

Trends in Management of Meniere's Disease: A TriNetX Network Database Analysis



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INTRODUCTION

- Management approaches for Meniere's disease have changed substantially over time. The American Academy of Otolaryngology updated clinical practice guidelines for MD in 2020 to improve diagnostic workup and treatment outcomes.¹
- In this study, we investigated trends in management practices for Meniere's disease, including use of medications, intratympanic injection, and surgery, from 2008-2022 based on the TriNetX network database.

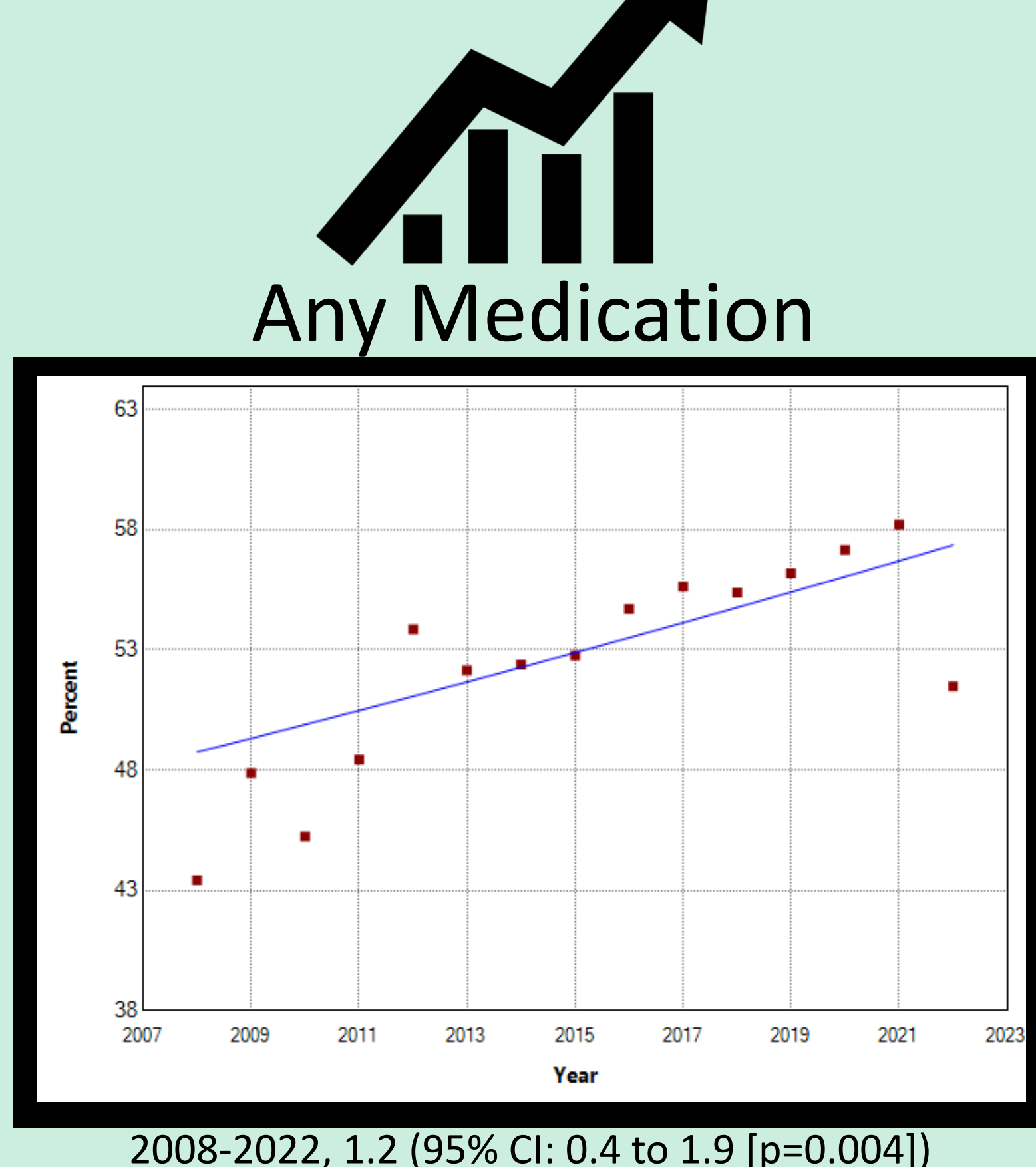
METHODS

- Study Design:** Multi-institution retrospective chart review
- Data Source:** TriNetX, a globally federated health research network providing access to deidentified EMRs across 76 Health Care Organizations and 4 countries (96% U.S.).
- Study Cohort:** Patients diagnosed with Meniere's Disease based on ICD-10 (or ICD-9 if pre-2015) code within each year
- Treatment Groups Analyzed for Temporal Trend Analysis*:**
 - Medications:** Use of medication listed in 2020 AAO guidelines within 12 months of diagnosis.
 - Intratympanic Injection:** Intratympanic injection of either Gentamicin or corticosteroid within 12 months of diagnosis.
 - Labyrinthectomy:** Labyrinthectomy (with or without CI) any time after diagnosis.
 - Endolymphatic Sac Surgery:** Endolymphatic Sac Surgery any time after diagnosis.

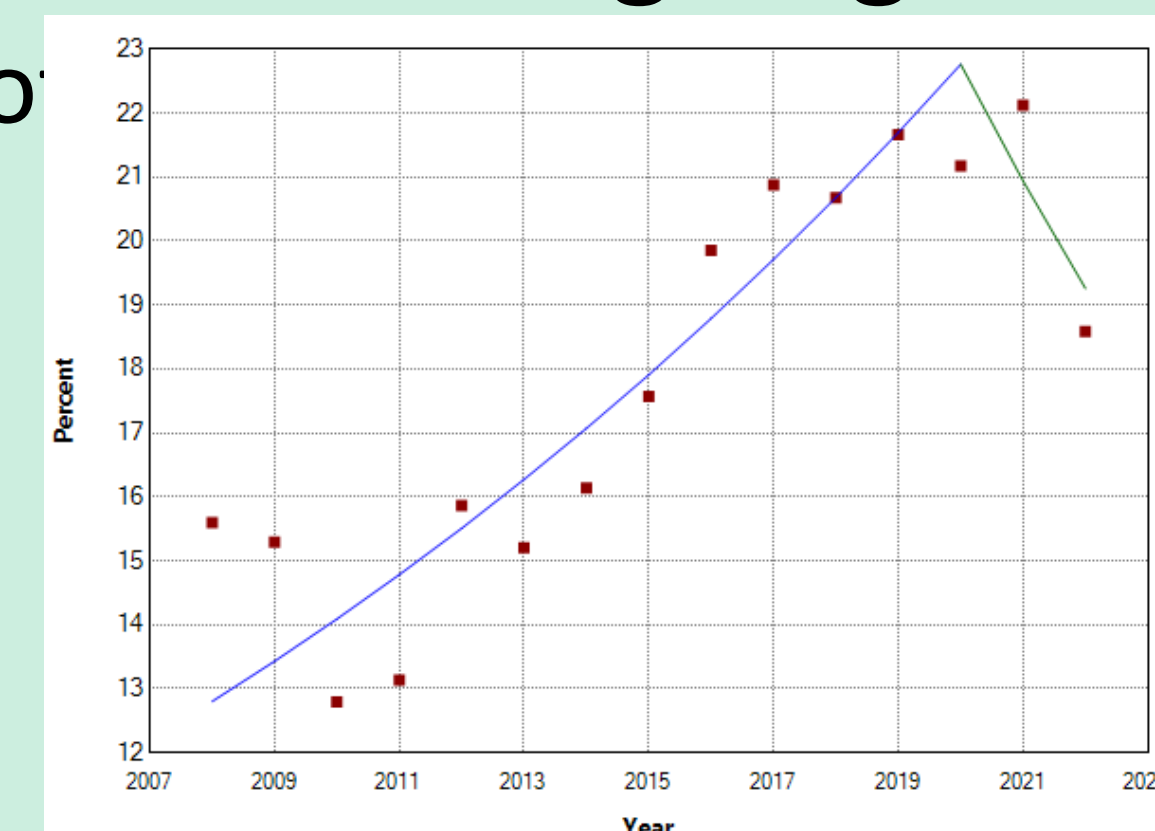
*Year assigned by year of diagnosis, not year of treatment. MD diagnosis assigned by ICD-10 code. Treatment defined by RXNorm and CPT codes.

RESULTS

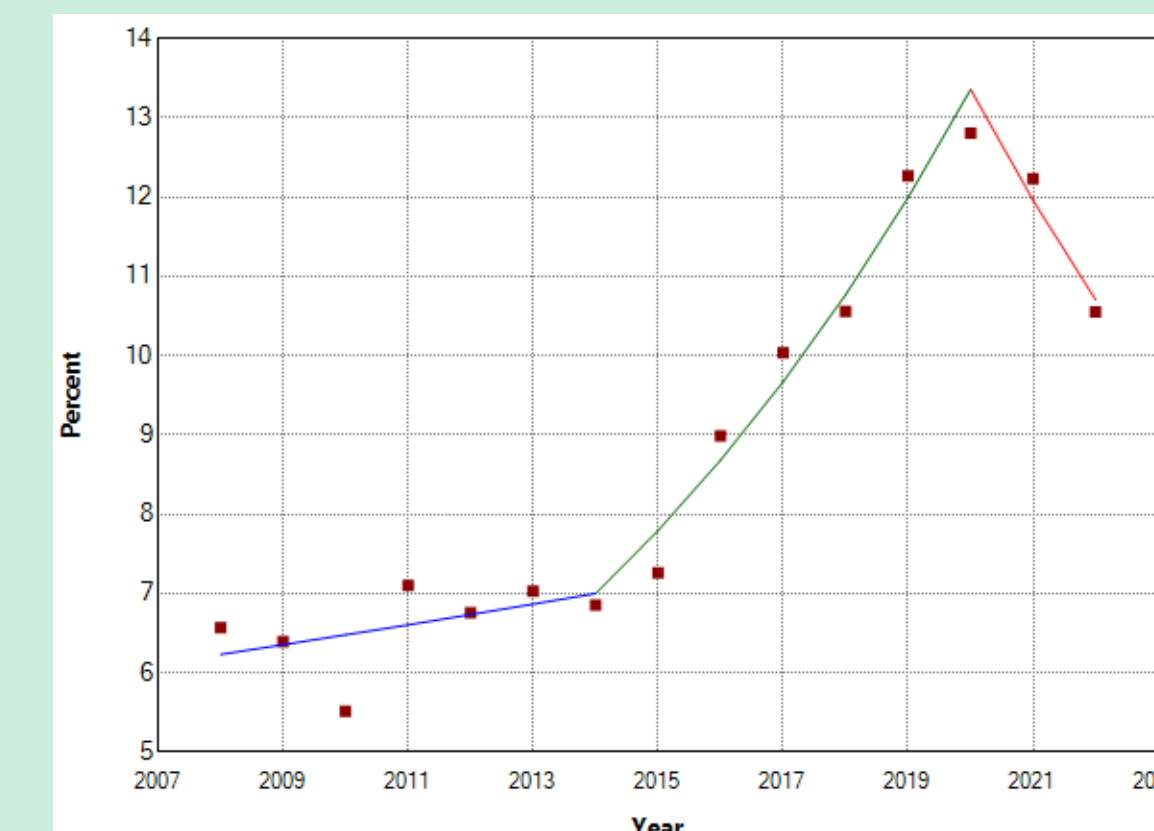
Finding 1: Use of any medication for Meniere's disease within 12 months of diagnosis (below) has risen based on Annual Percent Change ($p=0.004$); trends have varied between medication classes.



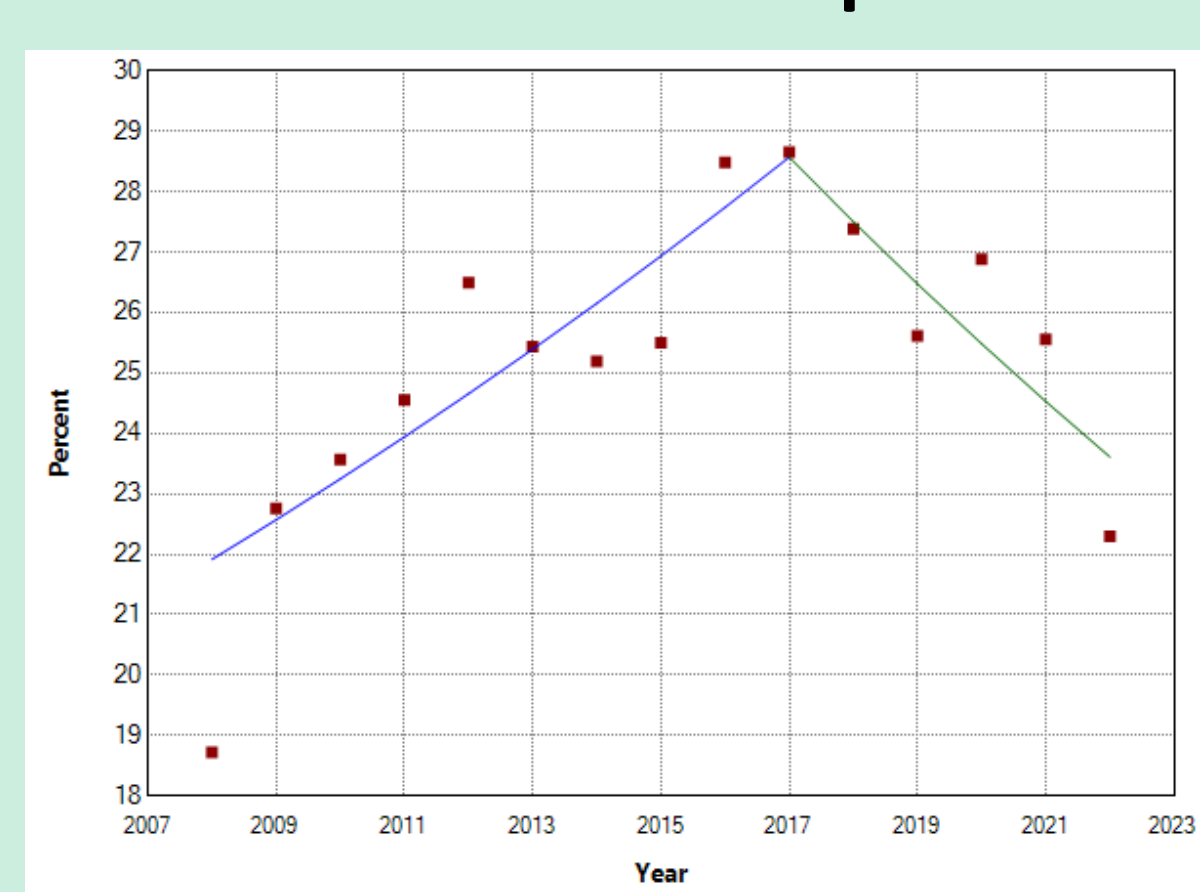
Antivertigo Agent



Antihistamine



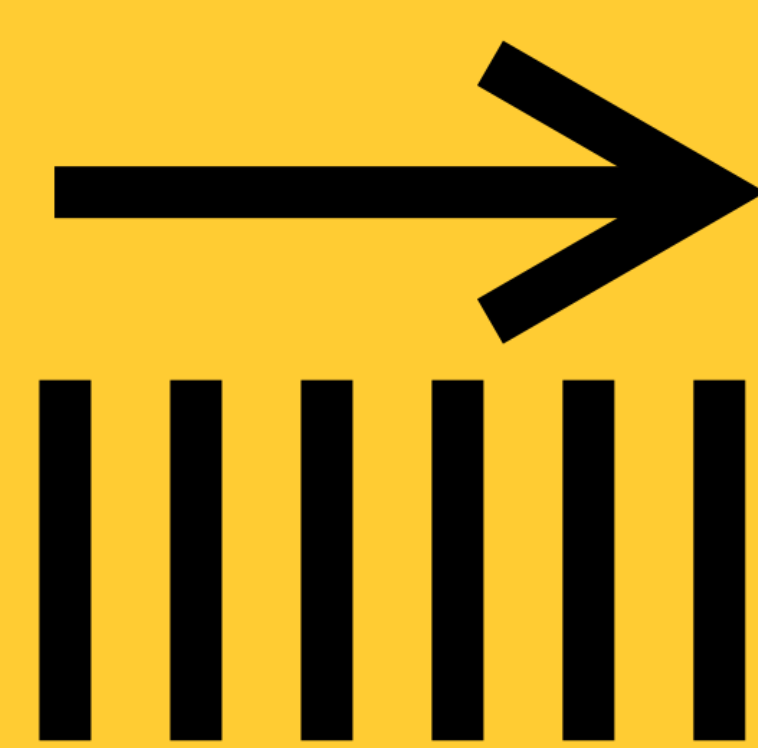
Benzodiazepine



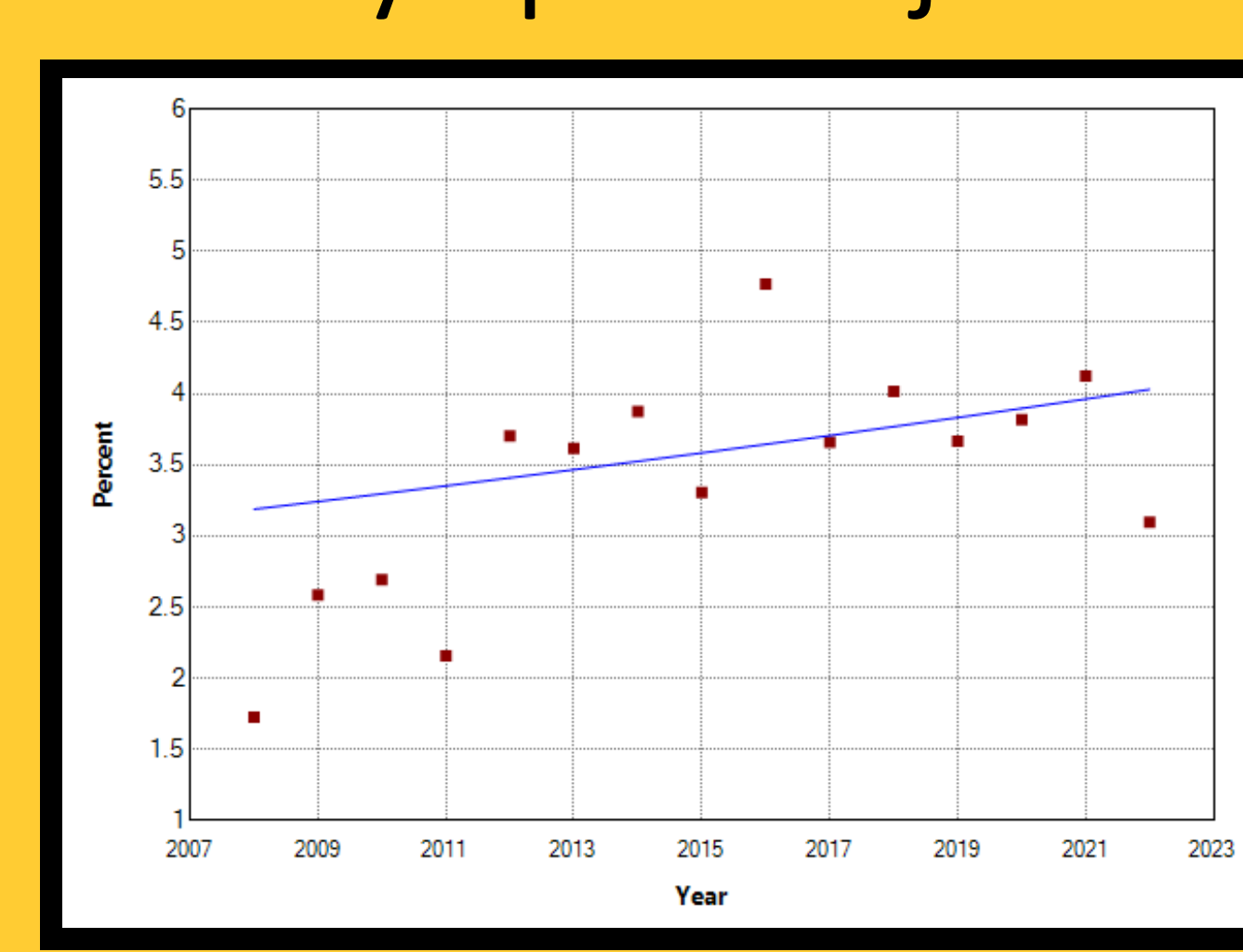
Diuretic



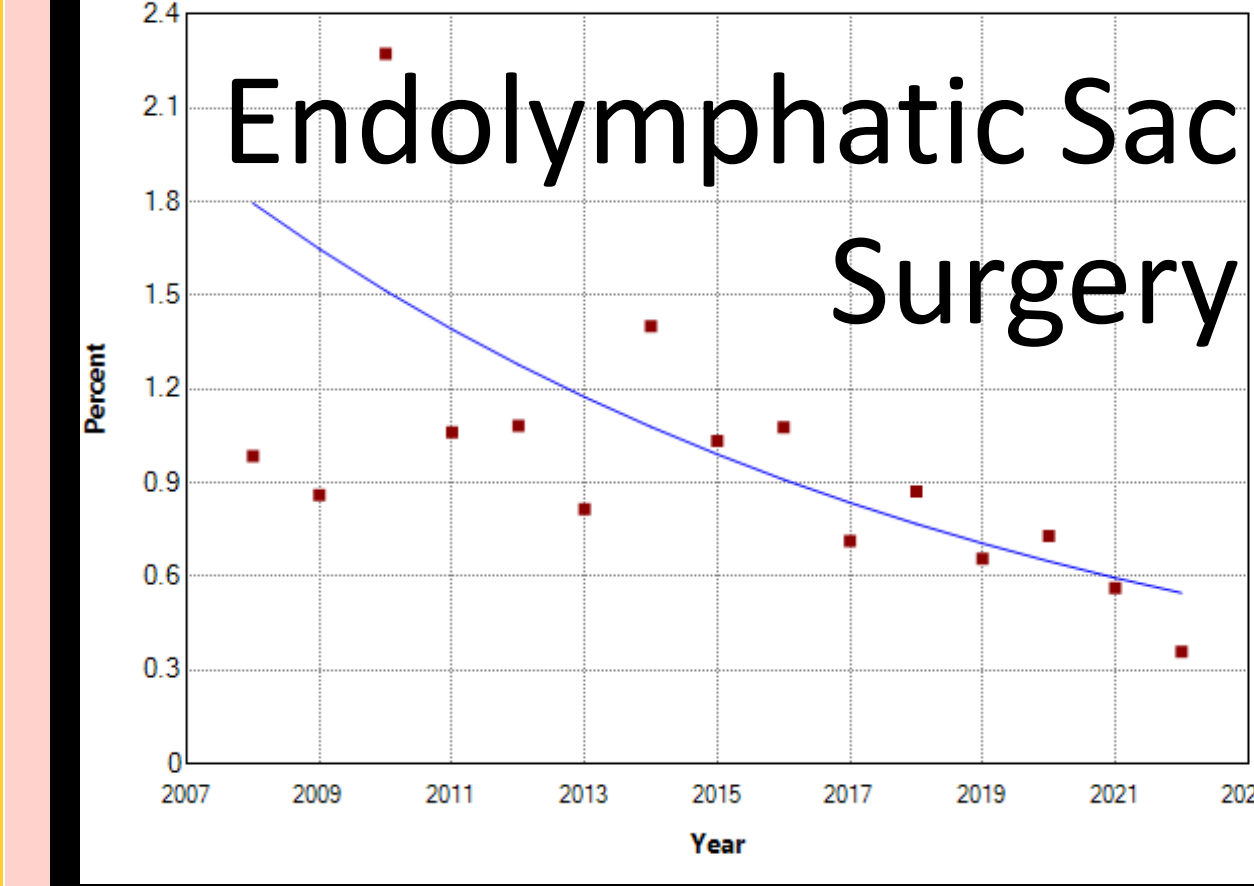
Finding 2: Use of intratympanic injection within 12 months (either corticosteroid or gentamicin) has been stable based on Annual Percent Change ($p=0.213$).



Intratympanic Injection

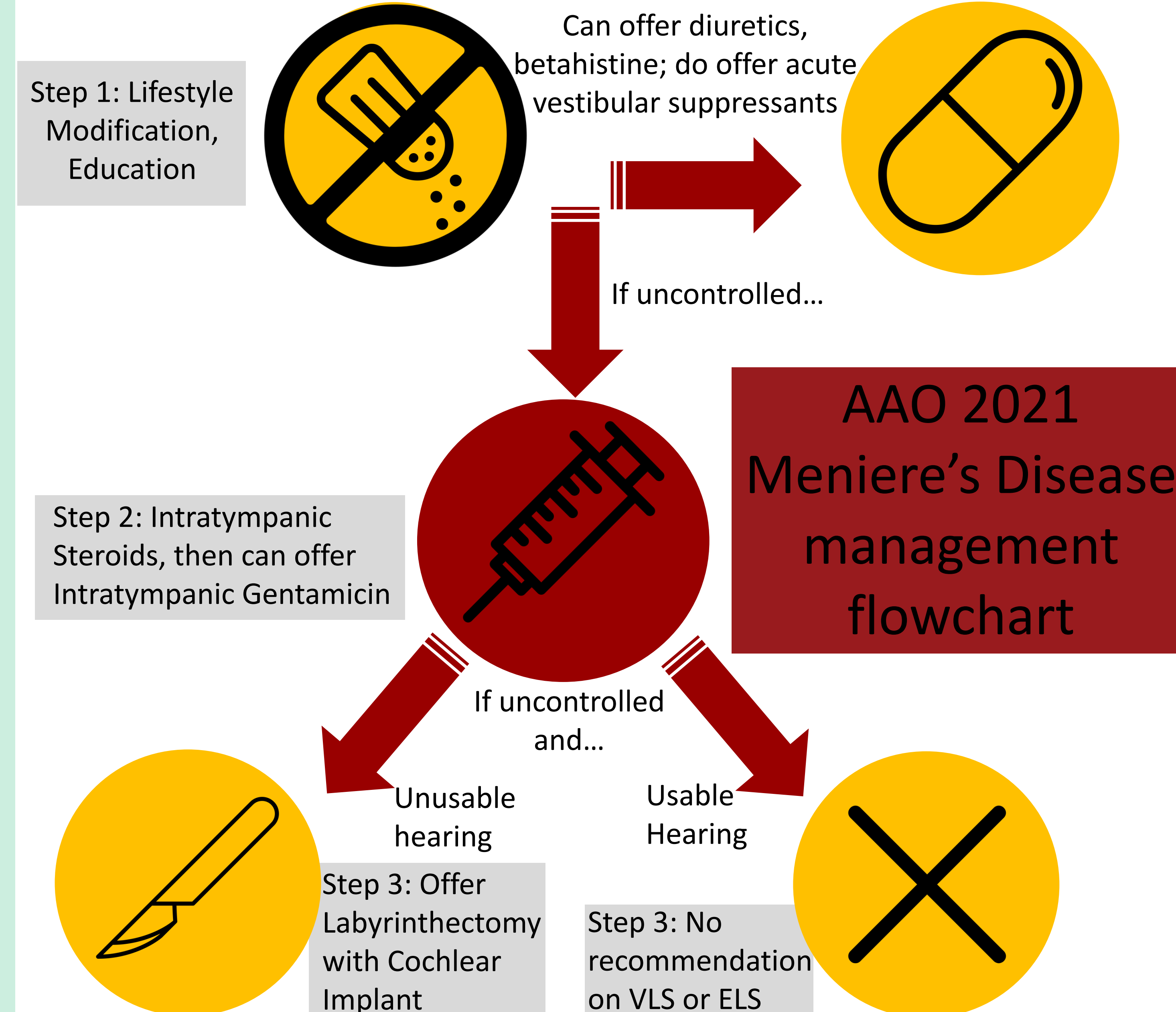


Finding 3: Endolymphatic sac surgery and labyrinthectomy any time after diagnosis has decreased based on Annual Percent Change ($p=0.001$ for both).



Discussion

- In this database analysis, **medication use in the early stages of MD increased**, utilization of intratympanic injection of steroids or gentamicin remained stable, and use of surgical interventions including endolymphatic sac surgery and labyrinthectomy decreased from 2008-2022.
- This study demonstrates a **plateau in the use of intratympanic injection** – a novel finding after previously documented increases in the 1990s which may represent general acceptance of the strategy in tertiary centers comprising the cohort.
- The **use of surgical interventions has steadily decreased over time**. AAO guidelines emphasize surgical labyrinthectomy to be offered to a small subset of patients refractory to conservative treatments with nonusable hearing. No recommendation was made regarding the use of endolymphatic sac surgery due to discordant study results.
- Limitations include inability to identify the composition of the cohort and its changes over the study period, data primarily from tertiary centers in the U.S., and variable accuracy of the Meniere's disease diagnosis and treatment codes.
- In conclusion, **the use of medical management has significantly increased for early management of MD, and the overall use of surgical treatments has decreased**. Our findings imply an increasing use of less invasive approaches for MD management, in line with the updated clinical guidelines.



References

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