CHANGES IN EPIDEMIOLOGICAL CHARACTERISTICS OF PATIENTS DIAGNOSED WITH MEDICATION RELATED OSTEONECROSIS OF THE JAW (MRONJ). The Sheba Medical Center experience of the past fifteen years

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Introduction

MRONJ is affecting a dynamic population of patients who received medication for osteoporosis and oncology treatment and the demographics are changing due to fluidity in treatment protocols. Relevant health care givers need to be constantly up to date with these changes.

Objectives

The aim of this study is to track the development of the epidemiological characteristics in the various patient populations diagnosed with MRONJ at the Sheba Medical Center.

Methods

The files of patients diagnosed with MRONJ from 2003-2017 were retrieved. MRONJ was diagnosed according to AAOMS diagnostic criteria. Only patients that were treated with bone modifying agents were included. Cases of MRONJ associated solely with antiangiogenic agents were excluded. Data on demographics, medical background, type and duration of drug use and triggering events at presentation was collected.

Results

The study included 431 patients who met the inclusion criteria, 319 females (74%) and 112 males (26%). 60% of patients were in the 60-79 year age bracket. There was a sharp increase in cases between 2008-2009, followed by a steady increase 2009-2012, and a slight decrease 2012-2017. A decrease in the proportion of multiple myeloma patients and an increase in proportion of patients with bone metastases of solid tumors, presenting with MRONJ has been observed in the past few years. In addition, an increase in proportion of cases in osteoporosis patients compared with oncology patients is evident (Figure 1). It was observed that, over time, patients presented to our clinic at an earlier stage of disease (Figure 2). In the early years of this decade, Denosumab was approved for clinical use in osteoporosis and oncology. As a result, since 2012 we have noted a constant increase in patients affected with Denosumab induced osteonecrosis (Figure 3 and 4).

Figure 1: Incidence of newly diagnosed MRONJ cases per disease

Figure 2: Stage at presentation of newly diagnosed MRONJ cases

Figure 3: Incidence of newly diagnosed MRONJ cases per drug type in osteoporosis patients

Figure 4: Incidence of newly diagnosed MRONJ cases per drug type in cancer patients

Conclusions

Changes in drug and treatment protocols and increased awareness of oncology care givers, including referral and consultation with specialists in Oral Medicine, has altered the demographics and presentation of the disease. Since decreasing the dosage of Pamidronate in multiple myeloma patients (2010), we have seen a relatively smaller number of cases of multiple myeloma patients presenting with MRONJ. The presentation of MRONJ in patients taking Denosumab has different characteristics to the presentation in patients taking only bisphosphonates. The number of patients presenting with MRONJ who have been treated with Denosumab has steadily increased since its introduction. In addition to these changes in drug protocols, we are witnessing an aging population, whose cumulative dosage for osteoporosis treatment is increasing with time thus presenting us with a rising number of MRONJ cases. Together with the AAOMS position paper (2014) and the resulting increased awareness among oncology care givers and General Dental Practitioners we have observed patients presenting at an earlier stage of MRONJ. This highlights the importance of constantly updating the demographics of the disease in order to identify high risk groups.