Demographic Patterns in Diagnostic Imaging and Treatment of Bell's Palsy: Employer-Sponsored Claims Analysis

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BACKGROUND

- Bell's palsy: Idiopathic palsy of facial nerve → unilateral weakness or paralysis of facial muscles, associated with mild pain or numbness. ***Diagnosis of exclusion.***
- The majority recover spontaneously, but 20-30% have persistent symptoms and require treatment.[1]
- Current American Academy of Otolaryngology-Head & Neck Surgery (AAO-HNS) Guidelines recommend referral to otolaryngology or facial plastic surgeons if there are [2]
  - New or worsening neurological deficits
  - Ocular symptoms
  - Incomplete recovery within 3 months of initial symptom onset

AIMS

- To characterize imaging utilization (CT/MRI within 30 days) and treatment patterns (no therapy, steroid/ antiviral monotherapy, or combination therapy) for adults with Bell's palsy, and to assess associations with patient demographics and site of care.

METHODS

- Design: Retrospective cohort study of adults with new Bell's palsy, 2016–2021
- Outcome Variables: Demographics (patient age, gender, geographic region), and site of care (ED/urgent care/office)
- Treatment groups were defined as no treatment, monotherapy (steroid or antiviral), or combination therapy (steroid and antivirals).

METHODS

- **MarketScan database:** national claims database of 100 million+ employer-sponsored private insurance that captures healthcare utilization across a broad, insured U.S. population.
  - index date: served as a proxy for the diagnosis date
- **Inclusion Criteria**: Continuous enrollment for > 1 year after the initial index date of Bell's Palsy diagnosis
- **Exclusion Criteria**: Lyme disease, stroke, viral infections, malignancies, autoimmune diseases, and iatrogenic facial weakness

Characteristic	N = 35,942
Age of Patient	46 (34, 55)
Gender of Patient	
Male	16,077 (45%)
Female	19,865 (55%)
Region	
Northeast	6,175 (17%)
North Central	6,791 (19%)
South	17,041 (47%)
West	5,804 (16%)
Unknown	131 (0.4%)

Table 1. Patient Demographics

RESULTS

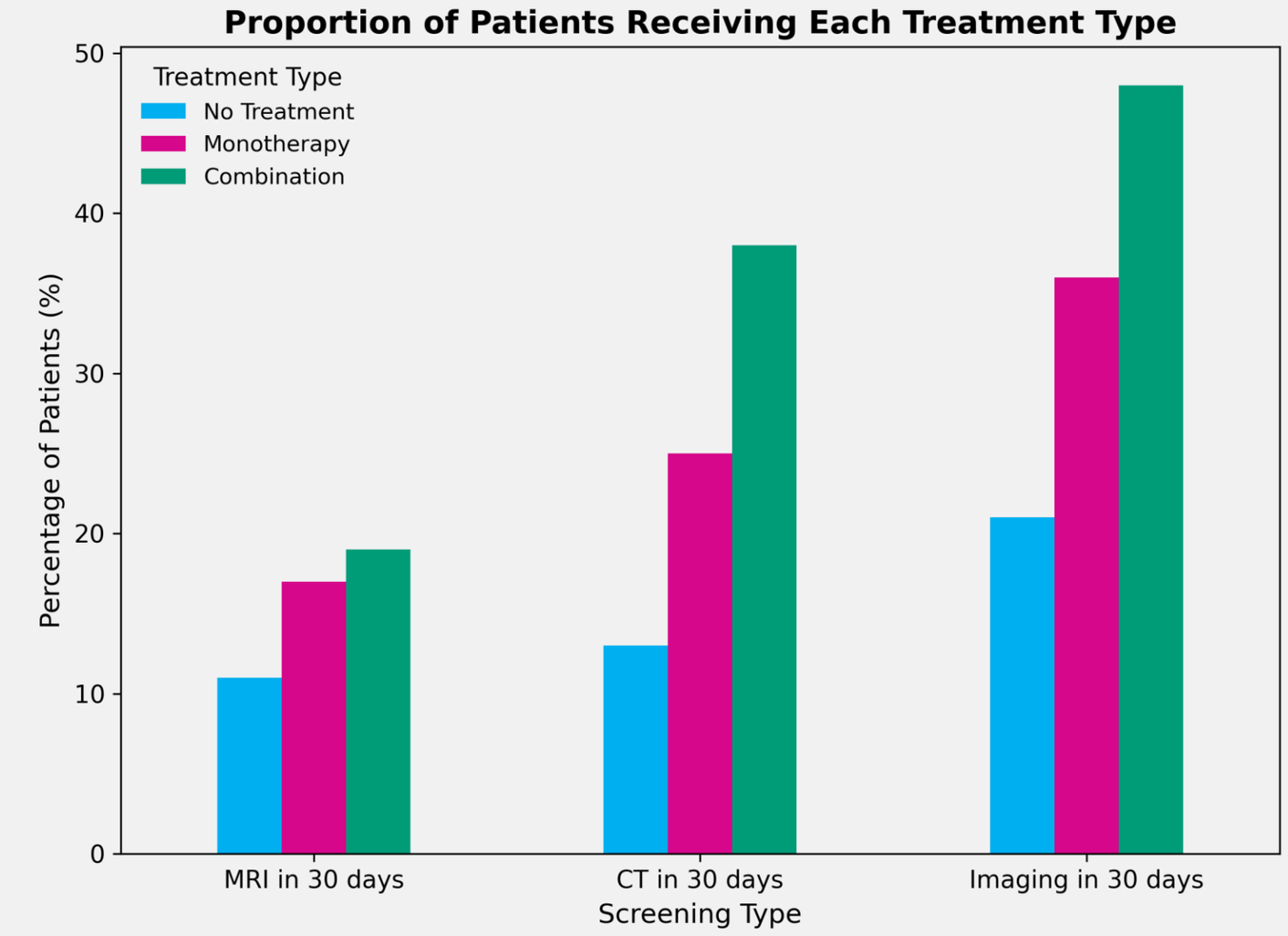

Table 2. Frequency and type of imaging performed, and treatment prescribed across clinical settings for patients diagnosed with Bell's palsy.

Characteristic	Acute Setting (Urgent Care, Emergency)	Internal Medicine	Specialists (Otology/ Neurology)	Family Medicine	Other
	N = 11,273[1] (31%)	N = 3,265[1] (9%)	N = 5,131[1] (14%)	N = 7,260[1] (20%)	N = 9,013[1] (25%)
Imaging					
MRI within 30 days	1,467 (13%)	346 (11%)	733 (14%)	559 (7.7%)	1,207 (13%)
CT within 30 days	3,324 (29%)	253 (7.7%)	398 (7.8%)	505 (7.0%)	1,319 (15%)
Any Imaging within 30 days	4,109 (36%)	525 (16%)	1,023 (20%)	969 (13%)	2,221 (25%)
Treatment Modality					
No Treatment	7,806 (69%)	2,716 (83%)	4,514 (88%)	6,042 (83%)	7,465 (83%)
Monotherapy	1,821 (16%)	420 (13%)	484 (9.4%)	888 (12%)	1,034 (11%)
Combination Therapy	1,646 (15%)	129 (4.0%)	133 (2.6%)	330 (4.5%)	514 (5.7%)

[1] **n (%)**

[2] **Pearson's Chi-squared test**

DISCUSSION

- Regional differences and gender have statistically significant effects on the likelihood of receiving treatment.
- The South and West regions exhibit higher odds of receiving combination therapy (OR 1.10 and 1.23, respectively), both of which are significant.
- Female patients have significantly lower odds of receiving combination therapy (OR = 0.73, p < 0.001) compared to males.
- 16% (N = 5,799) underwent a CT scan within 30 days of their diagnosis
- 12% (N = 4,312) underwent an MRI within 30 days of their diagnosis
- **Limitations:** No data on recovery, duration, or severity (HB scores); pharmacy claims limited to covered networks.

CONCLUSION

- Our study demonstrates variation in care settings to which patients with Bell's palsy present, highlighting the need for standardized diagnosis and treatment across specialties.

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