

Trends in Procedural Management of Ménière's Disease

Introduction

- Ménière's Disease (MD) is an inner ear disorder characterized by episodic vertigo, tinnitus, and hearing loss. In recent years, there has been increasing interest in and evidence for a relationship between MD and migraine disorders, including data from familial clustering and epidemiological studies.^{1,2}
- Anecdotally, there has been a shift away from procedural management, such as intratympanic (IT) gentamicin injection or surgical labyrinthectomy, which have associated toxicity,³ as MD has been re-framed as a migraine-variant disorder with seemingly increased usage of conservative migraine therapies.
- To our knowledge, there has not been a formal investigation quantifying trends in practice patterns for procedural management of MD.
- We hypothesized that procedural management for MD has declined in usage over time. Our study informs on the implications of reframing MD as a migraine-variant disorder on clinical management.

Methods

- To investigate trends in utilization, the MarketScan Commercial Claims and Encounters and Medicare Supplemental Databases were utilized.
- Medical claims were queried for ICD codes corresponding to MD, including ICD-9 and ICD-10 codes beginning with 386 and H81, respectively.
- A subset of records were isolated via a secondary query for CPT and HCPCS codes corresponding to procedural management of MD (Table 1).

Table 1. CPT and HCPCS Codes of Interest.

| CPT Code | Procedure (HCPCS) |
|----------|---|
| 69801 | IT injection gentamicin (J1580) IT injection dexamethasone (J1100) |
| 69905 | Labyrinthectomy-transcanal |
| 69910 | Labyrinthectomy-transmastoid |
| 69950 | Vestibular nerve section |
| 69805/6 | Endolymphatic sac surgery |

- MD patients with insurance claims containing migraine-associated diagnostic codes, including ICD-9 codes beginning with 346 and ICD-10 codes beginning with G43, were considered to have a migraine diagnosis.
- To eliminate double-counting, analysis was limited to unique patients receiving at least one procedure.

Abbreviations: MD = Ménière's Disease; IT = intratympanic; CPT = Current Procedural Terminology; HCPCS = Healthcare Common Procedure Coding System

Results

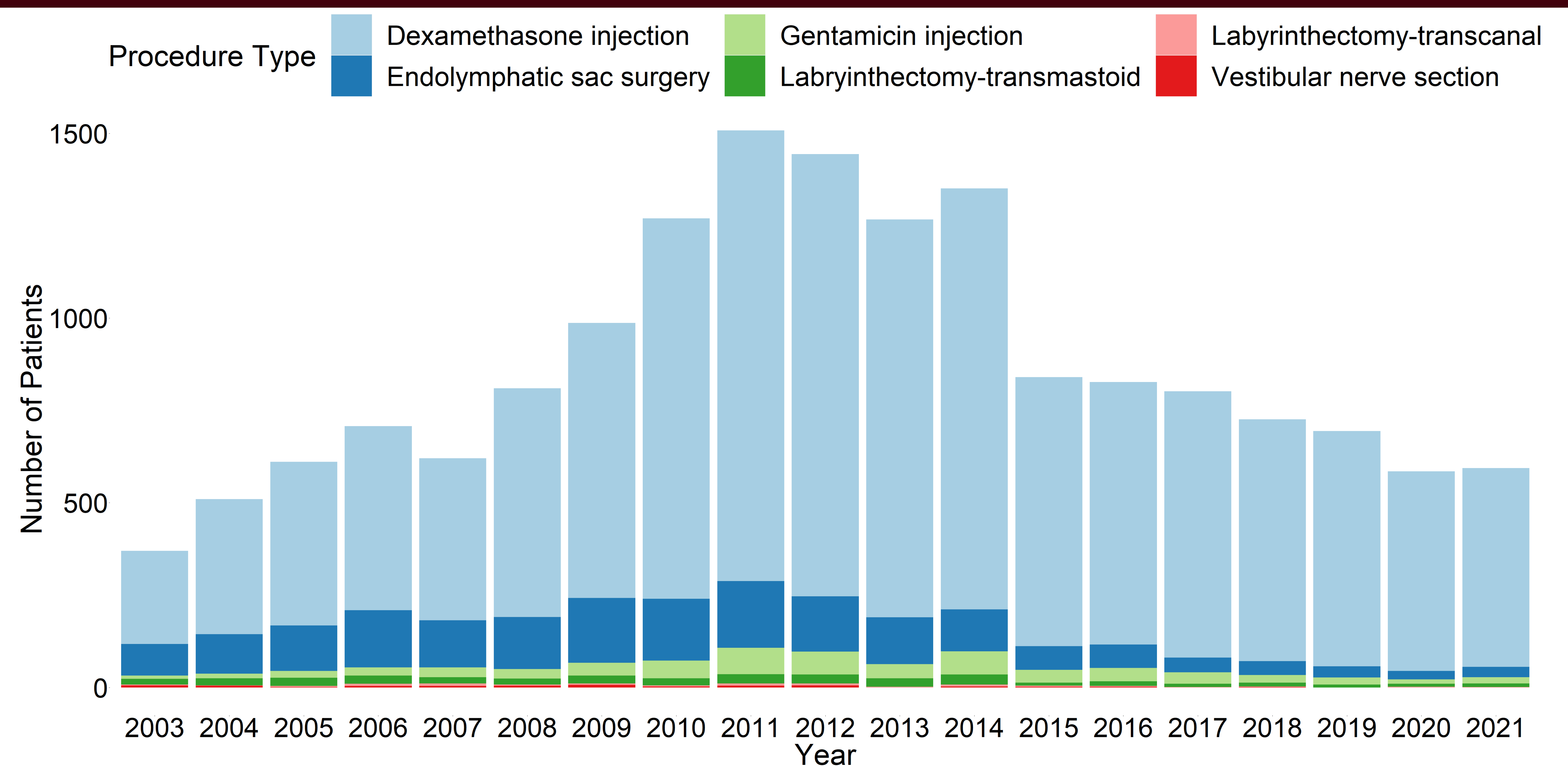


Figure 1. Number of unique MD patients managed with procedures per year, stratified by procedure type.

- Of a total 1.75 million insurance records with MD-associated diagnostic codes from 2003 to 2021 (Total MD Records), a total of 44,831 billing records representing **16,523 unique patients** (mean age 53.1 years) contained CPT codes of interest (Procedural MD Records).
- Total MD Records peaked in 2012 with a **65% decrease from 2013 to 2021** (Figure 2).
- Total Procedural MD Records peaked in 2012 with a **50% decrease from 2013 to 2021**.
- From 2003 to 2021, the proportion of Procedural MD Records of Total MD Records increased from 1.4% to 3.9% (Figure 2).
- The proportion of MD patients managed with endolymphatic sac surgery **decreased from 23% in 2003 to 5% in 2021** while **IT dexamethasone increased from 68% to 91%** (Figure 1).
- Migraine diagnosis in MD patients receiving procedural management increased from 2% in 2003 to 14% in 2021.

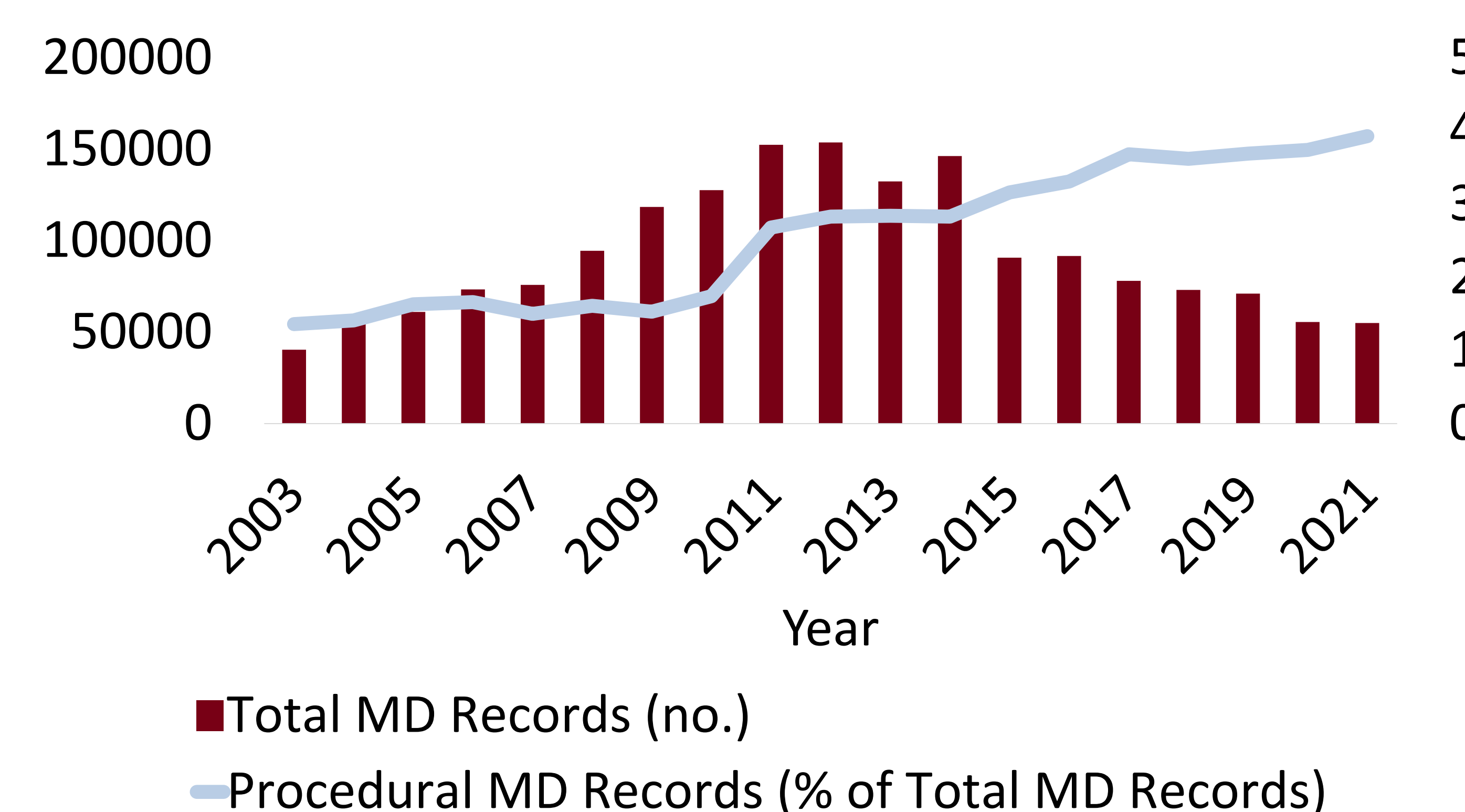


Figure 2. Trends in Total MD Records and Proportions of MD Records Containing CPT Codes of Interest.

Conclusions

- While the total number of procedures performed to manage MD has decreased over the last decade, the proportion of MD patients being managed with procedural therapy has increased from 2003 to 2021, primarily due to an increase in the use of IT dexamethasone.
- IT gentamicin, endolymphatic sac surgery, labyrinthectomy, and vestibular nerve section are not commonly utilized procedures and have shown decreased usage in recent years.
- Limitations include that our data source's completeness might fluctuate annually depending on data sharing agreements with insurers. Additionally, we cannot draw conclusions about rationale for treatment decisions given the lack of clinical details contained in the database.
- Further study is warranted to assess factors contributing to the observed trends in the procedural management of MD patients.

References

- Ghavami Y, Mahboubi H, Yau AY, Maducdoc M, Djalilian HR. Migraine features in patients with Meniere's disease. *Laryngoscope*. 2016;126(1):163-168.
- Kim SY, Lee CH, Yoo DM, et al. Association Between Meniere Disease and Migraine. *JAMA Otolaryngol Head Neck Surg*. 2022;148(5):457.
- Basura GJ, Adams ME, Monfared A, et al. Clinical Practice Guideline: Ménière's Disease. *Otolaryngol Head Neck Surg*. 2020;162(2_suppl):S1-S55.