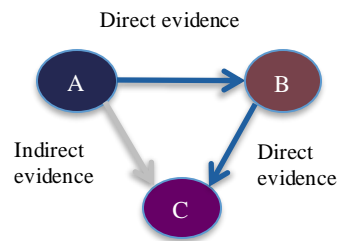# Zygomatic- Implant Fixed Rehabilitation for the Atrophic Edentulous Maxilla: Protocol for a Systematic Review and Network Meta-Analysis

Anisha Rodrigues[1], Samer Abi-Nader[1], Robert Durand[2], Pierre Rompre[2], Amal Idrissi Janati[1] Elham Emami[1]

[1]Faculty of Dental Medicine and Oral Health Sciences, McGill University, Montreal, Canada, [2] Université de Montreal, Montreal, Canada
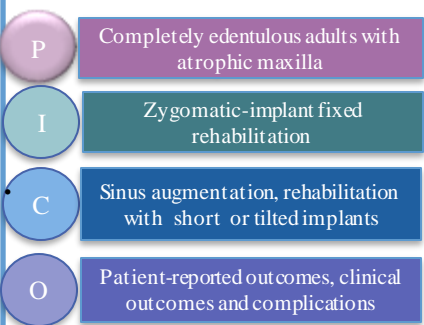
Background

➢Atrophic edentulous maxilla is a debilitating condition of the jaw with bone of inadequate volume and density[1].

➢Rehabilitation of the atrophic edentulous maxilla with dental implants is therefore extremely challenging because of complex reconstructive procedures such as bone grafts and sinus-lift that involve serious complications and morbidity[2].

➢Zygomatic- implant fixed rehabilitation has been suggested as an alternative due to high implant survival rates reported in literature[3].

➢Presently, the evidence is insufficient for optimal clinical decision-making due to limited studies comparing zygomatic implants with other rehabilitation techniques.

➢The Network Meta Analysis (NMA) can overcome this limitation as it can compare multiple treatments through the common comparators in a single analysis[4].

Direct evidence

Indirect evidence

Direct evidence

Research question

Are edentulous patients who have received maxillary zygomatic-implant fixed rehabilitation more satisfied with the treatment compared to those who have received other types of maxillary implant-supported rehabilitation?

P — Completely edentulous adults with atrophic maxilla

I — Zygomatic-implant fixed rehabilitation

C — Sinus augmentation, rehabilitation with short or tilted implants

O — Patient-reported outcomes, clinical outcomes and complications

Objectives

To evaluate the effectiveness of zygomatic-implant fixed rehabilitation in comparison to other implant-supported fixed rehabilitation techniques with regard to patient-reported and clinical outcomes.

• **Primary outcome:** Patient satisfaction.

• **Secondary outcomes:** Quality of life, implant survival, and complications

Methods

➢The NMA will be conducted and reported according to PRISMA-NMA extension statement[5]

➢ **Search strategy:** Comprehensive electronic search through MEDLINE, Web of Science, EMBASE and Cochrane Library.

➢ **Eligibility Criteria:**

• **Type of studies:** Experimental and observational studies that have assessed outcomes with a minimum follow up of 6 months after functional loading.

• **Language:** Articles in English and French

• **Setting:** Any dental care setting.

➢ **Data collection:** Title and abstracts screening by two independent reviewers after a pilot test on 10% of randomly selected included studies.

•Disagreement resolved through discussion or a third reviewer.

➢**Data extraction:** By 2 independent reviewers using a standardized, electronic data collection form in Microsoft Excel.

➢ **Risk of bias:** The Cochrane Risk-of-Bias tool (ROB 2) for Randomized trials and the Risk of Bias In Non-randomized Studies - of Interventions.

Data analysis

• Qualitative synthesis and random effects pairwise meta-analysis

• Statistical heterogeneity: I^2 and between-study variance (τ^2).

•Transitivity assessment: distribution of the effect modifiers between treatment groups.

Network meta-analysis

A network plot to connect the interventions directly and indirectly.

• Inconsistency assessment: For the entire network through the global approach, and within individual loops through the local approach.

• Ranking of interventions using the Surface Under the Cumulative Ranking Curve[6].

• Overall quality of evidence assessment using

Preliminary Results

The electronic search yielded 1064 studies for screening. Title and abstract screening resulted in 76 studies for full-text screening. In the full-text screening, 10 articles were eligible for data extraction.

Significance

➢To our knowledge this project is the first to assess the effectiveness of zygomatic-implant fixed rehabilitation using NMA.

➢The findings will advance the knowledge on rehabilitation and aid both clinicians and patients in clinical and informed decision-making.

References

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