Correlation between of serum 25-hydroxyvitamin D (25(OH)D) level and bone mineral density (BMD) change in postmenopausal women with early breast cancer receiving aromatase inhibitors

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Background: Aromatase inhibitors (AIs) increase bone loss in postmenopausal women with hormonal positive breast cancer. Most clinical practice guidelines suggest vitamin D and calcium supplementation. We conducted this study to explore the correlation between serum 25(OH)D and BMD change in postmenopausal women with hormone receptor positive early breast cancer receiving AIs as an adjuvant hormonal therapy.

Method: We enrolled postmenopausal patients with hormone receptor positive early breast cancer receiving AIs from January 2014 through December 2016 at the King Chulalongkorn Memorial Hospital. Serum 25(OH)D level and BMD study were performed during second year of AIs.

Results: The mean serum 25(OH)D was 24.3 ng/mL, standard deviation (SD) 7.4 ng/mL. Despite of vitamin D supplementation, 17(26%) and 33 (52%) patients had vitamin D deficiency and insufficiency, respectively. BMD change of lumbar spine, hip, femoral neck and radius in all patients were -1.42 ±5.51 %, -1.92±3.91%, -2.25±3.69 % and -3.04 ± 4.51 %, respectively. Differences between the mean BMD change of patients with serum 25(OH)D <30 ng/mL and ≥30 ng/mL were not statistically significant. One fifth of patients had significant BMD change, similarly between the two groups were not statistically significant. One fifth of patients had significant BMD change, similarly between the two groups.

Conclusions: From our findings, serum 25(OH)D level did not have any correlation to short-term BMD change in postmenopausal patients with early breast cancer receiving AIs.