

## Serum 25-Hydroxyvitamin D Levels in Korean Breast Cancer Patients

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**Abstract :** Background: Circulating 25-hydroxyvitamin D (25(OH)D) levels has been considered to be inversely related to breast cancer development, recurrence risk, and mortality. Mean vitamin D levels in Korean population is lower than western countries due to higher incidence of lactose intolerance and lower exposure to sunlight. The purpose of this study was to assess incidence of 25(OH)D deficiency at diagnosis and after adjuvant chemotherapy and to investigate the correlation serum 25(OH)D levels with clinicopathologic features. Methods: From December 2011 to October 2012, 280 breast cancer patients seen at a single tertiary cancer center were enrolled. Serum 25(OH)D was measured at the time of surgery and after completion of adjuvant chemotherapy. Statistical analyses used chi-square test, Fisher's exact test, t-test, and ANOVA. Results: Mean serum 25(OH)D was 18.5 ng/ml. The 25(OH)D levels were deficient (<20 ng/ml) in 190 patients (67.9%), insufficient (20-29 ng/ml) in 51 patients(18.2%), and sufficient (30-150 ng/ml) in 39 patients(13.9%). A notable decrease in 25(OH)D concentration was observed( $p < 0.001$ ) after chemotherapy but was not related to chemotherapy regimens. It was found significant lower 25(OH)D levels at winter season(from October to March,  $p = 0.030$ ). Subjects with invasive carcinoma (IDC or ILC) had significantly lower circulating levels of 25(OH)D than those with ductal carcinoma in situ(DCIS) ( $p = 0.010$ ). Patients with larger tumor size tends to have lower serum 25(OH)D but there were no statistical significance. Conclusions: Most of the breast cancer patients showed deficient or insufficient serum 25(OH)D concentration. Incidence of vitamin D deficiency was higher in invasive carcinoma than DCIS. Serum 25(OH)D levels were decreased after chemotherapy. Consideration should be given to the supplement of vitamin D to those patients.

**Keywords :** breast neoplasms, vitamin D, Korean population, breast cancer

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