

Intratympanic Steroid Injection in Sudden Sensorineural Hearing Loss: Shorter Intervals, Better Outcome?

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Introduction

Intratympanic steroid injections (ITSI) are commonly used to treat sudden sensorineural hearing loss (SSNHL). However, the standard practice in performing ITSI still varies.

Purpose

To review the **effect of interval length difference on performing ITSI** in SSNHL.

Methods

- A **systematic review** of articles in 2020 - 2025 → **PRISMA guideline**
- Keywords :
 - “intratympanic steroid injection (AND) sudden sensorineural hearing loss (AND) interval”**
- Google Scholar, PubMed/MEDLINE, and Cochrane Library.
- Quality article assessment → JBI Critical Appraisal

Results

- 3 studies; **190 patients with SSNHL**
 - 50 patients → daily injections**
 - 140 patients → intervals of more than one day.**
- A range of **0.4 – 0.8 ml ITSI → lower** the value of **mean PTA by 20,74 dB ± 21,15 dB.**
- Daily ITSI → greater improvement** in **hearing threshold (27.74 ± 24.18 dB vs. 17.62 ± 19.71 dB); 10% higher** of **complete recovery.**
- Secondary intervention 6% higher recovery rate** than primary, **but primary intervention improved the hearing threshold higher by 26 ± 24.81 dB** than secondary injections (12.7 ± 15.40 dB)

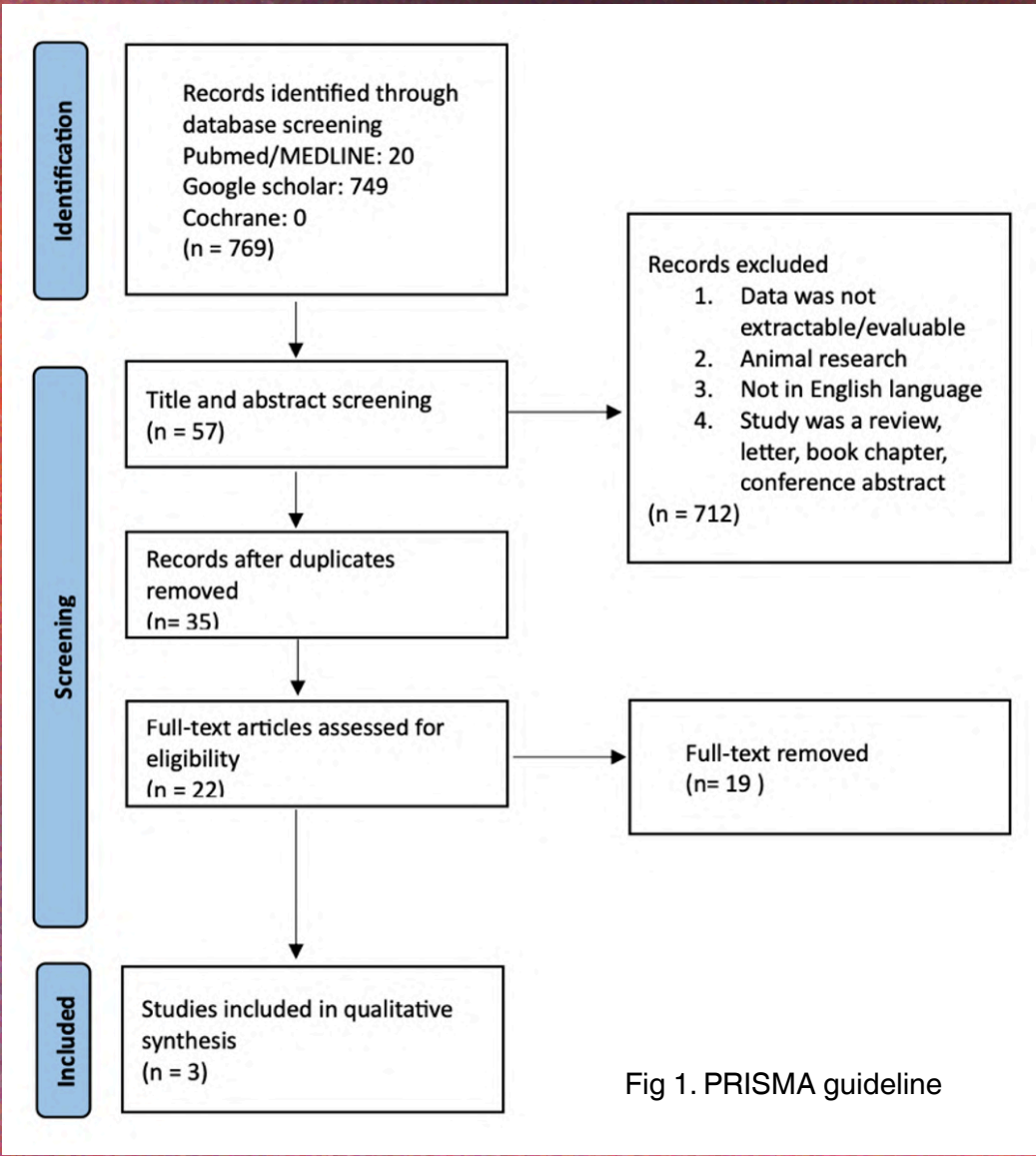


Fig 1. PRISMA guideline

Table 1. Demographic information of included studies.

| Author | Study type | N | Country | Primary vs Secondary/Salvage treatment | ITS type | ITS Route | Number of sessions or injections |
|---|---------------------|----|---------|--|---|-----------|----------------------------------|
| Andrianakis, et al. (2022) ⁴ | Case-control study | 64 | Austria | Secondary or salvage | 0.4–0.8 ml triamcinolone acetonide | Injection | 3 - 4 injections |
| HK Sung, et al. (2020) ⁵ | Retrospective study | 51 | Korea | Primary | 0.4-0.6 mL dexamethasone disodium phosphate | Injection | 4 sessions |
| MY Kwak, et al. (2020) ⁶ | Retrospective study | 75 | Korea | Primary | 0.4–0.5 mL dexamethasone disodium phosphate | Injection | 4 sessions |

| Author | Intervals of ITSI | DOS to initial treatment (days) | Criteria of complete recovery | Recovery rate | | |
|---|---|--|--|---|--|--|
| | | | | complete | partial | no response. |
| Andrianakis, et al. (2022) ⁴ | Initial : 1 week interval Revised : 2–4 days interval | Initial protocol : 9.4 ± 4.7 Revised protocol : 8.6 ± 4.6 | If the final PTA improved to within 10 dB of baseline PTA | Initial: 37.5% revised: 46.9% | Initial: 53.1% revised:37.5% | Initial: 9.4% revised: 15.6% |
| HK Sung, et al. (2020) ⁵ | Group 1 : 1 day interval Group 2: 2-3 days interval (2.21±1.05 days) | Group 1: 3.25 ± 3.32 group 2: 4.33 ± 4.50 average duration : 3.76 ± 3.92 | Final hearing level better than 25dB regarding the amount of gain (Siegel's criteria) | Group 1: 15 Group 2: 14 | Group 1: 3 Group 2: 3 | Group 1: 9 Group 2: 5 |
| MY Kwak, et al. (2020) ⁶ | Group 1 : 1 day interval Group 2 : 2 days interval Group 3 : 3 days interval Group 4 : 4 days interval | Group 1: 6.52 ±4.14 Group 2: 8.13 ±4.62 Group 3: 7.23 ±5.23 Group 4: 7.91 ±4.51 | Return to within 10 dB HL of the unaffected ear and recovery of SDSs to within 5% to 10% of the unaffected ear | Group 1: 34.8% Group 2: 26.7% Group 3: 23.1% Group 4: 4.2% | Group 1: 43.5% Group 2: 46,6% Group 3: 38.5% Group 4: 47.7% | Group 1: 21.7% Group 2: 26.7% Group 3: 38.5% Group 4: 32.0% |

Conclusion

Daily intervals of ITSI as primary intervention are more favourable to complete recovery than secondary intervention in managing SSNHL.

Please scan for references

