SPINE REHABILITATION EXERCISE AS AN ADJUVANT TO BIPHOSPHONATES IN THE TREATMENT OF OSTEOPOROSIS

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Background:
Anti-resorptive agents such as Alendronate remains a mainstay treatment for established osteoporosis in Malaysia. Non pharmacological options such as physical exercises has been reported to improve strength and reduce bone loss in osteoporotic patients.

Objective:
We investigated the effect of a two-year spine rehabilitation program among osteoporotic patients on bisphosphonates based on lumbar bone mineral density (BMD) values.

Methods:
One hundred fifteen patients (mean age 55±4 years) with primary osteoporosis were recruited. All patients were started on standardized pharmacotherapy of Alendronate Sodium 70mg & Cholecalciferol 5600IU (Fosamax-Plus) and Calcium Lactate 300mg BD. Baseline BMD values were recorded. Patients were randomly divided into 2 groups - Exercise Group n=69 (EG) and Control Group n=46 (CG). EG were subjected with pharmacotherapy and structured spine rehabilitative exercise under supervision of qualified physiotherapist. CG subjects were on pharmacotherapy alone. BMD was reassessed for all subjects in both groups 2 years post treatment using the same machine & technician. Statistical test was performed using SPSS version 21.0. Fracture risk was determined using McNemar's test.

Results:
EG revealed statistically significant difference in the proportion of fracture risk pre and post-intervention ($p < 0.05$). In contrast, control group (CG) showed no statistical difference in the proportion of fracture risk pre- and post-intervention ($p = 0.625$).

Conclusion:
Spine rehabilitation significantly reduces fracture risk in combination with pharmacotherapy. We advocate rehabilitation exercise as an adjuvant to pharmacotherapy in managing primary osteoporotic patients to achieve reduced risk of fracture by increasing bone strength. This method is economical and effective.