ONJ UPDATE 2024

Torino, 24 febbraio 2024

Abstract Submission FORM

MRONJ: DENOSUMAB ROLE IN CANCER PATIENTS. A REGIONAL NETWORK EXPERIENCE

SECTION: *1B*

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Background Denosumab (DMAb) is a human monoclonal antibody that binds and inhibits RANKL, a potent cytokine that stimulates osteoclast differentiation, proliferation and action. DMAb is considered a relevant option in the treatment of osteoporosis and bone metastases. Its mechanism of action is remarkably different from bisphosphonates (BPs) because it has no affinity for bone mineral. Literature data show that the DMAb is potentially more active and more comfortable (subcutaneous injection) than zoledronic acid, but DMAb-related risk for MRONJ is slightly higher than that one after zoledronic acid, at least at short term evaluation (2-3 years).[1]
The aim of this work is to examine retrospectively the Medication-Related Osteonecrosis of the Jaw (MRONJ) cases observed at main hospitals in Piedmont and Valle D'Aosta territory, looking for the role of DMAb (administered at dose of 120 mg every 4 weeks) in patients with solid cancer and bone metastases.

Patients and methods Data were retrospectively collected from different hospitals of two regions in a time spam of 9 years (from January 2014 to December 2022). We examined; sex, age at the time of diagnosis of ONJ, main disease for which DMAb and other drugs were prescribed, and type of treatment received.

Results Data of 395 patients with MRONJ were collected, of which 265 were female and 130 were male.
Regarding the treatment received:

- 96 (24%) patients were treated with DMAb alone;
- 2 (1%) with DMAb and an antiangiogenetic agent;
- 40 (10%) patients had been switched from BPs to DMAb treatment (39 patients received zoledronate as first therapy; 1 patient received risedronate and then DMAb);
- the remaining 257 patients (65%) were treated with BPs and/or antiangiogenetic agents without DMAb treatment.

Evaluating the sample who received DMAb only, 66 patients were female and 30 were male. The average age at diagnosis of MRONJ was 66 years (SD 11.43; range 42-86) for females and 72 years (SD 9.8; range 50-88) for males. Underlying disease was reported as breast cancer in 60 (63%) patients, prostate cancer in 19 (20%), lung cancer in 8 (8%), renal cancer in 4 (4%) and other tumors in 5 (5%).

Conclusions
DMAb has become a diffuse alternative to BPs (zoledronic acid) in supportive care of patients with bone metastases from solid cancers. Furthermore, many patients were switched from BPs to DMAb after introduction of DMAb in Europe (on 2011).
As in other reports[2], we registered a relevant number of MRONJ cases in patients receiving DMAb as front-line treatment and in patients switched from zoledronic acid to DMAb.
However, studies of large populations treated with/without DMAb (developing and not developing MRONJ) are needed to ascertain the MRONJ risk related to several treatment types, along years.

*On behalf of oral care centers of: Turin, Novara, Alessandria, Asti, Cuneo, Orbassano, Aosta, Casale Monferrato, Vercelli

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1. *Bedogni et al Italian position paper (SIPMO-SICMF) on medication-related osteonecrosis of the jaw (MRONJ). Oral Disease 2024 at https://doi.org/10.1111/odi.14887*
2. *Loyson et al Incidence of osteonecrosis of the jaw in patients with bone metastases treated sequentially with bisphosphonates and denosumab . Acta Clin Belg. 2018 Apr;73(2):100-109. At https://doi.org/10.1080/17843286.2017.1348001*

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