

# Rates, reasons, and timing for treatment discontinuation in patients prescribed denosumab

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## BACKGROUND

- Denosumab is a clinic-administered subcutaneous injection given every six months to treat osteoporosis.<sup>1,2</sup>
- Denosumab increases bone density and decreases fracture risk, but patients who discontinue without transitioning to an alternative therapy have increased fracture risk.<sup>3</sup>
- Understanding when and why patients discontinue denosumab might prepare clinicians to address common barriers to treatment adherence and persistence.

## OBJECTIVES

- To assess:
1. Rates and reasons for discontinuation
  2. Proportion of patients who transition to alternative therapy after discontinuation
  3. The frequency and timing of fractures relative to discontinuation

## METHODS

- Design** Retrospective cohort study
- Setting** Academic health center in Southeast United States
- Sample** Adult patients who received 2+ doses of denosumab from 2010 to 2018
- Measures**
- Demographics
  - Treatment date(s)
  - Fracture date(s)
  - Treatment discontinuation (yes/no).  
If yes:
    - Date and reason(s) for discontinuing
    - Whether patient transitioned to alternative therapy

## RESULTS

Figure 1. Rate, Timing, and Outcomes of Treatment Discontinuation

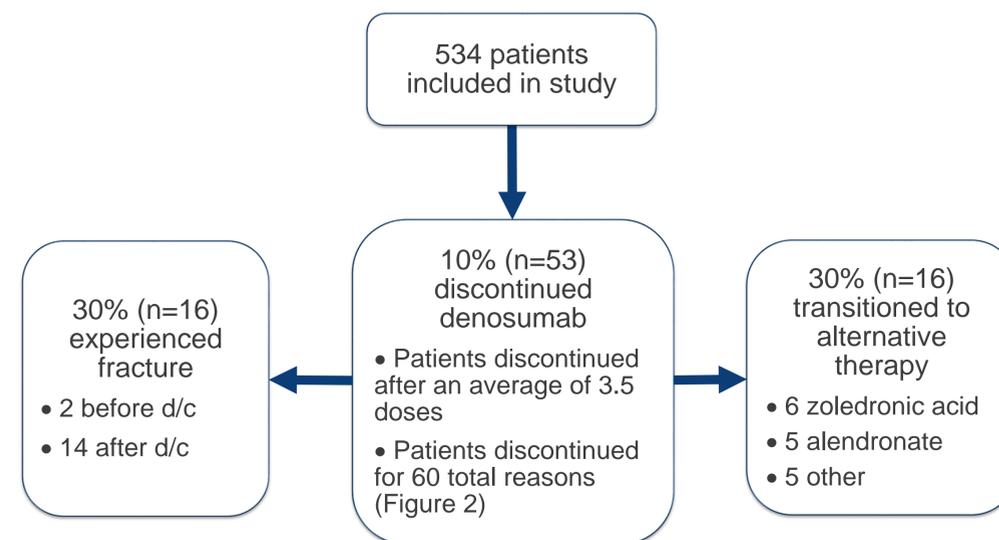
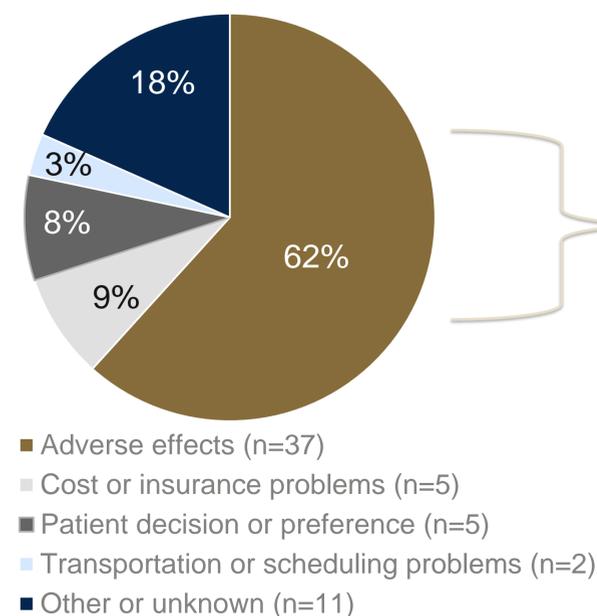


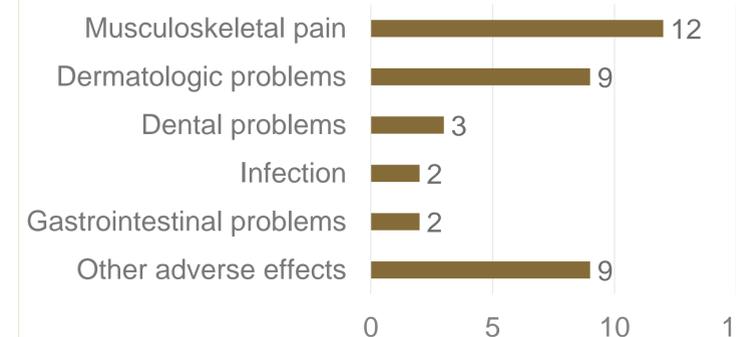
Table 1. Sample Demographics

Characteristic	Median [IQR] or n(%)	
	All patients (n=534)	Patients who discontinued (n=53)
Age, years	69 [62-77]	71 [65-79]
<b>Gender</b>		
Female	461 (86%)	49 (92%)
Male	73 (14%)	4 (8%)
<b>Race</b>		
White	506 (95%)	51 (96%)
Black	18 (3%)	1 (2%)
Other	10 (2%)	1 (2%)

Figure 2. Reasons for Discontinuation



## Adverse Effects (n=37)



## CONCLUSIONS

### Key Findings

- Denosumab discontinuation was most often due to adverse effects.
- Cost and logistic factors were also common reasons.
- Most patients did not transition to alternative therapy after discontinuing.

### Pharmacist Role

- Pharmacists can positively impact patient outcomes by educating patients on the importance of medication adherence and helping patients mitigate adverse effects.
- When therapy must be modified because of low tolerability, pharmacists can recommend alternative therapy options to patients and prescribers.

### Future Directions

- Additional research is needed to design and test pharmacist interventions that promote high patient adherence and persistence to osteoporosis treatment.

## REFERENCES

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3. Cummings SR, Ferrari S, Eastell R, et al. Vertebral Fractures After Discontinuation of Denosumab: A Post Hoc Analysis of the Randomized Placebo-Controlled FREEDOM Trial and Its Extension. *J Bone Miner Res* 2018; 33:190.