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Comparative effect of weight bearing and non weight bearing aerobic training program on bone mineral density in post-menopausal women with type 1 osteoporosis

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Background: Osteoporosis is a progressive bone disease that is characterized by decrease in bone mass and density. The form of osteoporosis is most common in women after menopause which is referred as primary type 1 or postmenopausal osteoporosis. The World Health Organization reports 30% of postmenopausal females have osteoporosis. Studies provide evidence that weight bearing aerobic exercise can slow the rate of loss or increase BMD in postmenopausal women, whereas in some studies, non weight bearing aerobic exercise showed a significantly increased bone mass. So the purpose of this study was to compare the effect of weight bearing and non weight bearing aerobic training program to increase bone mineral density (BMD in lumbar spine and trochanter of femur) in post-menopausal women with type 1 osteoporosis.

Methods: 62 participants were randomly divided in equal numbers in 2 groups. Group 1 (n=31) received weight bearing aerobic program and group 2 (n=31) received non weight bearing aerobic training program. Exercise was performed three times per week for 6 months, BMD were measured at baseline, at the 4th week, 8th week and after 6 months of program.

Results: Results of this study show improved bone density in both groups ($p \leq 0.05$), but weight bearing aerobic training (group 1) showed more improvement of bone density in lumbar spine and femur trochanter than non weight bearing aerobic training group (group-2) in post-menopausal women with type 1 osteoporosis. This suggests that weight bearing aerobic training helps to increase bone mass density compared to aerobic training program in post-menopausal women with type 1 osteoporosis.

Conclusion: This study concluded that weight bearing aerobic training program helps to increase bone mineral density in post-menopausal women with type 1 osteoporosis.

Biography

Gopal Nambi has completed his PhD in Physiotherapy from Gujarat University, Ahmedabad, India and Post graduation in Musculoskeletal Physiotherapy from Rajiv Gandhi University of Health Sciences, Bangalore, Karnataka, India. He also did his MBA in Hospital Administration and Human Resource Management from Adam Smith University of America. He is the life member of Indian Association of Physiotherapy (MIAP), Irish Society of Chartered Physiotherapy (MISCP) and Federation of Indian Manual Therapist (MFIMT). He is the Principal and Head of C.U. Shah Physiotherapy College, Surendranagar, Gujarat, India. He is the examiner board member of more than ten reputed universities in India. He has published more than 20 papers in reputed international journals and has been serving as reviewer of the same.

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