

# Correlation between Bone Turnover Markers and Bisphosphonates Treatment in Postmenopausal Osteoporosis

**Adnan Khan, Muhammad Hanif, Akhtar Ahmed, Salman Habib and Shahid Kamal**

Karachi Institute of Radiotherapy and Nuclear Medicine (KIRAN)

## **Abstract**

**Objective:** To find out the significance of bone turnover markers in management of osteoporotic patients and correlation to bisphosphonate treatments.

**Design:** Comparative, prospective, managerial

**Setting:** Karachi Institute of Radiotherapy and Nuclear Medicine (KIRAN), Karachi.

**Material and Methods:** A total of 180 post-menopausal women were selected for the study by taking the verbal consent. Test patients were divided into five groups of 30 patients each on the basis of medicines they receive. Bisphosphonates (alendronates and risedronates) were prescribed to the patients under different brand names as fosamax, drate, osto, dronate and actonel. Serum osteocalcin, alkaline phosphatase and c-telopeptidase were selected as bone turnover markers and were assessed quarterly to find out the correlation between these markers and different treatment groups.

**Results:** The selected bone turnover markers i.e, alkaline phosphatase, osteocalcin & c-telopeptide were found to drop continuously at different rates in all patients undergoing treatment while in controls these markers remained same with no significant changes throughout the year. The maximum fraction drop was found in telopeptide levels and minimum drop in alkaline phosphatase, while osteocalcin levels were lying in between.