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Auriculotemporal Nerve Block for TMJ: A Systematic Review

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Abstract

- The purpose of this systematic review is to evaluate auriculotemporal nerve blocks for temporomandibular joint (TMJ) disorder management
- 583 articles reviewed from five databases, selected four studies for pooled analysis on visual analog scale (VAS) and maximum mouth opening (MMO) outcomes
- Pooled analysis showed significant improvement in VAS (-2.27, $p < 0.001$) and MMO (0.94, $p = 0.03$) post-auriculotemporal nerve blocks for TMJ disorder
- Auriculotemporal nerve blocks demonstrate potential effectiveness in TMJ disorder treatment, warranting further research on long-term effects and side effects

Introduction

- TMJ is a crucial joint connecting the mandible to the skull, essential for various orofacial functions
- Temporomandibular joint disorders (TMJD) encompass diverse acute and chronic pain conditions, affecting quality of life and prevalence ranges from 5% to 12%
- TMJDs are classified based on Research Diagnostic Criteria and have multiple etiologies, necessitating comprehensive investigation for effective treatment
- Initial treatments for TMJDs include NSAIDs, muscle relaxers, and conservative modalities like biofeedback and physical therapy, with invasive options for severe cases

Methods

- The systematic review followed PRISMA guidelines but couldn't conduct a meta-analysis due to insufficient clinical study numbers
- Inclusion criteria encompassed studies on auriculotemporal nerve blocks for TMJ dysfunction, including various study types and comparison measures like physical therapy
- Exclusion criteria excluded single-patient reports, non-English publications, and studies not focused on TMJ issues or using auriculotemporal nerve blocks for other ailments
- The search strategy involved systematic database searches using specific key phrases related to TMJ, auriculotemporal nerve, and pain efficacy

Results

- Initial database query: 583 results, 275 duplicates removed, 303 excluded after title/abstract screening, and 1 full-text article excluded, leaving 4 articles for analysis
- Pooled analysis of 82 patients undergoing ATNB for TMJDs showed a significant improvement in VAS (-2.27, $p < 0.001$) and MMO (0.94, $p = 0.03$), indicating substantial pain reduction and increased mouth opening

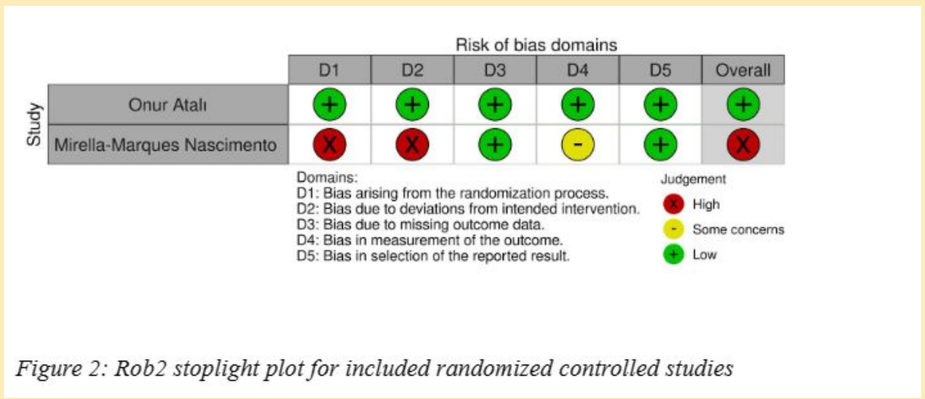

Figure 2: Rob2 stoplight plot for included randomized controlled studies

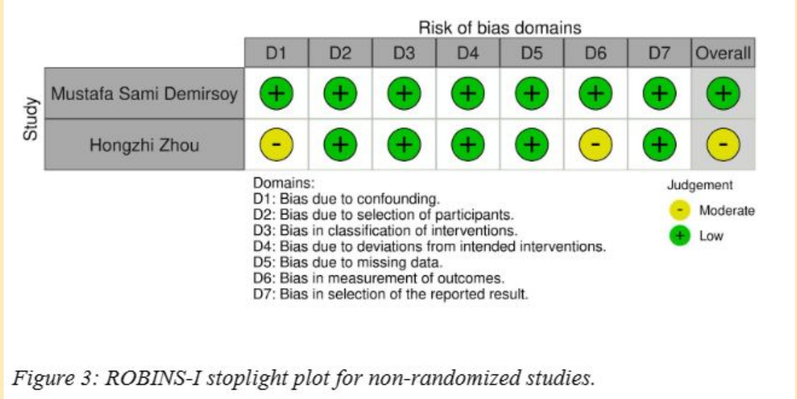

Figure 3: ROBINS-I stoplight plot for non-randomized studies.

Discussion

- This paper represents the first systematic review and pooled analysis on the efficacy of ATNBs for TMJDs
- Despite study heterogeneity limiting a traditional meta-analysis, a pooled analysis of three studies showed significant pain reduction and improved jaw function post-ATNB treatment
- Studies investigated various interventions, all showing positive outcomes in reducing pain and improving jaw function, particularly interventions targeting ATN and mandibular movements
- Differences in interventions and study designs were noted, emphasizing the need for larger sample sizes, control groups, and longer-term follow-ups

Conclusion

- Future research should focus on increasing high-quality clinical trials, exploring long-term effects, investigating side effects, and addressing limitations such as small sample sizes and study heterogeneity

Acknowledgments

APSEA - American Preventative Screening and Education Association