FOLLOW-UP AND TREATMENT OF THE 2023 MRONJ PATIENTS REFERRED TO SANT'ANDREA HOSPITAL, VERCELLI

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Background. Medication-related osteonecrosis of the jaw (MRONJ) is a severe adverse condition primarily associated with antiresorptive and antiangiogenic drugs, affecting the maxillofacial region. It is characterized by the presence of necrotic bone in the maxilla or mandible that fails to heal over a period of eight weeks in patients exposed to these medications, without any history of radiation therapy to the craniofacial region[1]. The pathophysiology of MRONJ remains complex, involving inhibition of bone remodeling, angiogenesis disruption, and immune modulation. Early diagnosis and interdisciplinary management are crucial for improving outcomes.

This work aims to report the activities conducted at the SCDU of Odontostomatology at Sant'Andrea Hospital in Vercelli regarding patients scheduled to begin or already undergoing antiresorptive drugs therapy. Since 2018, the clinic has been engaged in the prevention and treatment of osteonecrosis caused by bone antiresorptives. Agreements were made with oncology and rheumatology departments in order to screen patients who are about to start or are already undergoing antiresorptive therapy.

Patients and methods. In 2023, a total of 352 patients regarding MRONJ prevention and follow up have been referred to the clinic, 254 of these have accessed for the first time, 98 were known patients referring for follow-up. 196 patients were already undergoing antiresorptive drugs and 156 were patients that needed to start antiresorptive therapy. 180 of these were oncologic patients, and 172 had osteoporosis or other diagnoses. Out of these, 11 patients developed osteonecrosis. All patients were enrolled in a biannual dental hygiene control program, which included the compilation of a periodontal record with the measurement of indices such as PCR (Plaque Control Record), GBI (Gingival Bleeding Index), OHI-S (Oral Hygiene Index Simplified), and WTCI (Winkel Tongue Coating Index).

Results. This consistent monitoring showed improvement in all indices, particularly: PCR from 67.48% to 46.66%, GBI from 10.50% to 7.80%, OHI-S from 2.60 to 1.66, and WTCI from 6.18 to 5.73.

Among the 11 patients that developed osteonecrosis of the jaws 8 have been successfully treated and 3 referred to the SCDU of Maxillofacial Surgery in Novara.

The diagnostic classification, therapy, and follow-up were established according to the guidelines drafted by the Italian Society of Oral Pathology and Medicine (SIPMO) and the Italian Society of Maxillofacial Surgery (SICMF) in 2020.

Conclusions. Despite the established network and the growing importance of MRONJ, it is not uncommon to encounter patients who have already begun treatment with bone antiresorptives and have evident oral foci needing treatment. Our aim is to focus on the importance of prevention and early diagnosis, in order to reduce as possible complications such as MRONJ.

References

1. Campisi G, Bedogni A. et A.l Medication-Related Osteonecrosis of Jaws (MRONJ) Prevention and Diagnosis: Italian Consensus Update 2020. Int J Environ Res Public Health. 2020 Aug 18;17(16):5998. doi: 10.3390/ijerph17165998. PMID: 32824826; PMCID: PMC7460511.

Doi: 10.19256/abstract.ONJ.03.2024

DENTAL CHECK-UPS AND THERAPY FOR BONE METASTASES: INFORMATION AND INVOLVMENT OF CANCER PATIENTS

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Background. Patients with bone metastases treated with denosumab or bisphosphonates should be informed about dental side effects and the need for appropriate dental check-ups. However, there are few data on the informations received by patients on this topic.

Patients and methods. ROPI (Rete Oncologica Pazienti Italia) conducted from 02/2022 to 08/2022 an anonymous survey (29 questions) in patients with bone metastases from solid tumors to assess the degree of information received about bone metastases, skeletal complications, specific therapy for bone metastases and dental check-ups.

Results. Analysis of 351 questionnaires showed that more than 70% of patients claimed to have been "fairly/well" informed about bone metastases and skeletal complications. More than 80% of patients reported being on specific treatment for bone metastases: 48% with denosumab and 46% with zoledronic acid.

Some questions assessed dental check-ups before starting therapy for bone metastases and during therapy and the frequency. On question "If you are undergoing therapy for bone metastases, did you have an X-ray orthopanoramic and a dental examination before starting therapy?", 93% of the 316 patients stated that they did.

On question "Have you received information regarding periodic dental check-ups to be carried out during therapy for bone metastases?", 78% of 334 responding patients said they had received information.

On question "If you are undergoing treatment for bone metastases, do you have regular dental check-ups?", 72% of 311 responding patients stated that they perform periodic dental check-ups during therapy for bone metastases.

Table 1 shows the percentages of metastatic patients who reported performing/not performing periodic dental check-ups in relation to patient age, cancer, and type of drug administered for bone metastases. The analysis of these data showed that periodic dental check-ups were performed during therapy for bone metastases mainly by younger patients (92%), breast cancer patients (77%) and patients on denosumab therapy (85%). In contrast, fewer periodic procedures were performed by patients ≥60 years of age (65%), patients with prostate cancer (52%) and patients on zoledronic acid therapy (62%).

On question "If you have regular dental check-ups, how often do you do them?", 69% of 221 responding patients stated that they undergo periodic dental check-ups every 3-6 months.

Periodic dental check-ups	YES	NO
All patients (N = 311)	72%	28%
Age		
18-39 years	92%	8%
40-59 years	78%	22%
≥60 years	65%	35%
Cancer		
Breast	77%	23%
Prostate	52%	48%
Lung	60%	40%
Other	68%	32%
Drug for bone metastases		
Zoledronic acid	62%	38%
Denosumab	85%	15%
Other bisphosphonates	75%	25%

Conclusions. The results of this survey showed that the majority of patients received correct information also on dental check-ups before and during therapy for bone metastases with consequent possibility of reducing dental complications.

THE PREVENTION OF MEDICATION-RELATED OSTEONECROSIS OF THE JAWS: OUR EXPERIENCE

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Background. Dentists have a pivotal part to play in minimizing patients' risk of development of MRONJ. Studies have shown that the risk of developing the condition can be substantially reduced if patients are assessed by a dental professional and preventive measures are taken. The duration of low-dose bisphosphonate or denosumab exposure beyond which the risk of development of MRONJ is high varies among studies. High-risk patients that are going to be prescribed antiresorptive drugs for osteoporotic or cancer indication should undergo a thorough dental assessment, including dental radiography, before treatment with bisphosphonates or denosumab is initiated: in particular, they should undergo an oral examination and appropriate preventive dentistry, including regular professional oral hygiene follow up, together with oral hygiene oral instructions and motivation. Consequently, the patient should be referred to a dentist by the treating physician.

The aim of this communication is to present our experience in the prevention of MRONJ by the implemented diagnostic - therapeutic - assistential pathways for patients that are going to assume antiresorptive drugs in Novara University Hospital.

Patients and methods. The clinical diagnostic - therapeutic - assistential pathways for patients that are going to assume antiresorptive drugs in Novara University Hospital are presented. The flow charts of cancer treatment-induced bone loss (CTIBL) pathway and bone metastasis pathways will be described. A revision of the study population of patients that are going to assume antiresorptive drugs in a single University third level center was performed, since January 1st 2017 to today. The medical charts were analyzed and the following data were recorded for each patient: gender, age, diagnosis, prescribed antiresorptive drug, treatment, outcome.

Results. During the considered time frame, 523 patients underwent a preventive dental assessment, that was followed by a regular professional oral hygiene follow up, the extraction of compromised teeth, and conservative dental procedures for dental cavities.

Conclusions. Minimizing the risk of MRONJ is crucial, both to prevent the pain and discomfort the disease can cause patients and to increase the benefit of treatment with antiresorptive drugs. By the assessment, the prophylactic dental treatment, and the close multiprofessional teamwork, the risk of developing this condition may be decreased. It is fundamental that dentists are able to identify patients at risk and that they are familiar with the required prophylactic treatment recommendations.

References

1. Nicolatou-Galitis O et al. Medication-related osteonecrosis of the jaw: definition and best practice for prevention, diagnosis, and treatment. Oral Surg Oral Med Oral Pathol Oral Radiol. 2019 Feb;127(2):117-135.
2. Otto S et al. Medication-related osteonecrosis of the jaw: Prevention, diagnosis and management in patients with cancer and bone metastases. Cancer Treat Rev. 2018 Sep;69:177-187.
3. AlRowis R et al. Medication-Related Osteonecrosis of the Jaw (MRONJ): A Review of Pathophysiology, Risk Factors, Preventive Measures and Treatment Strategies. Saudi Dent J. 2022 Mar;34(3):202-210.

THE MANAGEMENT OF PATIENTS AT RISK OF CANCER TREATMENT INDUCED BONE LOSS (CTIBL): FOCUS ON DENTAL ISSUES

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Background. Patients affected by breast and prostate cancer, treated with adiuvant therapy (aromatase inhibitors, GnRH agonists and androgen deprivation) can develop CTIBL, a benign condition characterized by a significant decrease in bone mineral density. Patients at risk of CTIBL should be early treated with Bone Modifying Agents (BMAs) such as bisfosfonates and denosumab, even in a prevention context. BMAs can cause osteonecrosis of the jaws (ONJ): the real prevalence of ONJ in oncologic patients, treated with low doses of BMAs to treat or prevent osteoporosis (oncologic osteometabolic patients), is not clear: it is estimated to range from 0 to 5%, although data are insufficient. ONJ prevalence among metastatic patients treated with high BMAs doses is nearly 20% and among osteometabolic, non oncologic, patients is nearly ≤1%. Also considering local and sistemic risk factors (such as comorbidities and concomitant treatments, first of all dental surgeries), all oncologic patients could potentially develop ONJ and must be referred to dentists, before starting BMAs.

The Familial Cancer Clinic worked out an algorithm to manage patient at risk of ONJ in order to 1) give patients the best interventions to prevent/treat ONJ; 2) estimate the real prevalence of ONJ in oncologic osteometabolic patients.

Patients and methods. All patients followed by the Istituto Oncologico Veneto, affected by breast and prostate cancer, treated with adiuvant therapy, undergo an osteometabolic evaluation at the Familial Cancer Clinic (nearly 700 new patients/year). Prior to this evaluation, patients undergo to biochemical exams (phospho-calcium metabolism), radiological exams (bone densitometry, spinal x-ray, orthopantomography) and dental evaluation (clinical and radiological evaluation) with their dentist (a written BMAs feasibility assessment is required). Patients with an incomplete or doubtful evaluation are referred the Unit of Oral Pathology and Surgery for a more accurate examination (as stated by SIPMO\SICMF "The aim of primary prevention of ONJ is to identify and remove all oral conditions that are known to trigger ONJ and restore sound oral health"). If needed, dentists of the Unit of Oral Pathology and Surgery take charge of these patients in a priority context, in order to start, as fast as possible, the BMAs treatment. During BMAs treatment, patients are recommended to have a good personal dental care and to continue with regular dental follow-up, either by the Unit of Oral pathology and Surgery, or by their own dentist.

Results. We expect that such a defined path will allow us to estimate the real prevalence of ONJ in oncologic osteometabolic patients and to give patients the best dental supportive care during BMAs treatments.

Conclusions. A dental evaluation is mandatory before starting BMAs; patients should be encouraged to have regular dental follow-up during BMAs treatment. The collaboration between clinicians and dentists plays a fundamental role in the management of patients at risk of ONJ.

References

1. Alberto Bedogni et al, Italian position paper (SIPMO-SICMF) on medication-related osteonecrosis of the jaw (MRONJ) Oral Diseases. 2024.
2. Campisi G et al,Raccomandazioni clinico-terapeutiche sull'osteonecrosi delle ossa mascellari (ONJ) farmaco-relata e sua prevenzione. 2020.
3. Bacci C et al. A retrospective study on the incidence of medication-related osteonecrosis of the jaws (MRONJ) associated with different preventive dental care modalities. Support Care Cancer. 2022 Feb;30(2):1723-1729.

ANALYSIS OF A CLINICAL-CARE MODEL FOR PATIENTS WITH METASTATIC BREAST CANCER

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Background. Osteonecrosis of the jaw (ONJ) is a serious condition associated with the use of bisphosphonates (BPs), denosumab and other antiresorptive agents. The pathogenesis includes oversuppression of bone remodeling, local infection, inhibition of angiogenesis, soft tissue toxicity and immune dysfunction. ONJ is described as an area of exposed bone in the maxillofacial region that does not heal within 8 weeks after diagnosis in a patient currently or previously treated with antiresorptive therapy, in the absence of radiation therapy to the craniofacial region.

It's important to recognize risks and plan therapies within a multidisciplinary team related with the patient's systemic condition; we present a diagnostic-therapeutic path and the related preliminary data. The aim of this study is to quantify the actual number of potential candidates for follow-up and determine if the data align with the statistics found in the literature.

Patients and methods. The data relating to metastatic breast cancer in the three-year period 2013-2015 were examined from the Marche region tumor registry and compared, using the data available in the literature, with the case series registered in the department. The protocol aims to minimize the onset of osteonecrosis in patients receiving antiresorptive therapy.

In this specific case, only cases of breast cancer were examined due to the unavailability of official data relating to other pathologies.

Results. In the three-year period under consideration, 3949 new diagnoses of breast cancer were recorded in the Marche region, of which 1294 in the province of Ancona. Of the 91 metastatic forms in our district only 5 developed ONJ. The real number of ONJ maybe be higher if compared to literature (can be over 10 cases due to missing prevention).

Conclusions. A structured network is necessary, involving not only hospital facilities but also general practitioners and private dentists for information sharing. The electronic health record can thus serve as a foundation on which to build a project aimed at managing the at-risk patient.

The care path which in our structure involves the screening of each patient treated with BF or antiresorptive agents shows encouraging data, therefore it is necessary to implement the network to promote coverage throughout the territory. It was not possible to compare more recent data due to the lack of updating of the tumor registry in our region. We are working on establishing a network to better understand the vastness of the phenomenon.

A multidisciplinary approach as in the case of our diagnostic therapeutic care path has proven useful in preventing the onset of ONJ in the population and the development of advanced forms.

References

1. Vincenti M, Fasciolo A, Pepe P, Pertino A, Fusco V. ONJ (osteonecrosis of jaw) in breast cancer patients: effect of preventive measures in a mono institutional experience. Annali di Stomatologia 2014; Suppl.2: 1-54.
2. Wan J, Sheeley D, Somerman M, Mitigating osteonecrosis of the jaw (ONJ) through preventive dental care and understanding of risk factors, Bone Research, 2020.

STRATEGIES FOR THE MANAGEMENT OF PATIENTS WITH OR AT RISK FOR MEDICATION-RELATED OSTEONECROSIS OF THE JAWS (MRONJ)

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Background. Knowledge and experience in addressing MRONJ continues to evolve, requiring modifications and refinements. The American Association of Oral and Maxillofacial Surgeons (AAOMS) has updated protocols for the diagnosis and management of patients with, or at risk for, drug-related osteonecrosis of the jaw (MRONJ) in 2022. This position paper highlights the importance of adopting a proactive prevention attitude to maintain healthy oral conditions in patients undergoing antiresorptive therapy. Antiresorptive drugs, as is known, have direct effects on osteoclasts, causing changes in bone structure and vascularization. On this modified, poorly vascularized bone, the action of predisposing and triggering factors can determine MRONJ.

For this reason, an assistance service called "PROGETTO BISFOSFONATI" (PB) for the secondary and tertiary prevention of MRONJ was born in 2006 at the Dental Clinic of Fondazione Ca' Granda IRCCS Ospedale Maggiore Policlinico (University of Milan).

Patients and methods. PB admits patients who are taking or are about to undergo therapy with antiresorptive drugs (ARD), from different backgrounds. From 2005 to the present, a single retrospective epidemiological research of medical records collected in the Pb was developed. The data collected belonged to 675 osteoporotic and oncological patients, from which those who did not meet the inclusion criteria were excluded, resulting in a final sample of 467 patients, 57 men and 410 women. A medical record was compiled for each patient based on biographical data, clinical and radiological examinations, and follow-up, which was then entered into a database. The study of this database enabled the identification of an individual risk profile that is crucial for the prevention of MRONJ.

Results. Patient data analyzed over the years demonstrate that MRONJ is rare, multifactorial, dependent on the dose and type of ARDS, systemic pathologies and bad habits. Within the limit of our analysis based on a small sample, the statistically important risk factors are intake of immunosuppressants, cortisone and smoking. An accurate medical history, a thorough dental and radiological examination, associated with correct oral hygiene before starting therapy with antiresorptive drugs helps to reduce the incidence of MRONJ.

Conclusions. Once therapy has commenced, patients should be regularly observed to evaluate the oral cavity's health status and detect any early signs of osteonecrotic lesions. Our strategy is a patient-centered therapy, based on the susceptibility of the individual and the risk factors to which he is exposed, with the aim of preventing the onset of MRONJ especially in the case of unavoidable surgical procedures. In order to obtain a reliable risk profile, the collaboration of different specialists and a multidisciplinary diagnostic assessment of the patient is essential. Dental professionals are advised to: carry out a careful medical history associated with objective and radiological examination, the elimination of local triggering factors and adequate prophylaxis in the event of unavoidable surgical procedures.

References

1. JOMS 2022: https://doi.org/10.1016/j.joms.2022.02.00.
2. Qeios ID: PBUJ6Z https://doi.org/10.32388/PBUJ6Z.
3. Dent. J. 2022, 10, 89. https://doi.org/10.3390/dj10050089.