

# ONJ UPDATE 2024

## Torino, 24 febbraio 2024

### Abstract Submission FORM

THE INTEREST OF MEDICATION-RELATED OSTEONECROSIS OF THE JAW (MRONJ) ACROSS THE BIBLIOGRAPHIC UNIVERSE: A SHORT ANALYSIS

SECTION: 5C

AUTHORS: Contrassegnare SPEAKER con “\*”

\*Federica Viazzi<sup>1</sup>, Paola Cosola<sup>1</sup>, Mariateresa Dacquino<sup>2</sup>, Denise Gatti<sup>3</sup>, Annunziata Lettierio<sup>2</sup>, Vittorio Fusco<sup>2</sup>, and Antonio Maconi<sup>2</sup>

#### AFFILIATION:

1. Biomedical library, Research and Innovation Department DAIRI- Azienda Ospedaliera-Universitaria “SS Antonio e Biagio e Cesare Arrigo”, Alessandria
2. Research and Innovation Department DAIRI- Azienda Ospedaliera-Universitaria “SS Antonio e Biagio e Cesare Arrigo”, Alessandria
3. Unità Ricerca Professioni Sanitarie, Research and Innovation Department DAIRI- Azienda Ospedaliera-Universitaria “SS Antonio e Biagio e Cesare Arrigo”, Alessandria

#### Background.

Medication Related Osteonecrosis of the Jaw (MRONJ) is a side effect of drugs administered to patients with cancer, myeloma, and non-malignant diseases (osteoporosis, rheumatic and autoimmune disorders, etc), reported since 2003. The first article about bisphosphonate-related osteonecrosis of the jaw was published in 2003 by an American maxillofacial surgeon<sup>1</sup>, but reports rapidly increased worldwide, mostly with terms Osteonecrosis of (the) Jaw(s) (acronym ONJ) and Bisphosphonate-Related ONJ (acronym BRONJ).

Since 2014 the American Association of Oral and Maxillofacial Surgeons (AAOMS) released a position paper adopting MRONJ due to evidence of cases related to other drugs (denosumab, antiangiogenic agents, etc).

#### Methods.

We searched in PubMed, Embase and Cochrane database. In each database we ran four independent search<sup>2</sup>; the keywords were, for the first: Osteonecrosis, jaw\*, mandible, maxilla, all terms searched in title and abstract [tiab]; for the second: ("medication related osteonecrosis jaw"[tiab:~3]) OR ("medication related osteonecrosis jaws"[tiab:~3]); for the third were (mronj) OR (mronj[tiab]) and the last were (((("mronj"[tiab]) OR ("mronj"[all])) OR (((("medication related osteonecrosis"[all])) OR ("medication related osteonecrosis"[tiab]) AND ("jaw"[tiab]) OR ("jaw"[all])) OR ("jaws"[all]) OR ("jaw"[tiab])))).

All searches are up to 7 February 2024.

We also examined Prospero repository for the ongoing reviews.

We investigated the documents of patient education on MSD Manuals and Medline Plus.

#### Results.

In PubMed the widest search, with osteonecrosis in “all fields” yielded 68902 results versus 1832 from the broader search in Embase (Elsevier); this big difference is maybe a bias due to the differences of the retrieval algorithm or to the efficiency of Boolean operators. One Cochrane review was published.

From 2014 to 2024, 986 articles were published. They included the official acronym “MRONJ”; in the first year 9 articles only on dentistry / maxillofacial surgery journals were published. The interest in MRONJ increased exponentially until 2021 (210 articles), it decreased in 2022 (165 articles) and grew a little in 2023 (172).

The ongoing reviews registered in Prospero data base are 64 from 2016 to 2024, including 2 Cochrane protocols.

We found a conceptual shortfall in NLM MeSH thesaurus; the NLM authority is “Bisphosphonate-Associated Osteonecrosis of the Jaw” but the bisphosphonate isn’t the only cause of osteonecrosis (e.g., zoledronic acid, pamidronate, alendronate and others bisphosphonates, denosumab, sunitinib, bevacizumab and other antiangiogenic agents). The heading “Osteonecrosis”, introduced in 1977, considers “medication related osteonecrosis” only as a subheading (drug therapy)<sup>3</sup>.

In MSD manual online the MRONJ topic has been updated in March 2023 whereas in Medline Plus we found, coherently with MeSH thesaurus, only the “Bisphosphonate Therapy (and Osteonecrosis of the Jaw)” topic.

#### Conclusions.

The bibliographic study and especially the analysis of MeSH thesaurus call attention to a disproportion of consideration between MRONJ and osteonecrosis and other bone diseases.

#### REFERENCES:

1. MARX RE. *Pamidronate (Aredia) and zoledronate (Zometa) induced avascular necrosis of the jaws: a growing epidemic*. J Oral Maxillofac Surg. 2003 Sep;61(9):1115-7. doi: 10.1016/s0278-2391(03)00720-1. PMID: 12966493.
2. CRONIN P, RYAN F. *Coughlan M. Undertaking a literature review: a step-by-step approach*. Br J Nurs. 2008 Jan 10-23;17(1):38-43. doi: 10.12968/bjon.2008.17.1.28059. PMID: 18399395.
3. Osteonecrosis <<https://www.ncbi.nlm.nih.gov/mesh/68010020>>