Eight-year follow-up of patient outcomes and bone health in radium-223-treated patients: data from the global REASSURE study

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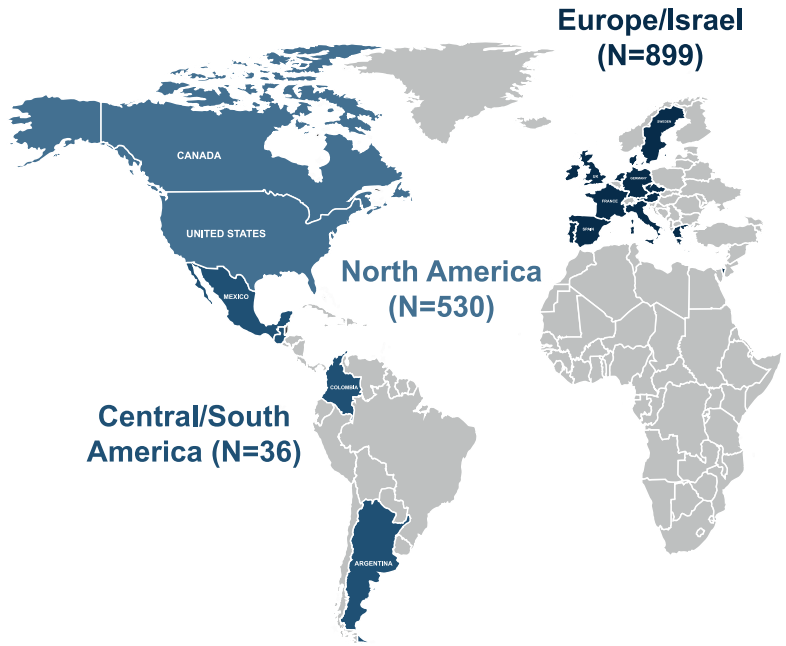
Disclosures

- Sabina Dizdarevic reports consulting or advisory roles from GE Healthcare, Bayer and Novartis

Background and objective

- Bone metastases are common in patients with advanced prostate cancer[1]
- They are often painful and can lead to skeletal complications, negatively impacting quality of life and survival[1]
- Radium-223 (Ra-223), an alpha-emitting calcium mimetic, targets bone metastases and is approved for the treatment of metastatic castration-resistant prostate cancer (mCRPC)[2]
- REASSURE (NCT02141438) is a global, prospective, observational study of Ra-223 use in patients with mCRPC[3]

REASSURE study locations

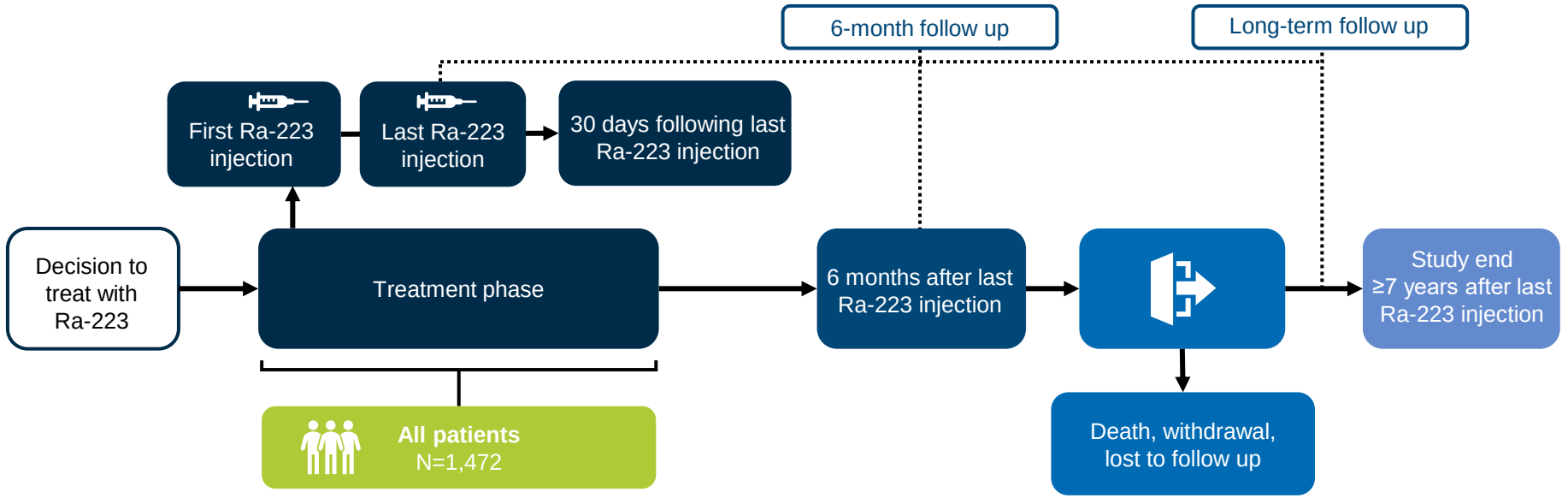


<u>Objective of these analyses:</u> Using the eight-year follow up data of REASSURE, we assessed pain response, skeletal events and survival, as well as long-term safety

1. Body J-J et al. *Nat Rev Urol.* 2015;12:340–356; 2. Vogelzang NJ. *Expert Rev Clin Pharmacol.* 2017;10:809–819; 3. Dizdarevic S et al. *Eur J Nucl Mol Imaging*. 2019;46:1102–1110
mCRPC, metastatic castration-resistant prostate cancer; Ra-223, radium-223

Methods

REASSURE study design



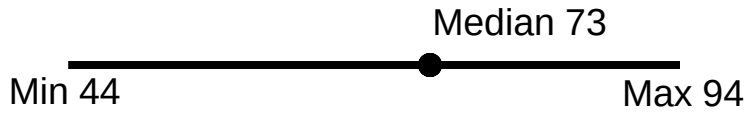
- Data from 1,472 patients treated from 2014–2017 were analyzed
  - Data cutoff: Oct 24, 2024
- Statistics were descriptive in nature

- Outcomes presented here include:
  - Incidence of fractures
  - Pain response (≥2-point improvement in Brief Pain Inventory-Short Form [BPI-SF] worst pain score) in patients with pain at baseline
  - Overall survival

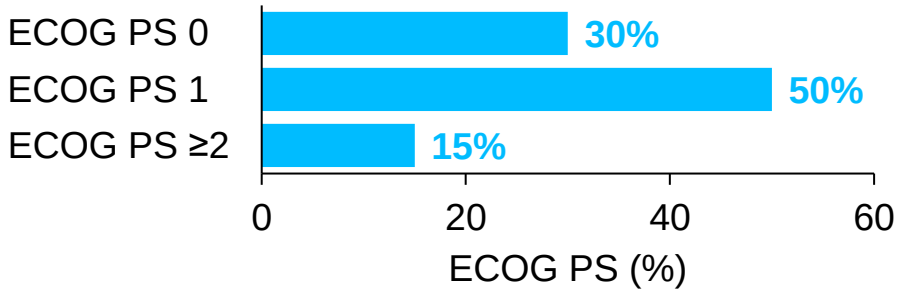
BPI-SF, Brief Pain Inventory-Short Form; Ra-223, radium-223

Baseline characteristics

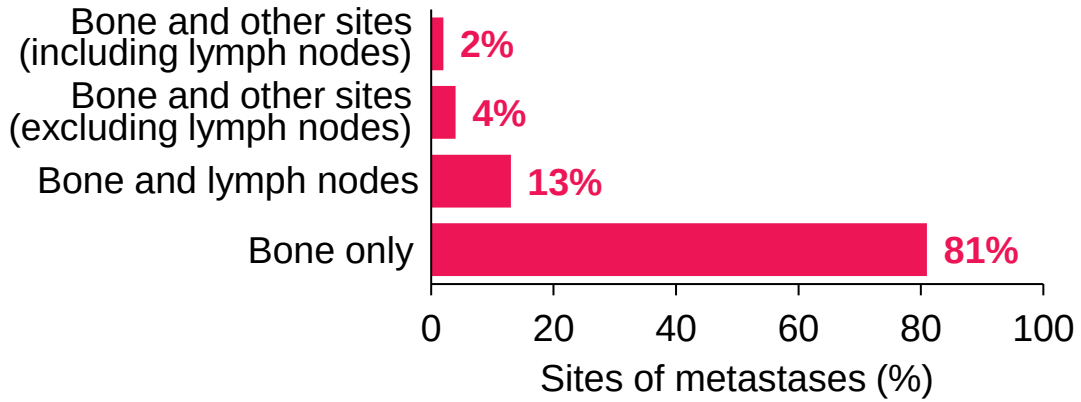
Age, years[a]



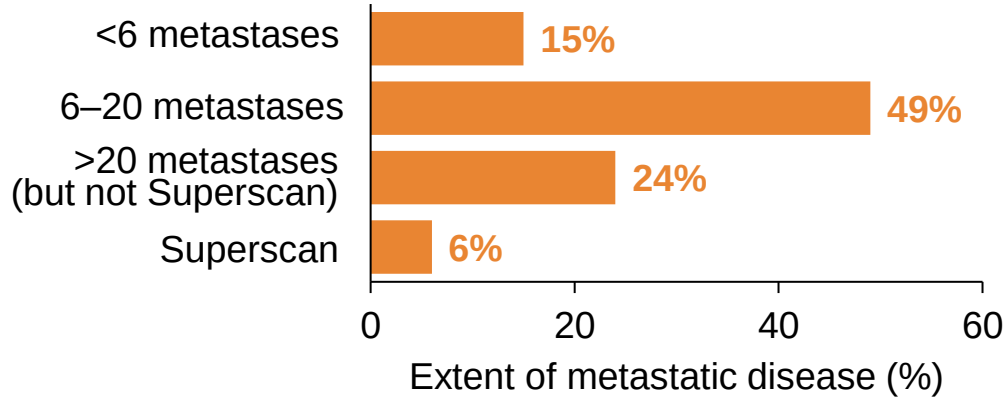
ECOG PS[b]



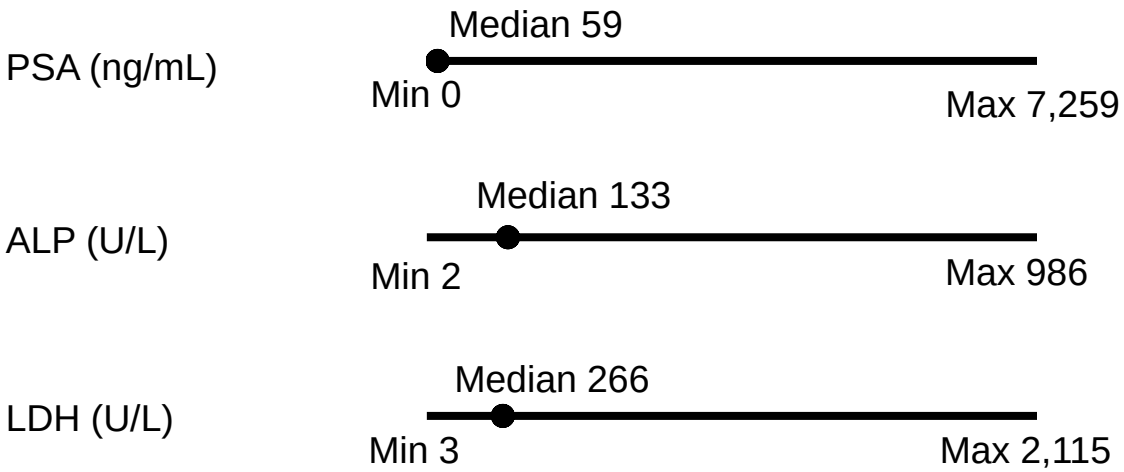
Sites of metastases



Extent of metastatic disease



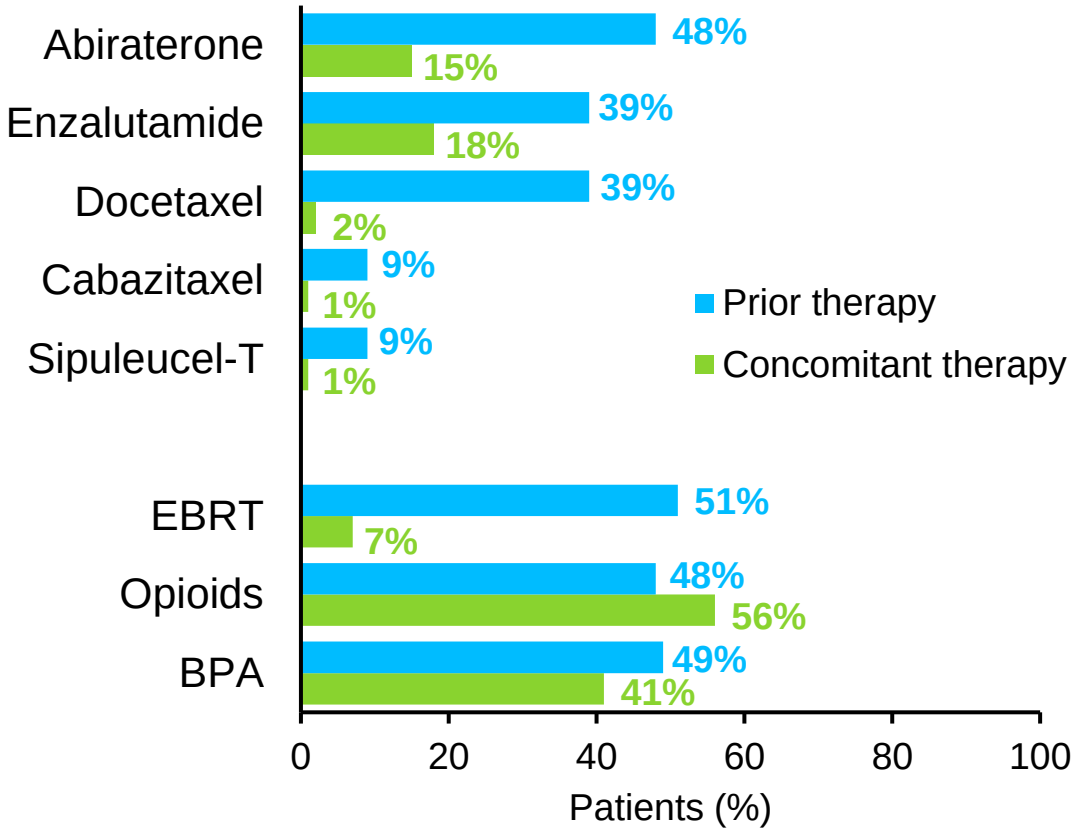
Laboratory values[c]



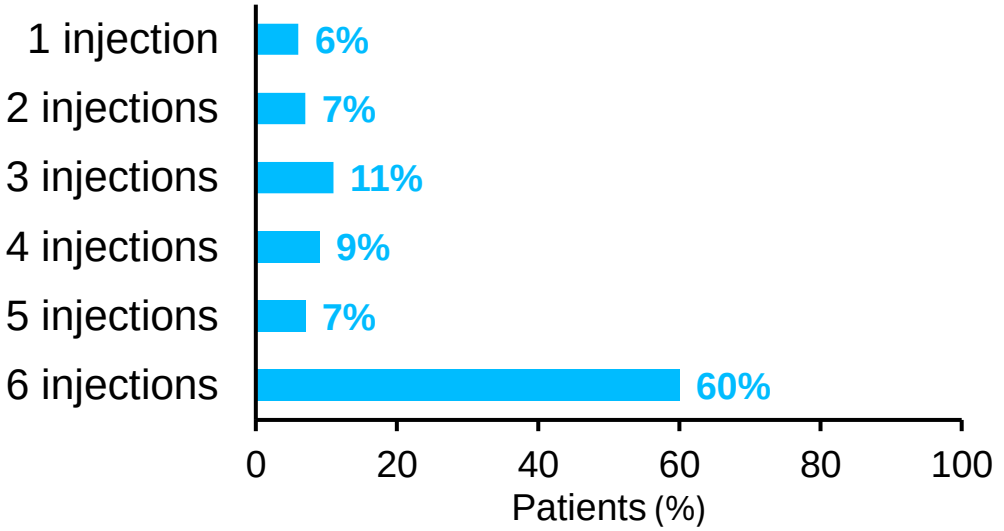
Note: percentages may not total 100 because of missing data and/or rounding. [a]Age calculated at date of informed consent. [b]ECOG PS n=1,392. [c]PSA, n=1,105; ALP, n=1,069; LDH, n=574
ALP, alkaline phosphatase; ECOG PS, Eastern Cooperative Oncology Group Performance StatusLDH, lactate dehydrogenase; PSA, prostate-specific antigen

Prior and concomitant therapies and Ra-223 exposure

Prior and concomitant therapies[a]



Doses of Ra-223 received

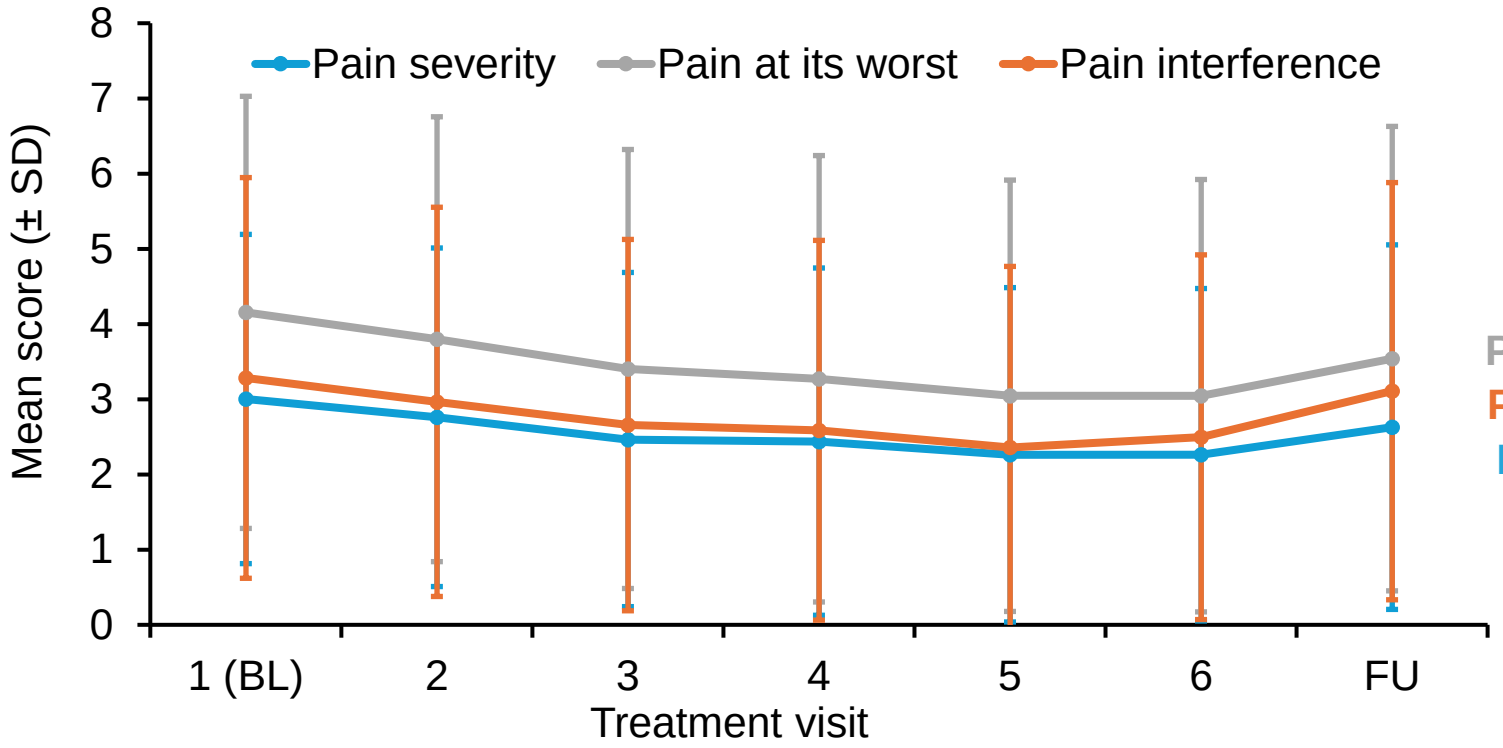


- **67%** of patients received ≥5 doses of Ra-223
- Patients received a median of **6 doses**
- Median follow-up was **17 months**

[a]Any prior therapy is defined as therapy that was completed before the first Ra-223 injection. Concomitant treatment is defined as any therapy given in addition to Ra-223
Patients may have received more than one therapy
BPA, bone protective agent; EBRT, electron beam radiotherapy; Ra-223, radium-223

Pain responses with Ra-223 treatment[a]

- Across the entire population, BPI-SF pain scores decreased with each Ra-223 cycle up to dose 5 and remained below baseline at the last follow-up visit



Mean changes from baseline at treatment visit

Pain at its worst	–0.61 (n=709)
Pain interference	–0.29 (n=708)
Pain severity	–0.36 (n=705)

Patients, n							
Pain at its worst	1365	1193	1096	947	830	737	504
Pain interference	1364	1185	1091	937	826	736	504
Pain severity	1356	1182	1090	943	828	736	502

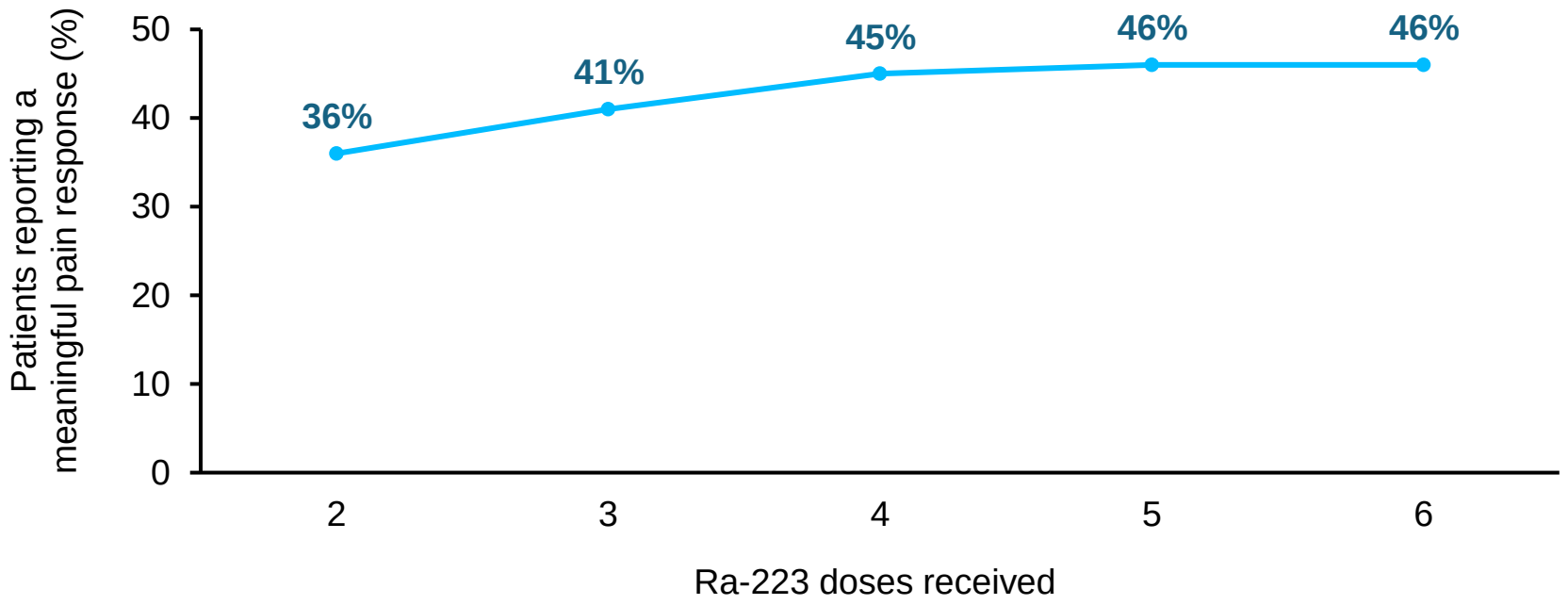
[a]Pain assessment was done prior to Ra-223 injection. Each item on the BPI-SF has a range from 0 (no pain) to 10 (pain as bad as you can imagine). Pain severity score is defined as a mean of item 3 to item 6 on the BPI-SF

BL, baseline; BPI-SF, Brief Pain Inventory-Short Form; FU, follow up; Ra-223, radium-22; SD, standard deviation

Pain response with Ra-223 treatment

- Among patients with pain at baseline[a], the proportion reporting a clinically meaningful pain response[b] gradually increased throughout treatment
- **46%** of patients receiving ≥5 doses of Ra-223 experienced a clinically meaningful pain response

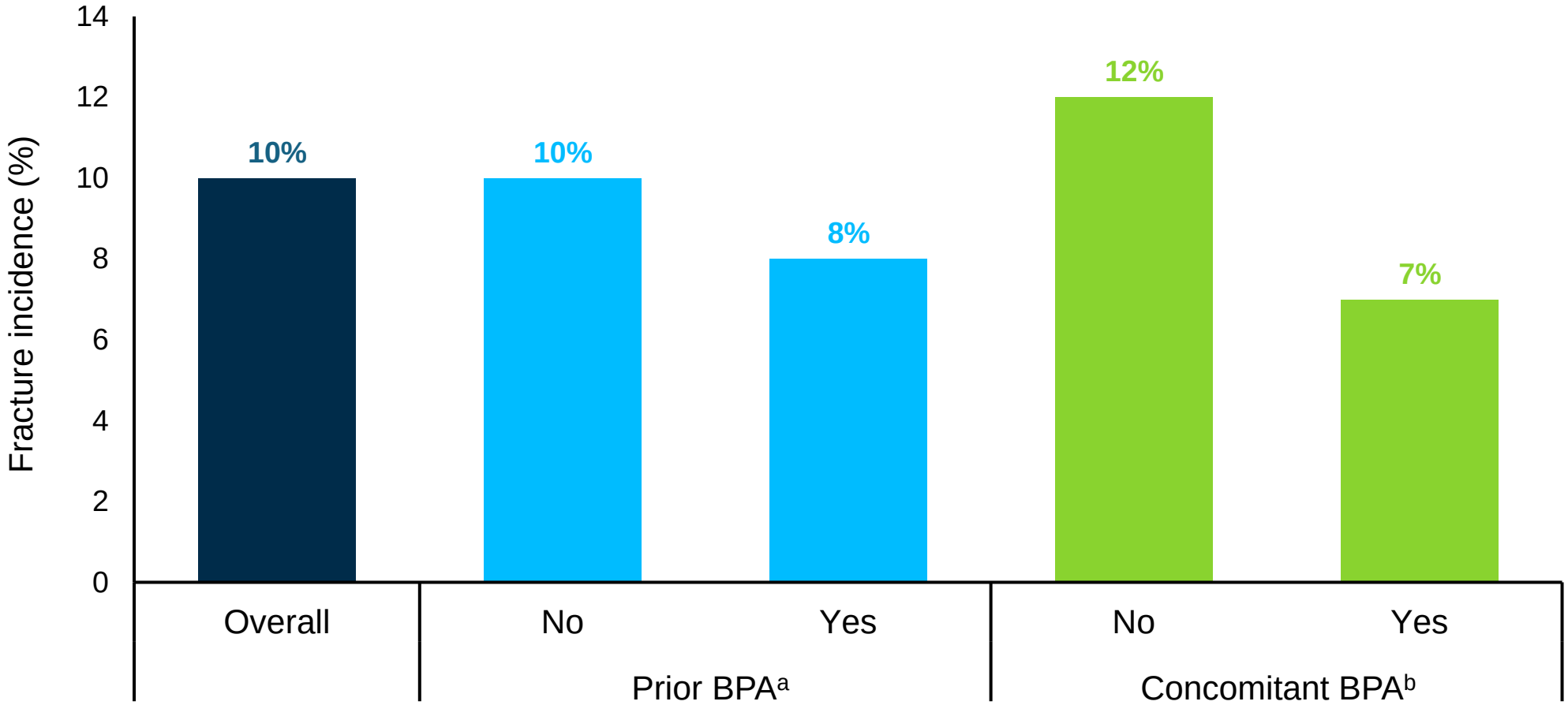
Meaningful pain response reported[b]



[a]358 (72%) patients had a baseline BPI-SF score ≥2. [b]A clinically meaningful pain response was defined as a decrease from baseline of ≥2 points in BPI-SF worst pain item, assessed between the first and last Ra-223 injection
Ra-223, radium-223

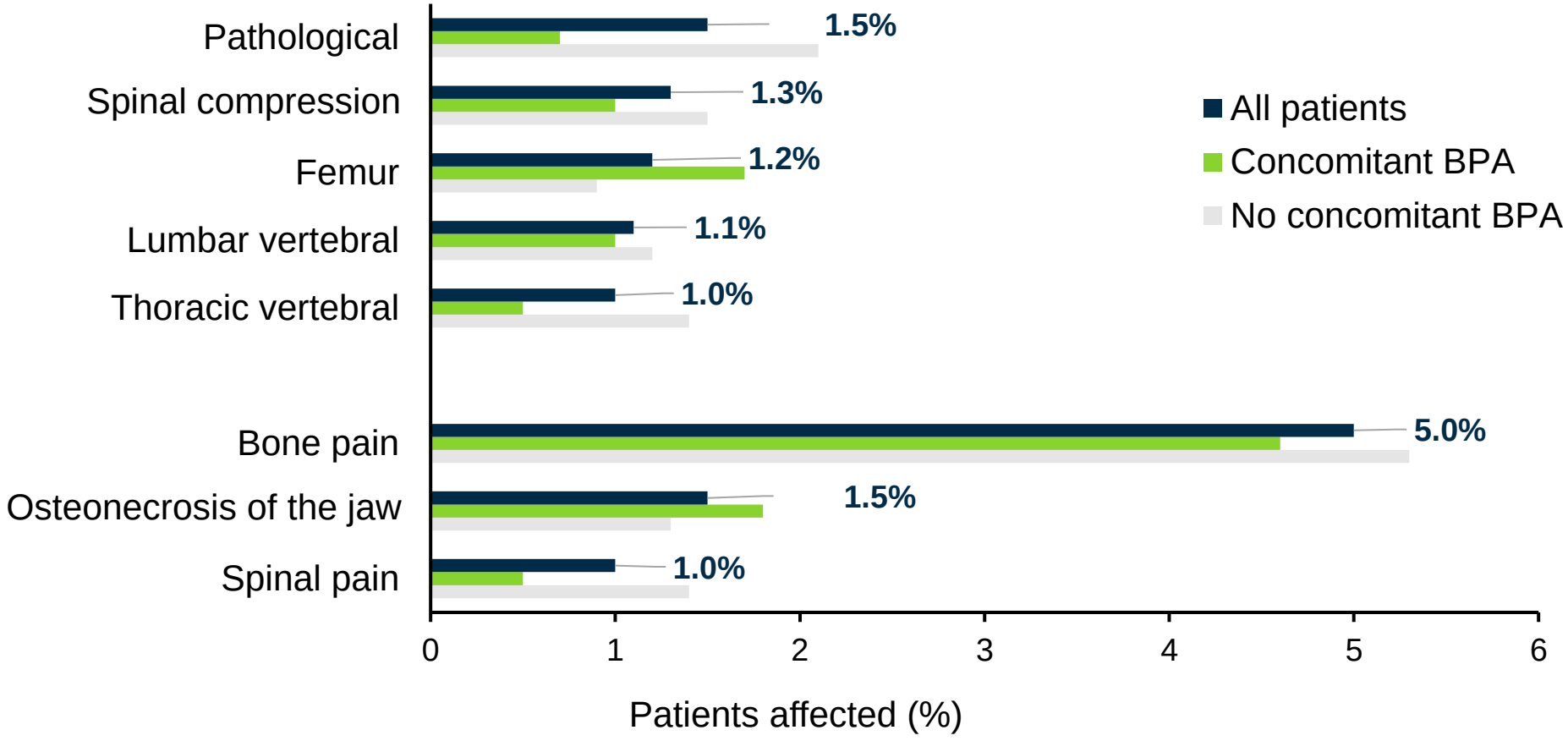
Fractures and other bone-associated events

- The rate of fractures decreased in those with prior or concomitant BPA use



[a]Prior BPA are those which were stopped before the first Ra-223 injection (221/1,472 [15%] patients received prior BPAs)
[b]Concomitant BPA was given in addition to Ra-223 (605/1,472 [41%] patients received concomitant BPAs)
BPA, bone protective agent; Ra-223, radium-223

Incidence of fractures and bone-associated events[a,b]

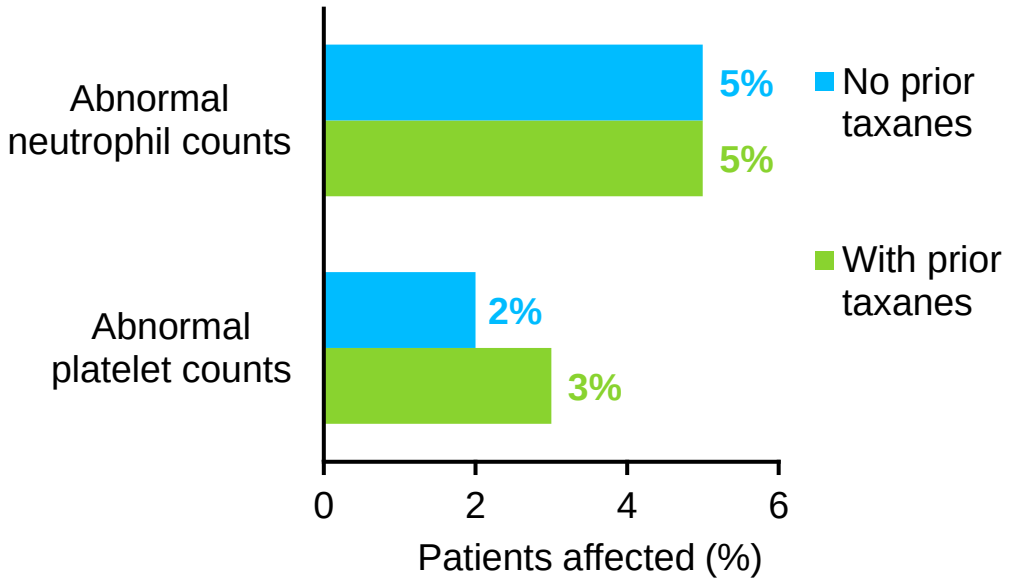


[a]Shown are events occurring in ≥1% of patients. [b]Other bone disorders exclude congenital disorders and fractures
All patients N=1,472; concomitant BPA N=605 [41%]; No concomitant BPA N=867 [59%]
BPA, bone protective agent

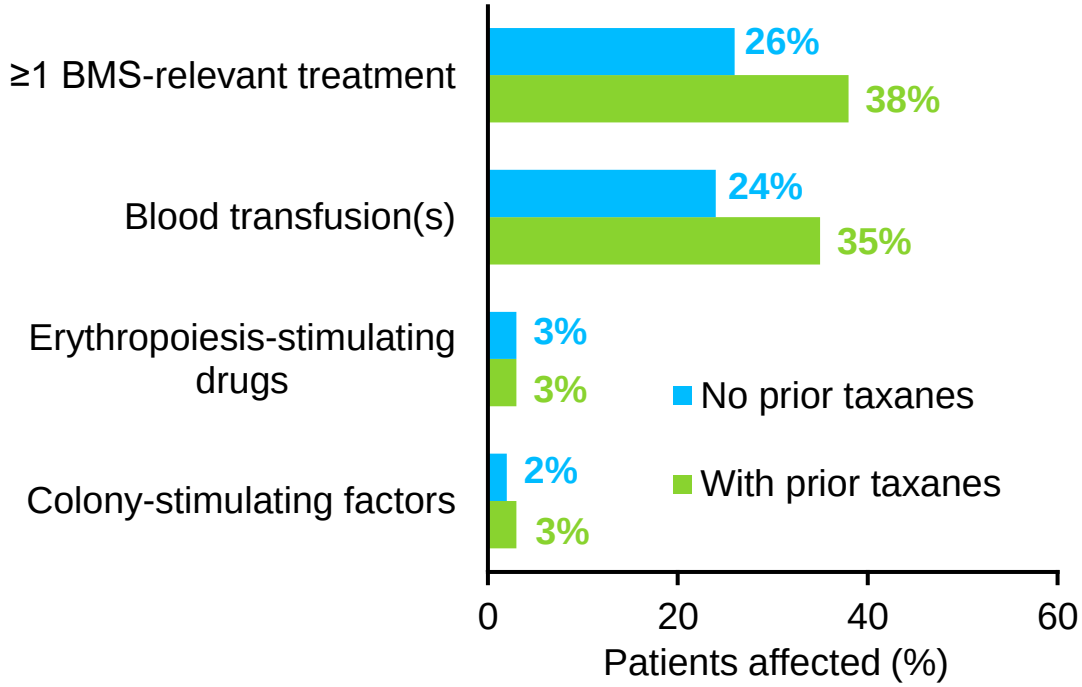
Long-term safety of Ra-223

- Prior taxanes did not increase reported hematological adverse events during treatment with Ra-223
- BMS support, specifically the use of blood transfusions, was more common in patients who had received prior taxanes (38%) than those who had not (26%)

Hematological safety[a,b]



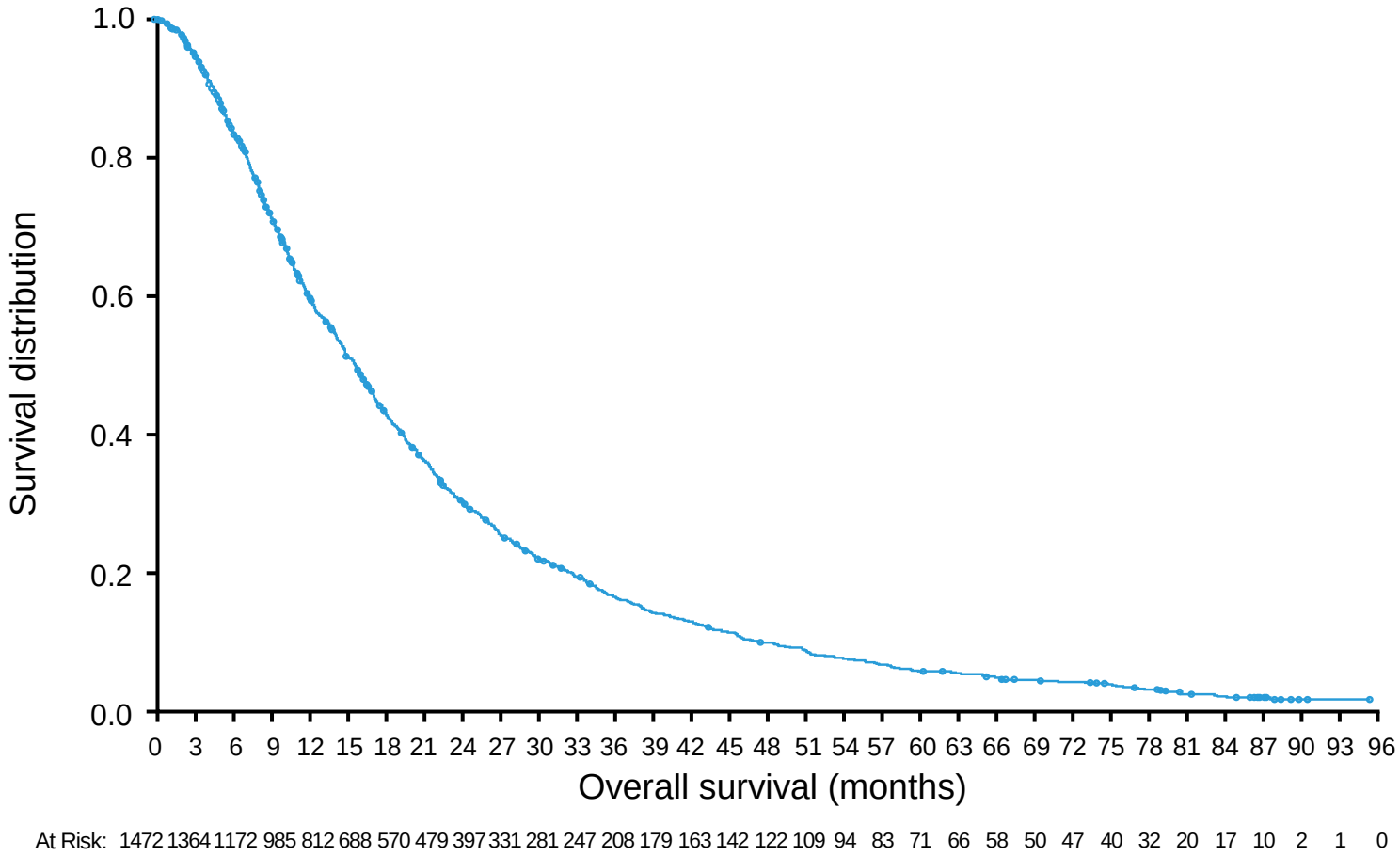
Concomitant BMS support[b,c]



[a]From Ra-223 initiation to 30 days after last dose. [b]No prior taxanes n = 875 [59%], with prior taxanes n = 597 [41%]. [c]Any therapeutic or preventative treatments for BMS after initiation of Ra-223.
BMS, bone marrow suppression; Ra-223, radium-223

Overall survival

- **Median OS** from first dose of Ra-223 was **15.6 months** (95% CI 14.6–16.4)
- The most common cause of death[a] was progressive disease (n=966; 74%)



[a]Documented at end of observation; categorization as identified by medical expert

CI, confidence interval; OS, overall survival; Ra-223, radium-223

Conclusions

- Patients received a median of 6 doses of Ra-223, with 67% receiving ≥5 doses
- Approximately half of patients with pain at baseline achieved a clinically meaningful pain response
  - Incremental decreases in pain were seen over the course of Ra-223 therapy
  - Greatest response rates were seen in patients who received 5 or 6 doses
- The risk of fractures was low with Ra-223 and concomitant BPAs reduced this further; however, fewer than half of patients received concomitant BPAs
- Median OS observed was consistent with other real-world studies[1-4]

1. Buscombe J et al. *World J Nucl Med.* 2020;20:139–144; 2. Cheng S et al. *Cancer Manag Res.* 2019;11:9307–9319; 3. George DJ et al. *Prostate Cancer Prostatic Dis.* 2022;25:306–311; 4. Maruzzo M et al. *Clin Genitourin Cancer.* 2019;17:e187–e194

BPA, bone protective agent; OS, overall survival; Ra-223, radium-223