

1056

POSTER

Cost of skeletal complications in patients with bone metastases of solid tumors

T. Delea¹, J. McKiernan², M. Liss¹, J. Edelsberg¹, J. Brandman³, J. Sung³, M. Raut³, G. Oster¹. ¹Policy Analysis Inc., Brookline, USA; ²Columbia University, College of Physicians and Surgeons, New York, USA; ³Novartis Pharmaceuticals Corp., East Hanover, NJ, USA

Background: Cancer patients with bone metastases often experience skeletal-related complications including pathological fracture, hypercalcemia, pain requiring surgery, radiotherapy, or opioid analgesics, or spinal cord compression (collectively, skeletal-related events [SREs]). SREs may result in increased morbidity and medical care costs. In the Netherlands, the estimated average cost attributable to SREs in prostate cancer patients in 1998 was 6,973 Euros (7,300 \$US 2002).¹ The cost of SREs in cancer patients with other solid tumors and in other countries is unknown.

Methods: The objective of this study was to estimate the costs of SREs in US patients with bone metastases of solid tumors. We used data from the Protocare Sciences Managed Care Database, a large health-insurance claims database representing one of the largest health benefits companies in the US. Data for this study spanned 7/94 - 6/02 and were linked to mortality data from the US Social Security Administration. Study subjects included all persons with (1) ≥ 2 encounters with a diagnosis of primary breast, lung, prostate, or other solid tumor; (2) ≥ 2 encounters with a diagnosis of metastases to bone; and (3) presence of ≥ 1 SRE. SREs were identified based on the occurrence, on or after the date of first diagnosis of bone malignancy, of (1) ≥ 1 encounter with a diagnosis of pathological fracture, spinal cord compression, or hypercalcemia, or (2) ≥ 1 bone surgery or radiotherapy procedure, or (3) initiation of opioid analgesic therapy. The primary measure of interest was the expected lifetime cost of SRE-related care, which was estimated using Kaplan-Meier methods for each primary tumor type individually and for all solid tumors combined.

Results: We identified 2370 patients with bone metastases of solid tumors, of whom 1259 (53%) experienced ≥ 1 SRE. Detailed results for patients with SREs by primary tumor type are shown below.

	Breast	Lung	Prostate	Other Solid Tumor	All
Subjects, No.	321	295	282	361	1259
Median Survival, Mos.	19	5	12	7	9
Expected Costs of	13.3	12.0	9.1	13.5	12.2
SREs, \$1000	(11.1-15.5)	(10.2-13.8)	(7.1-11.1)	(11.1-15.8)	(11.1-13.3)
(95% CI)					

Conclusions: The economic burden of SREs in this high-risk population of patients with bone metastases of solid tumors was substantial for all primary tumor types. Costs were greatest for those with breast and other solid tumors. Coupled with emerging evidence from randomized trials demonstrating the benefits of potent intravenous bisphosphonates in reducing the incidence of SREs, our findings suggest that these agents may play an important role in improving outcomes in cancer patients.

Reference

- [1] Groot MT et al. Costs of prostate cancer, metastatic to bone, in The Netherlands. *Eur Urol* 2003;43:226-32.