One Year Outdoor and Daytime Aerobic Dance Practice Increased Serum 25(OH)D3 and PTH, but Decreased FSH Level of Postmenopausal Women

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Objective Vitamin D deficiency is widespread in postmenopausal women. It is verified that Vitamin D3 supplementation intake can improve the Vitamin D3 level of those Vitamin D deficiency patients. In addition to the exogenous intake, whether aerobic exercise plus sunshine could affect vitamin D level in postmenopausal women gained our attention.

Methods 16 postmenopausal women in Shanghai attended this test. They voluntarily participated in a one year aerobics plan, practicing Chinese traditional dance outdoor under sunshine for one hour from 9:30-10:30 am each day. Before and after one year practice, serum 25(OH)D, 25(OH)D3 and estradiol E2, follicle stimulating hormone (FSH), luteinizing hormone (LH), parathyroid hormone (PTH) of all participants were analyzed.

Results Before aerobics practice, serum 25(OH)D and 25(OH)D3 levels were 16.30±4.12(ng/ml) and 15.60±3.79(ng/ml). After one year practice, the data were significantly increased 19.50% (P=0.002) and 18.78% (P=0.002), separately. Before aerobics practice, the state of 25(OH)D level of 13 women was inadequacy (≤20.0ng/ml), 3 women was in lack status (20-30ng/ml). After one year practice, 9 women was inadequacy, 7 women in lack. The value of the chi square test was 4.747(P=0.029). After one year practice, serum PTH significantly increased, while FSH significantly decreased. E2 and LH had no significant variance before and after one year of aerobics practice.

Conclusions One year aerobics practice under sunshine could increase serum 25(OH)D level, and affected estrogen levels variably in postmenopausal women.