

## Fracture rates and economic outcomes in patients with osteoporosis receiving gastro-resistant risedronate versus other oral bisphosphonates: A claims data analysis

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### Abstract

**Statement of the Problem:** Oral bisphosphonates are effective in reducing the risk of fractures in osteoporosis patients. In practice, 50% of patients do not follow the complex dosing instructions of immediate-release (IR) bisphosphonates. This can result in suboptimal efficacy and increased risk of fractures. Risedronate gastric-resistant (GR) offers a more convenient dosing option by eliminating the need for fasting. This study compares fracture rates and the economic burden between osteoporosis women treated with risedronate GR (GR cohort) versus other IR bisphosphonates (IR cohort).

**Methodology & Theoretical Orientation:** Osteoporosis women were selected from a large US claims database (2009-2019). The index date was the first dispensing date for an oral bisphosphonate. Patients were classified into the two cohorts based on the treatment initiated on that date and matched 1:1 based on patient characteristics. Patients were observed for  $\geq 2$  years following the index date. Fracture rates, healthcare resource utilization, and costs post-index date were compared.

**Findings:** 2,726 patients were selected in each cohort (median age: 60.0 years). The incidence of fractures was lower in the GR cohort versus the IR cohort for any fracture sites (17% reduction) and spine fractures (29% reduction, both  $p < 0.05$ ). Medication possession ratio was numerically lower but not statistically significant in the GR cohort (mean  $\pm$  SD [median], GR:  $0.4 \pm 0.3$  [0.2]; IR:  $0.4 \pm 0.4$  [0.3],  $p = 0.158$ ). Time to first fracture was delayed for the GR cohort, reaching statistical significance at 36 months after index date (GR=7.08%; IR=8.67%,  $p = 0.037$ ). Patients in the GR cohort incurred fewer hospitalizations (incidence rate per 1000 patients-year: GR=106.74; IR=124.20,  $p < 0.05$ ) translating into lower hospitalization costs (average per-patient-per-year; GR=\$3,611; IR=\$4,603,  $p < 0.05$ ).

**Conclusion & Significance:** Patients treated with risedronate GR versus IR bisphosphonates were associated with a lower incidence of fractures. The more convenient way of risedronate GR intake is associated with higher fracture risk reduction compared to IR bisphosphonates.

### Biography

Thomasius is a Medical Doctor from Germany. She has been working in the bone field for 25 years, starting at the University of Heidelberg and the Charité' in Berlin, there joining the working group of Dieter Felsenberg. Her main interest in the bone field are osteoporosis diagnostic, differential diagnosis, and fracture risk assessment beside therapy. Dr. Thomasius participated as an Investigator in all minus one pivotal clinical trial in the field of osteoporosis. She is member of the German Guideline Committee for Osteoporosis for 10 years; 2018 she took the lead of the committee. Dr. Thomasius is member of the Scientific Advisory Board of the European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases ESCEO. Currently she works at the Frankfurt Bone health Center together with Prof. Peyman Hadj.

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