

ASSESSING RATES AND REASONS FOR TREATMENT LAPSES IN PATIENTS TREATED WITH DENOSUMAB

Hannah Gipson, PharmD candidate¹ • W. Taylor Gregory, PharmD candidate¹ • Anwesa Chakrabarti, PharmD² • Josh DeClercq, MS³ • Leena Choi, PhD³ • Megan Peter, PhD²

¹College Of Pharmacy, University of Tennessee Health Science Center ²Specialty Pharmacy, Vanderbilt University Medical Center, ³Department Of Biostatistics, Vanderbilt University Medical Center

BACKGROUND

- Denosumab is a subcutaneous injection administered in clinic every six months for the treatment of osteoporosis.¹
- Denosumab reduces bone loss in patients at high risks of bone fractures, but risk of fractures increases when stopping therapy without reasonable cause.²
- Reasonable interruptions to therapy include dental procedures, fractures from trauma, infections, and certain adverse effects.
- Little research has been done to explore rates and reasons for lapses in denosumab therapy in real-world settings.

OBJECTIVES

- To assess frequency and reasons for treatment lapses in patients prescribed denosumab
- To explore predictors of treatment lapses

METHODS

- Design** Retrospective cohort study of adult patients who received 2+ doses of denosumab from 01/2010-12/2018
- Setting** Large academic medical center, Southeastern United States
- Measures** Patient demographics, treatment dates, dates of osteoarthritis fractures incurred before and after initiating denosumab
- Analysis**
- Number of patients with treatment lapses of 240+ days between injections,* categorized reasons for lapses
 - Logistic regression to assess characteristics associated with risk of lapse

*excluded lapses due to death, transfer of care, temporary medication change, or patient discontinuation of therapy

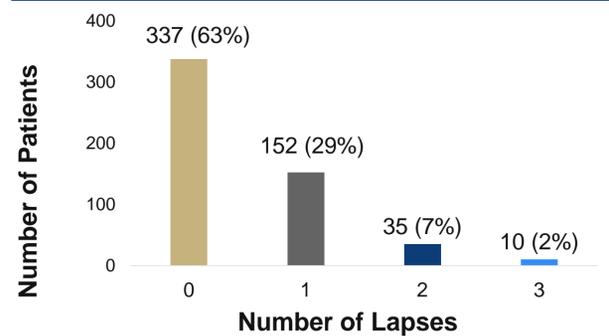
Table 1. Sample Characteristics (n=534)

Characteristic	Median [IQR] or n (%)
Age, years	69 [62-77]
Number of doses received	6 [3-9]
Race, White	506 (95)
Gender, female*	461 (86)
Smoking status	
Never smoked	360 (67)
Current or former smoker	174 (33)
Comorbidities	
Diabetes	68 (13)
Hypertension	335 (63)
Chronic kidney disease	164 (31)
Fractures	
Before treatment	381 (71)
After first dose	68 (13)

*99% of women were postmenopausal

37% of patients incurred a total of 252 lapses

Figure 1. Treatment Lapses per Patient



RESULTS

Figure 2. Reasons for Treatment Lapses

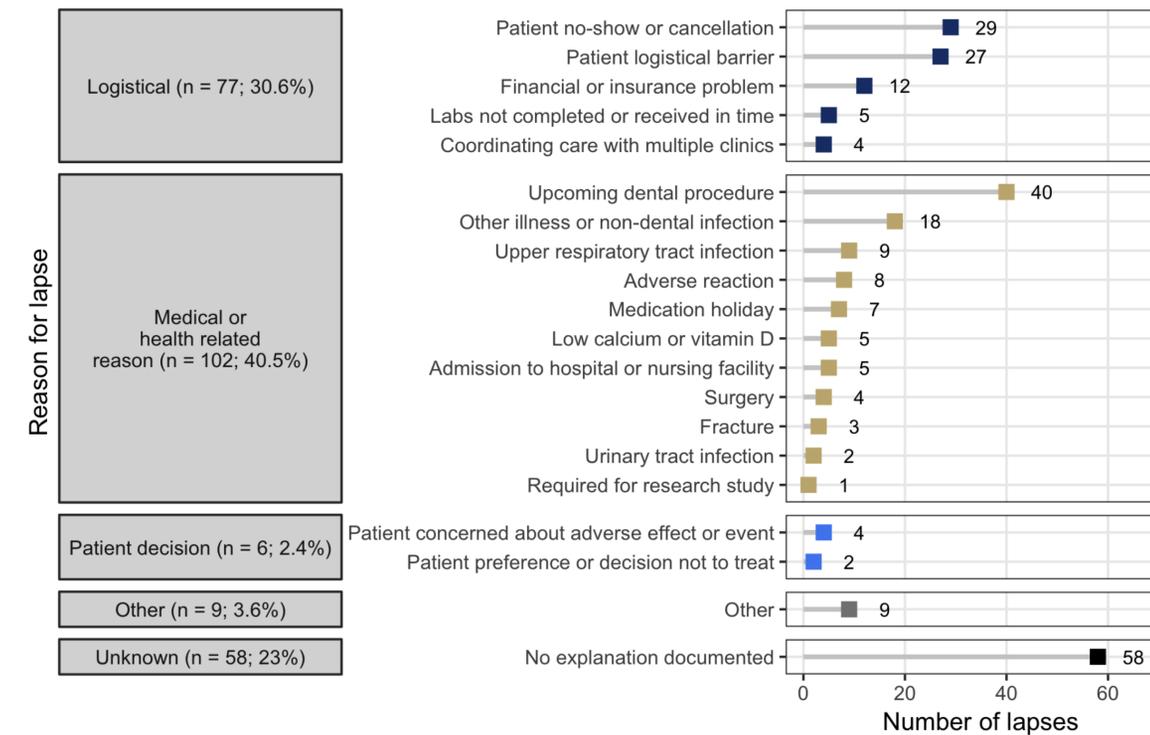
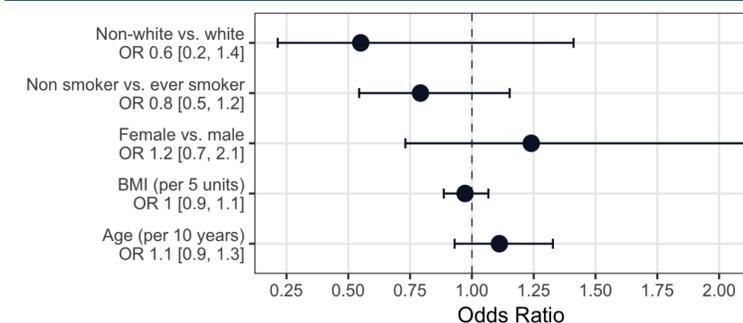


Figure 3. Predictors for Patient Lapses



In logistic regression, no patient characteristics were associated with likelihood of lapse (all p-values >0.05).

CONCLUSIONS

- Treatment Lapses**
- Lapses were common
 - Most for medical reasons (e.g., to reduce risk of adverse effects)
 - No patient characteristics associated with treatment lapses were identified
- Pharmacist Role**
- To prevent lapses, pharmacists can:
- Coordinate care
 - Help patients navigate insurance
 - Offer patients solutions to scheduling or transportation barriers
- Future Directions**
- Identify patients at risk for treatment lapses
 - Develop pharmacist-led, patient-centered interventions to promote higher adherence to osteoporosis therapy

REFERENCES

1. Cummings SR, San Martin J, McClung MR, et al. Denosumab for prevention of fractures in postmenopausal women with osteoporosis. *N Engl J Med.* 2009; 361:756-65.
2. Brown J, Roux C, Torring O, et al. Discontinuation of denosumab and associated fracture incidence: analysis from the Fracture Reduction Evaluation of Denosumab in Osteoporosis Every 6 Months (FREEDOM) trial. *J Bone Miner Res.* 2013;28(4):746-52.