Clinical and Healthcare Resource Utilization (HRU) Impact in Spain from the use of Denosumab for the Prevention of Skeletal-Related Events (SRE) in Patients with Bone Metastases Secondary to Breast Cancer (BC), Prostate Cancer (PC) and Other Solid Tumors (OST)

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INTRODUCTION

Bone is the most common site for metastases in cancer and is of pivotal clinical importance in breast and prostate cancers because of the prevalence of these diseases (Colombo et al. 2009).

Bone metastases (BM) is the cause of considerable morbidity in patients with advanced cancer. Skeletal-related events (SRE) include pathological fracture (PF), radiation to bone (RB), spinal cord compression (SCC) or surgery to bone (SSS) as defined by the Consensus Development Conference Panel of 2006.

SREs are associated with a significant consumption of healthcare resources that generate a substantial economic burden for the Spanish healthcare system (Durán 2014).

Management costs vary. In Spain, one SRE cost 551,274 € for PF, 2,478,014 € for SC, 851,204 € for RB and 746,000 € for SSS in 2014 (Durán 2014).

An increase in BM prevalence has been observed in Spain for the prevention of SREs in adults with bone metastases from solid tumours (SUGAR SRE, signature and SUGAR).

Denosumab is an RANKL antagonist approved and reimbursed in Spain for the prevention of SREs in adults with bone metastases from solid tumours (SUGAR SRE, signature and SUGAR).

Denosumab was selected to PA in preventing SREs with favorable safety and convenience in patients with bone metastases from advanced cancer (Lipton 2012).

The objectives of the study were to estimate clinical and HRU impact in Spain when a novel therapy such as denosumab is used in substitution of an existing alternative (AZ) to prevent SREs in patients with bone metastases secondary to Breast cancer (BC), Prostate cancer (PC) and Other Solid Tumors (OST).

RESULTS

From January 2013 until October 2014, 1,531 patients were included in the SHS in Spain, corresponding to 478 patients with BC, 437 with PC and 643 with OST.

After analyses presented in Table 1 and 2, respectively.

The outcomes of the model included total number of SREs, number of hospitalizations and length of in-patient stay, delay of severe pain, reduction of acute phase reactions, drug administration time associated with patients treated with either denosumab or AZ.

The number of SREs was estimated from the number of patients with bone metastases multiplied by the SRE annual rates for each active agent, by tumor type (Table 1).

The number of inpatient days is estimated from multiplying the total number of SREs predicted by type, by the probability of hospitalization per SRE type (Table 2).

A clinical episode of hospital stay were calculated from the previous estimation multiplied by the duration of hospitalization by SRE type (Table 2).

Time to worsening pain was estimated by multiplying the median reported time to severe pain by the treatment, by the number of patients per treatment type (Table 1).

Acute phase reactions were calculated by multiplying the estimated number of patients by tumor type by the reported frequency of acute phase reactions (Table 1).

To calculate the administration time, it was necessary to estimate the number of patients with or without denosumab AZ, as administration time for AZ is different for these two treatment patterns. Therefore for AZ, the estimated number of patients was multiplied by the percentage of patients with and the percentage of patients with and non- AZ.

The estimated number of patients was multiplied by the time per administration and the total number of administrations (Table 3 and 4).

LIMITATIONS

No Spanish data has been identified assessing the different outcomes: different published sources has to be combined to estimate the different parameters.

CONCLUSIONS

Superior efficacy of denosumab versus AZ reduces the clinical and HRU impact by decreasing the number of SREs, associated hospitalizations, duration of inpatient stay, while delaying time to worsening pain. In addition, the use of denosumab implies less administration time and acute phase reactions when compared to AZ.

REFERENCES

Fitzgerald et al. Eur J Pain 2015, 0000, 000-000.
García et al. J Pain Res 2015, 0000, 000-000.
Herrán et al. Eur J Pain 2015, 0000, 000-000.
Márquez et al. J Pain Res 2015, 0000, 000-000.