significant difference, the difference was not statistically significant $P>0.05$, comparable. All patients and their families were informed of the course of treatment, and signed informed consent.

Treatment. The treatment group received combined hormone replacement treatment of aerobic exercise: administering to a patient of estrogen (Xinjiang Xinzi source biopharmaceutical limited liability company, Zhunzi H20090170) taken once a day; at the same time contains a tai chi, aerobics and running and so there aerobic exercise, movement by the patient to choose according to their constitution, more than four times a week, each at least 30 minutes exercise time, heart rate, increase exercise intensity to 40% of patients with mental calm heart prevail; at the same time contain milk, drink bone soup, soy products and fresh vegetables, dietary modification, and asked patients to reduce tobacco, alcohol intake^[4]. The control group of patients given conventional calcium through diet and adjust treatment. Two groups of patients were treated with bone densitometry, treatment before and after each measurement time.

Statistical. Using SPSS18.0 statistical software for data analysis, count data using chi-square test, measurement data using the t test, calibration test to $P<0.05$ was considered statistically significant.

Results

Comparison of two groups of patients before and after treatment estrogen levels and bone mineral density. Before treatment, the treatment group estrogen levels (85.11±0.11)pmol/L, bone mineral density (1.02±0.22)g/cm³; the control group estrogen levels (85.12±0.12)pmol/L, bone mineral density (1.03±0.32)g/cm³, as shown in Table 1, Table 2.

Table 1 compare the two groups before treatment in patients with estrogen level and bone density (cases; pmol/Lg/cm³)

group	The number of cases	Estrogen levels	Bone mineral density
The treatment group	37	85.11±0.11	1.02±0.22
Control group	33	85.12±0.12	1.03±0.32
t	-	0.363	0.153
P	-	0.717	0.878

NOTE: Before treatment groups in postmenopausal women estrogen levels and bone mineral density was no significant difference, the difference was not statistically significant $P>0.05$.

Table 2 compare the two groups before treatment in patients with estrogen level and bone density (cases; pmol/L g/cm³)

group	The number of cases	Estrogen levels	Bone mineral density
The treatment group	37	87.47±0.81	1.12±0.32
Control group	33	85.71±0.42	0.91±0.12
t	-	0.371	3.490
P	-	0.726	0.000

NOTE: Before treatment groups in postmenopausal women estrogen levels and bone mineral density was no significant difference, the difference was not statistically significant P>0.05.

Comparison of before and after treatment, bone mineral density groups. Bone mineral density after treatment comparison group (0.91±0.12)g/cm³, significantly lower than before treatment; After treatment, bone mineral density (1.12±0.32)g/cm³, significantly higher than before treatment, as shown in Table 3.

Table 3 in the two groups before and after treatment in patients with bone density comparison (example; g/cm³)

group	The number of cases	Before the treatment	After treatment
The treatment group	37	1.02±0.22	1.12±0.32
Control group	33	1.03±0.32	0.91±0.12
t	-	0.153	3.551
p	-	0.878	0.000

Note: There are significant differences in bone mineral density in both groups after treatment, the difference was statistically significant P <0.05.

Conclusion

Hormone replacement by the intravenous injection of the missing hormone patients with hormone agents, in order to replace a medical treatment of patients missing hormone, when a patient is missing a particular hormone, this method can be treated [5]. Menopausal women before and after the use of hormone replacement, not only improve due to declining ovarian function lead to inadequate secretion of estrogen, so that heat waves caused by sweating, dizziness, insomnia, irritability, vaginal dryness and loss of libido and other nervous disorders based, and psychological disorders including related symptoms, while the long-term due to lack of sex hormones and may lead to cardiovascular disease, bone loose disease and senile dementia and other diseases play a preventive role [6-7]. Sports human body in sufficient oxygen is called aerobic exercise carried out that the human body needs oxygen to the body during exercise inhaled equal to meet the requirements of physical balance. Measure of aerobic exercise heart rate, heart rate when the body is maintained at 150 beats/minute is aerobic exercise, because the blood can supply enough oxygen myocardium [8-9]. Therefore, it is characterized by low intensity, rhythm, duration longer. This

exercise can make the body of oxygen combustion of sugar and body fat can be consumed, so as to enhance and improve heart and lung function, can effectively prevent osteoporosis, psychological adjustment and mental state.

Related literature suggests that estrogen levels play a decisive factor on bone density, after this report postmenopausal women estrogen levels while low bone density was significantly reduced, consistent with the results of the literature^[2-3]. Before treatment group received combined hormone replacement after aerobic exercise BMD before treatment (1.02 ± 0.22) g/cm³ to (1.12 ± 0.32)g/cm³, while the control group of patients not given hormone replacement, bone density by the treating (1.03 ± 0.32)g/cm³ down to (0.91 ± 0.12)g/cm³, there are significant differences between the treatment group, the difference was statistically significant $P<0.05$. Thus, the comparison group received calcium alone in postmenopausal women with osteoporosis and dietary adjustments can not play a role in prevention and treatment, the treatment group received combined hormone replacement aerobic exercise can effectively prevent and treat osteoporosis in postmenopausal women^[10].

In summary, the combination of aerobic exercise on hormone replacement in postmenopausal women with osteoporosis prevention plays a decisive factor in its prevention and treatment effect is significant, it is worth promoting.

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