A Study of Risk Factors: Comparison between Osteoporosis and Osteopenia in the District of Patiala

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Abstract

The purpose of the study was to compare the risk factors of Osteoporosis and Osteopenia based on age, sex, education, address, occupation, BMI, Muscle Strength, VAS, POMA, Physical activity, Diet and Medical status. A total of 396 individual were assessed for Bone mineral density (BMD). Out of these 22 Osteoporotic subjects and 22 Osteopenic subjects were selected randomly with Inclusion Criteria: Subject of both sexes, age more than 40 years, BMD suggestive of Osteoporosis and Osteopenia, Subjects who were able to walk with or without walking aid and Exclusion Criteria: Individuals who were on medication known to influence bone metabolism, Individuals undergone prior balance training, Hemiplegia, Parkinson's diseases, Polyneuropathy, Grade 4 Osteo-arthritis, People suffering from acute illness and Non-ambulatory subject. Data was collected individually which was later tabulated under 2 major groups (Osteoporosis and Osteopenia). The mean values for various risk factors namely age, sex, education, social class, BMI, total muscle strength, POMA, physical activity, dietary calcium, vitamin D & Phosphorus, Caffeine, alcohol, steroids and medical status were compared between osteoporosis and osteopenia by using paired t-test. A highly significant value was found for Bone mineral density ($t = 13.030$, $p = .000$) and use of steroids ($t = -8.450$, $p = .000$). The study highlights the crucial role played by steroids. However, this study did not reveal any significant difference for other risk factors between Osteoporosis and Osteopenia. This suggests that both Osteoporotic and Osteopenic subjects have comparable risk factors, though Osteopenic subjects have better bone mineral density than Osteoporotic subjects. It is concluded that people with use of steroids are at a higher risk to develop Osteoporosis rather than Osteopenia following which their Bone mineral density should be assessed specifically.

Keywords: Osteoporosis, Osteopenia, Bone Mineral Density

INTRODUCTION

Osteoporosis is a systemic skeletal disease characterised by low bone mass and micro-architectural deterioration of bone tissue that leads to an increased fractures susceptibility *(Faulkner et al, 1993)*. The resulting low energy fractures are a major health concern, causing great suffering to those afflicted and placing a heavy burden on the society and health care system *(Johnell & Kani, 2005)*. This silently progressive metabolic bone disease is widely prevalent in India, and Osteoporotic fractures are the common cause of morbidity and mortality in adult Indian men and women *(Gupta, 1996)*.

Direct measurements of bone density in the clinical relevant sites are necessary to determine whether the individual is suffering from osteoporosis or not. There are many kinds of equipments available now-a-days. In the present study bone densitometer named 'Osteopro' has been used to check bone