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Denosumab related osteonecrosis of the jaw: an emergent and potentially complex bone and joint infection

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Aim

Osteonecrosis of the jaw is a known complication of antiresorptive treatment, like bisphosphonate. More recently, denosumab was validated as a treatment in the osteoporosis and bone metastasis. Its mechanism is different from bisphosphonate but induces also a decrease of bone resorption and a risk of osteonecrosis of the jaw. In case of treatment failure by a dental surgeon or in complex cases, patients may be addressed to a bone and join infection reference center.

The aim of this study is to analyze microbiology, as well as surgical and medical care of patients who present denosumab related osteonecrosis of the jaw (DRONJ) and who were treated in a bone and join reference center.

Method

All patients managed in our reference center between January 2013 and December 2018 for a DRONJ were included in our retrospective observational monocentric cohort.

Results

Twelve patients (median age 71; ratio W/M 0.71) with a DRONJ (metastatic cancer, n=10 (83%)) in grade 3 (n=5), 2 (n=4), 1 (n=3) were included. Only 3 patients (25%) had a dental health control before initiating the treatment by denosumab and 7 patients (58%) had a dental surgical procedure done before the DRONJ. Eleven patients had a bone exposure (including 5 with a multiple exposure), treated at least with a scaling and mucosal closure at the same time. The median follow-up was 6 months. Eight patients were cured after a medico-surgical care and a median duration of antibiotics of 97 days (including 28.5 days in intravenous). One patient required a suppressive antibiotic treatment, 1 relapsed at distance of the treatment and 2 were still under curative treatment.

Population	
Number of patients	12
Age (median)	71
Ratio W/M	0,7
Osteosynthesis	1
Dénosumab	
Accumulated dose (mg)	1350
Duration (month)	12.5
Indication for neoplasia	11

Table 1 : Population's characteristics

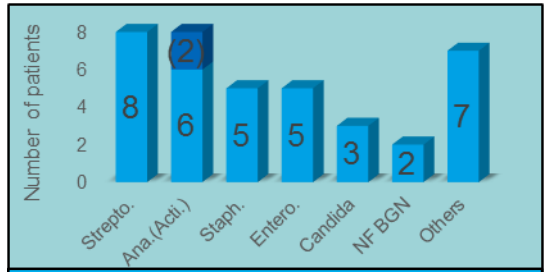

Figure 1 : Patients' microbiology characteristics

Strepto.: Streptococcus spp., Ana.: anaerobia, Acti.: Actinomyces, Staph.: Staphylococcus spp., Entero.: Enterobacteria, NF BGN : non fermentative bacille gram negative

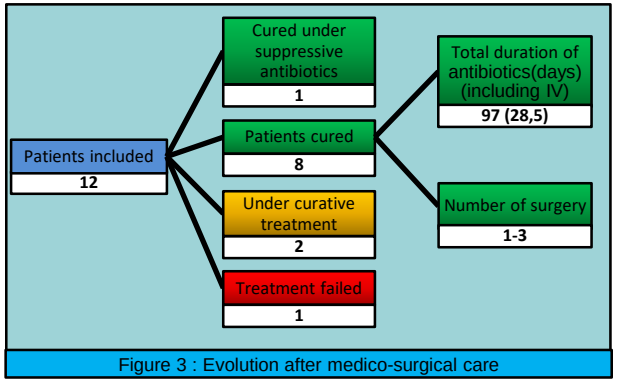

Figure 3 : Evolution after medico-surgical care

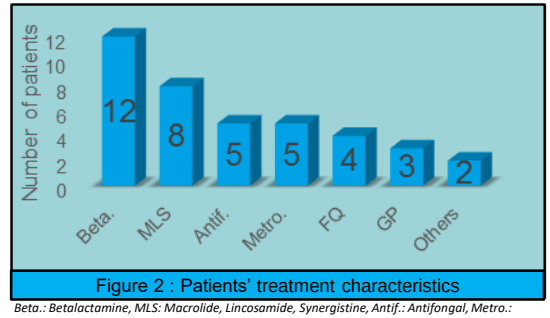

Figure 2 : Patients' treatment characteristics

Beta.: Betalactamine, MLS: Macrolide, Lincosamide, Synergistine, Antif.: Antifongal, Metro.: Metronidazole, FQ: Fluoroquinolone, GP: Glycopeptide

Conclusions

DRONJ is a potential complex bone and join infection, for which some patients could benefit from medical care in a reference center.

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