Sahar S Nasser et al., J Clin Trials 2017, 7:3 (Suppl)
http://dx.doi.org/10.4172/2167-0870-C1-013

Effect of Denosumab versus Zoledronic acid on calcium levels in cancer patients with bone metastasis: An observational retrospective cohort study

Sahar S Nasser, Arwa O Sahal, Anas A Hamad and **Shereen A ElAzzazy**
Hamad Medical Corporation, Qatar

Background: Bone-targeting agents (BTA) like Zoledronic acid (ZA) and Denosumab (DE) are approved for prevention of skeletal-related events (SREs) in patients with Bone Metastases (BM) including hypercalcemia of malignancy (HCM). Hypocalcemia has been observed with both ZA and DE. However, Studies showed a higher incidence of hypocalcemia with Denosumab. International guidelines do not favor one BTA over the other. Due to the differences in patients' characteristics and treatment related factors; hypocalcemia incidence might differ in varying cancer settings.

Aim: The primary objective of this study is to identify the incidence of hypercalcemia and hypocalcemia in ZA and DE groups and to identify the correlation between calcium supplement and calcium level control.

Methods: An observational retrospective cohort study, conducted by reviewing patients' electronic records, laboratory and medication reports from 1st August 2015 to 31st July 2016. Adult Cancer patients diagnosed with BM secondary to a solid tumor or multiple myelomas and receiving either ZA or DE were included. Other indications for BTA were excluded. BTA administration visits were collected, evaluated and analyzed.

Results: A total of 271 patients (1367 visits) were included in our study. Over incidence of hypocalcemia in DE group compared to ZA was (4.1% vs. 3%, OR=0.72, CI 95% [0.43-1.19]). Hypercalcemia was reported in both groups (3.5% vs. 5.3% respectively, CI 95% [0.97-2.4]). Breast cancer was the most common malignancy associated with hypocalcemia (70%) followed by (10%) in both prostate cancer and multiple myelomas. Patients received calcium supplement were 23% less likely to develop hypocalcemia (RR=0.77, CI 95% [0.48-1.23]).

Conclusion: Despite hypocalcemia was common in DE group, it was not statistically significant. Adequate calcium intake substantially reduces the risk of hypocalcemia. Our results highlight the importance of preventing hyper and hypocalcemia upon BTAs initiation and during treatment by regular monitoring of calcium levels and providing calcium supplements accordingly.

snasser1@hamad.qa

Notes: