Vitamin D and biphosphonate in neoadjuvant advanced breast cancer

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**Purpose:** Vitamin D and calcium deficiency is associated with increased breast cancer risk and decreased breast cancer survival. The purpose of this study is to determine whether the addition of vitamin D and Zoledronic Acid (ZA) to Neoadjuvant Chemotherapy (NACT) gives complete histological responses. We report a prospective evaluation comparing complete pathological response between different biomolecular sub-groups.

**Patients & Methods:** The study included 431 women with stages III locally advanced breast cancer who received neoadjuvant chemotherapy and Zoledronic acid. All patients were prescribed vitamin D3 (cholecalciferol) 400 IU and calcium carbonate 1,000 mg daily. The main objective is the complete histologic response. Secondary endpoints were the overall survival of patients targeted by the study.

**Results:** Histologic complete response with Zoledronic acid and vit D was 40.13%. the higher in the subgroup Her2/luminal (RH±Her2+) and under Her2+ (HR-Her2+) and the lowest rate was observed in the triple negative group as classified by Sataloff, overall survival was 45.77 months for subgroups (Her2/luminal and in Her2+ group) vs. 44.11 months for triple negative group.

**Conclusion:** Our study confirms the potential protective effects in vitamin D in neoadjuvant breast cancer.

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