One-stage versus two-stage bone conduction device implantation in children: a review

Objective
To compare the rate of implant loss in one-stage versus two-stage bone conduction device (BCD) implantation in children

Methods
A systematic search was performed for primary articles reporting on rates of implant loss in one and two stage surgery for BCD implantation in children. Articles were selected, screened and a critical appraisal was performed using a modified Robins I tool. For each study, implant loss rates, relative risk ratios and their confidence intervals were calculated.

Results
No randomized controlled trials were identified. The overall validity and applicability of all studies were comparable.

Outcome
Implant loss rates reported
- One-stage surgery: 0% - 14.3% for one-stage
- Two-stage surgery: 7.1% to 50%
- Relative risks: 0.021 - 0.857 respectively and were not significant.

Conclusion
There is no significant difference in implant loss between one-stage and two-stage BCD implantation in children.

Future directions
Due to lack of randomized studies and studies with large sample sizes the power of evidence in this report is weak. RCT’s with larger number of participants, matching age-categories and longer duration of follow up are needed to draw conclusions.

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