

Intratympanic Steroids for Meniere's disease: a meta analysis



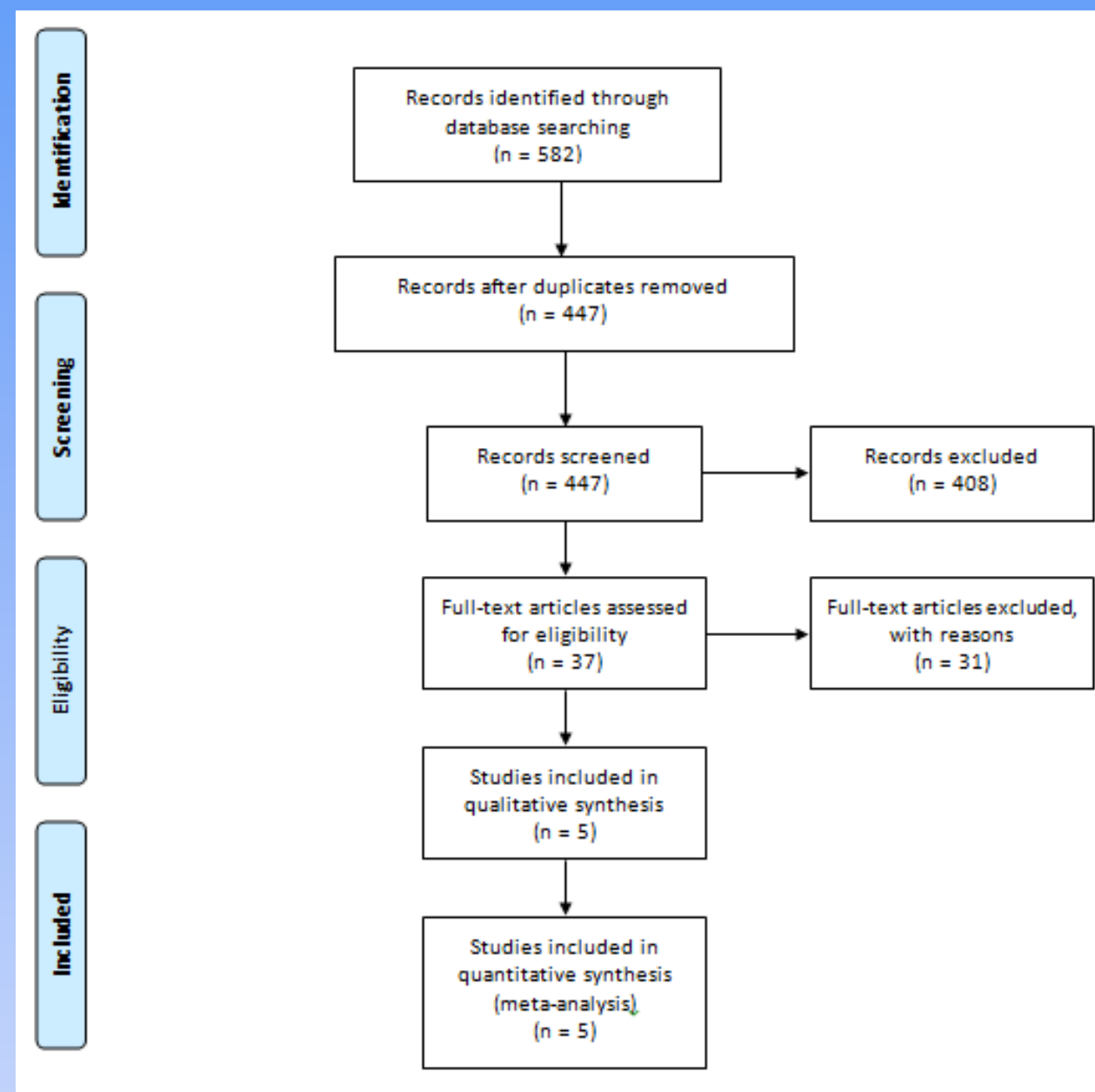
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INTRODUCTION

Meniere's disease (MD) is characterized by episodic vertigo, sensorineural hearing loss, and tinnitus. Various treatment options exist, including diuretics, intratympanic gentamycin, and even surgery. More recently, intratympanic steroids (ITS) has grown in popularity in the management of MD, partly due to ease of administration in the office, repetitive treatments, and increased concentration of steroid in the inner ear. The purpose of this study was to aggregate the published data and to quantify the long term efficacy of ITS in the management of vertigo and hearing loss seen in MD.

METHODS



This study consisted of analysis of articles on the use of intratympanic steroids for MD. Inclusion criteria for this study included both prospective cohorts and randomized control trials reporting data using the 1985 to 1995 AAO-HNS guidelines in English with at least 18 months of follow-up. Endpoints were vertigo control and hearing preservation using AAO-HNS guidelines for audiometric data, including pure tone average (PTA) and speech discrimination scores (SDS).

RESULTS

Five articles totaling **138 patients** qualified and with extractable data

- Complete control of vertigo in **45.6%** (95% CI, 27.5%-64.4%)
- Substantial control of vertigo in **23.3%** (95% CI, 15.8%-32.3%)
- A >10 dB improvement in **23.2%** (95% CI, 12.9%-35.6%)
- **No change** in PTA or SDS (not shown) after >18 months of therapy

Figure 1. Total Class A

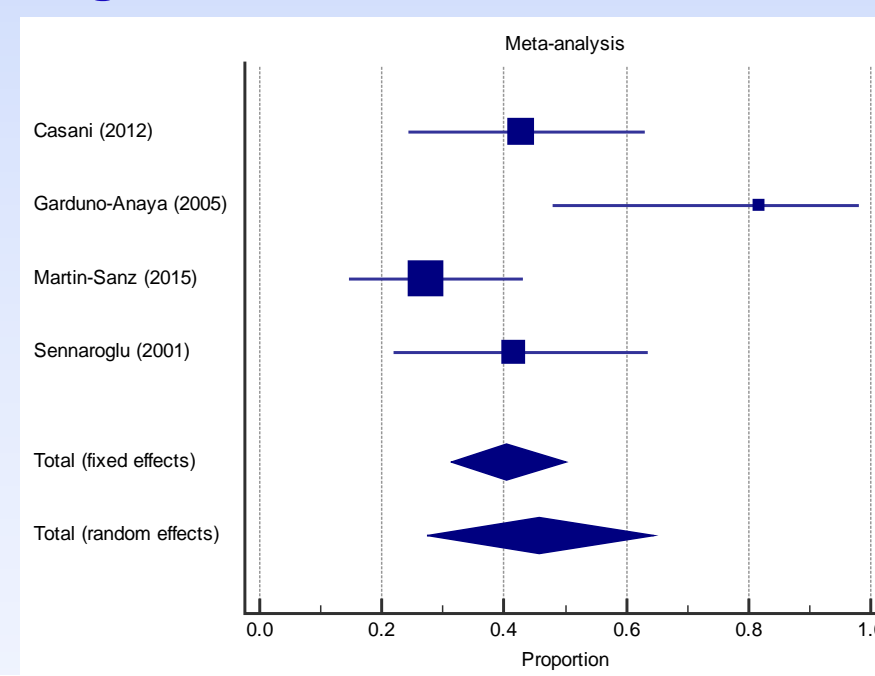


Figure 2. Total Class B

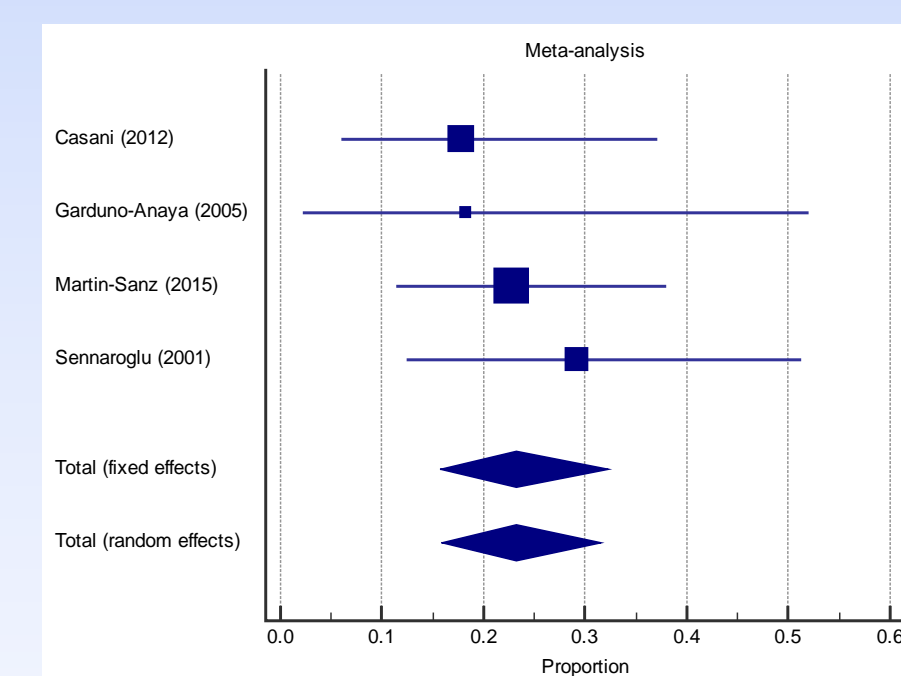


Figure 3. >10dB Improvement

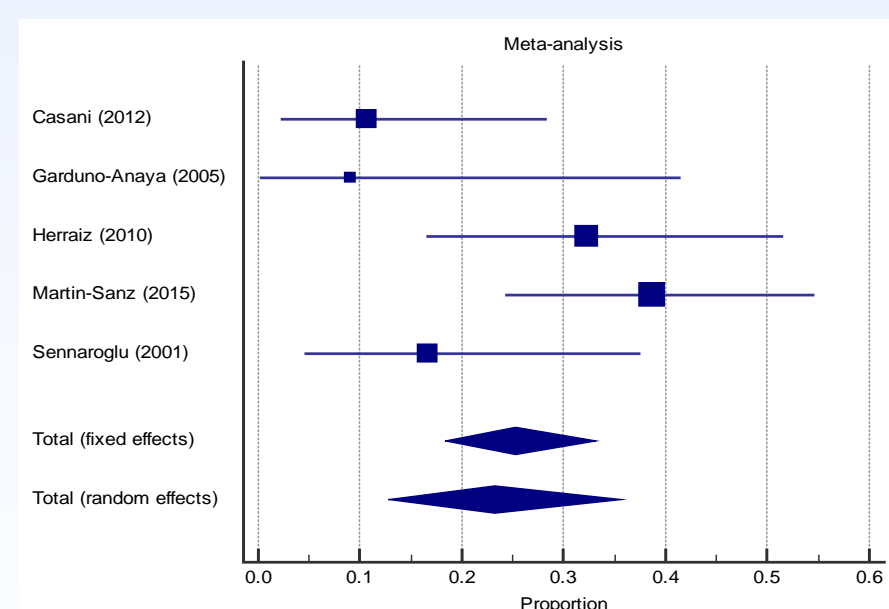


Figure 4. PTA

Study or Subgroup	Post-procedure			Pre-procedure			Std. Mean Difference	
	Mean	SD	Total	Mean	SD	Total	IV, Fixed, 95% CI	Std. Mean Difference IV, Fixed, 95% CI
Casani 2012	56	17.3	28	56.5	13.4	28	39.3%	-0.03 [-0.56, 0.49]
Garduno-Anaya 2005	53.4	16.9	11	55.7	18.2	11	15.4%	-0.13 [-0.96, 0.71]
Herraiz 2010	57.9	19.4	31	61.6	19.1	34	45.3%	-0.19 [-0.68, 0.30]
Total (95% CI)			70			73	100.0%	-0.12 [-0.45, 0.21]

Heterogeneity: Chi² = 0.19, df = 2 (P = 0.91); I² = 0%
Test for overall effect: Z = 0.70 (P = 0.48)

CONCLUSION

ITS can be considered as an option for patients with intractable Meniere's disease. The studies included in this meta-analysis have a heterogeneous ITS protocol and further research must be done to determine the most effective timing and dosage for ITS therapy.

1. Casani AP, Piaggi P, Cerchiai N, Seccia V, Franceschini SS, Dallan I. Intratympanic treatment of intractable unilateral Meniere disease: gentamicin or dexamethasone? A randomized controlled trial. *Otolaryng Head Neck Surg.* 2012; 146:430-437.
2. Garduno-Anaya MA, De Toledo HC, Hinojosa-González R, Pane-Pianese C, Ríos-Castañeda LC. Dexamethasone inner ear perfusion by intratympanic injection in unilateral Ménière's disease: A two-year prospective, placebo-controlled, double-blind, randomized trial. *Otolaryng Head Neck Surg.* 2005; 133:285-294.
3. Herraiz C, Plaza G, Aparicio JM, Gallego I, Marcos S, Ruiz C. Transtympanic steroids for Meniere's disease. *Otol Neurotol.* 2010; 31:162-167.
4. Martin-Sanz E, Esteban-Sanchez J, Rodríguez-Riesco L, Sanz-Fernández R. Transitory effect on endolymphatic hydrops of the intratympanic steroids for Ménière's disease. *Laryngoscope* 2015; 125:1183-1188.
5. Sennaroglu L, Sennaroglu G, Gursel B, Dini FM. Intratympanic dexamethasone, intratympanic gentamicin, and endolymphatic sac surgery for intractable vertigo in Meniere's disease. *Otolaryng Head Neck Surg* 2001; 125:537-543.