

Does Osteotomy Location Matter?

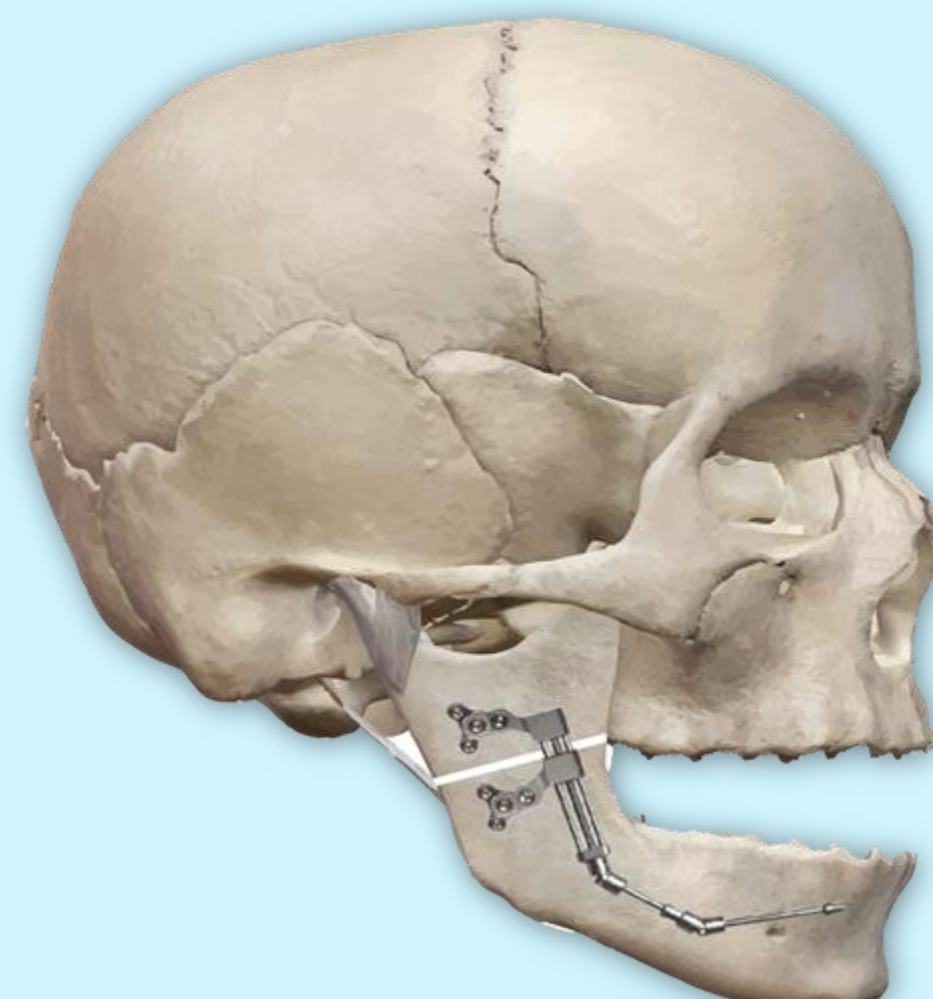
Mandibular Ramus Versus Mandibular Body Distraction Osteogenesis in the Treatment of Pierre Robin Sequence: A Systematic Review and Meta-Analysis.

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BACKGROUND: Consensus is lacking regarding the optimal location for osteotomy placement in mandibular distraction osteogenesis (MDO) in the treatment of severe upper airway obstruction (UAO) in infants with Pierre Robin Sequence (PRS).

OBJECTIVE: To evaluate the effectiveness of mandibular ramus (MR) versus mandibular body (MB) osteotomies in MDO, for the treatment of UAO in children with PRS, using a meta-analytic approach.

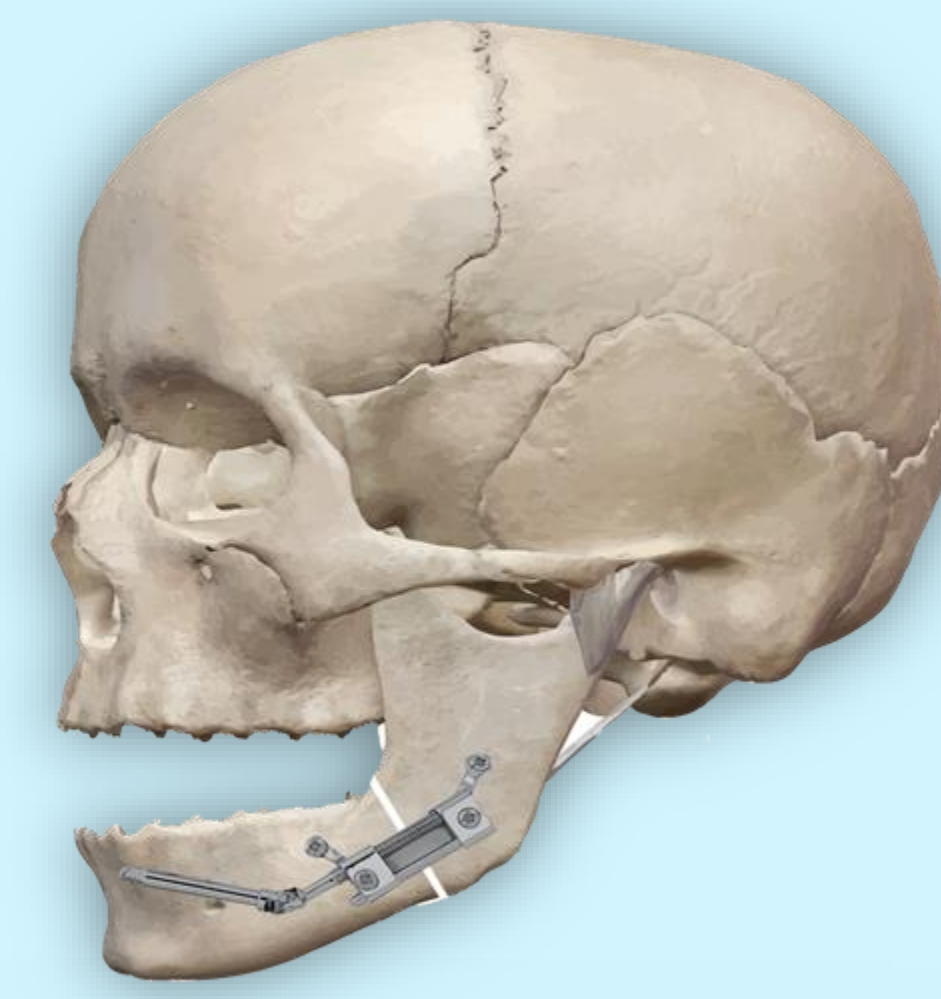
METHODS: Systematic Search Strategy

Techniques and outcomes of MDO in PRS

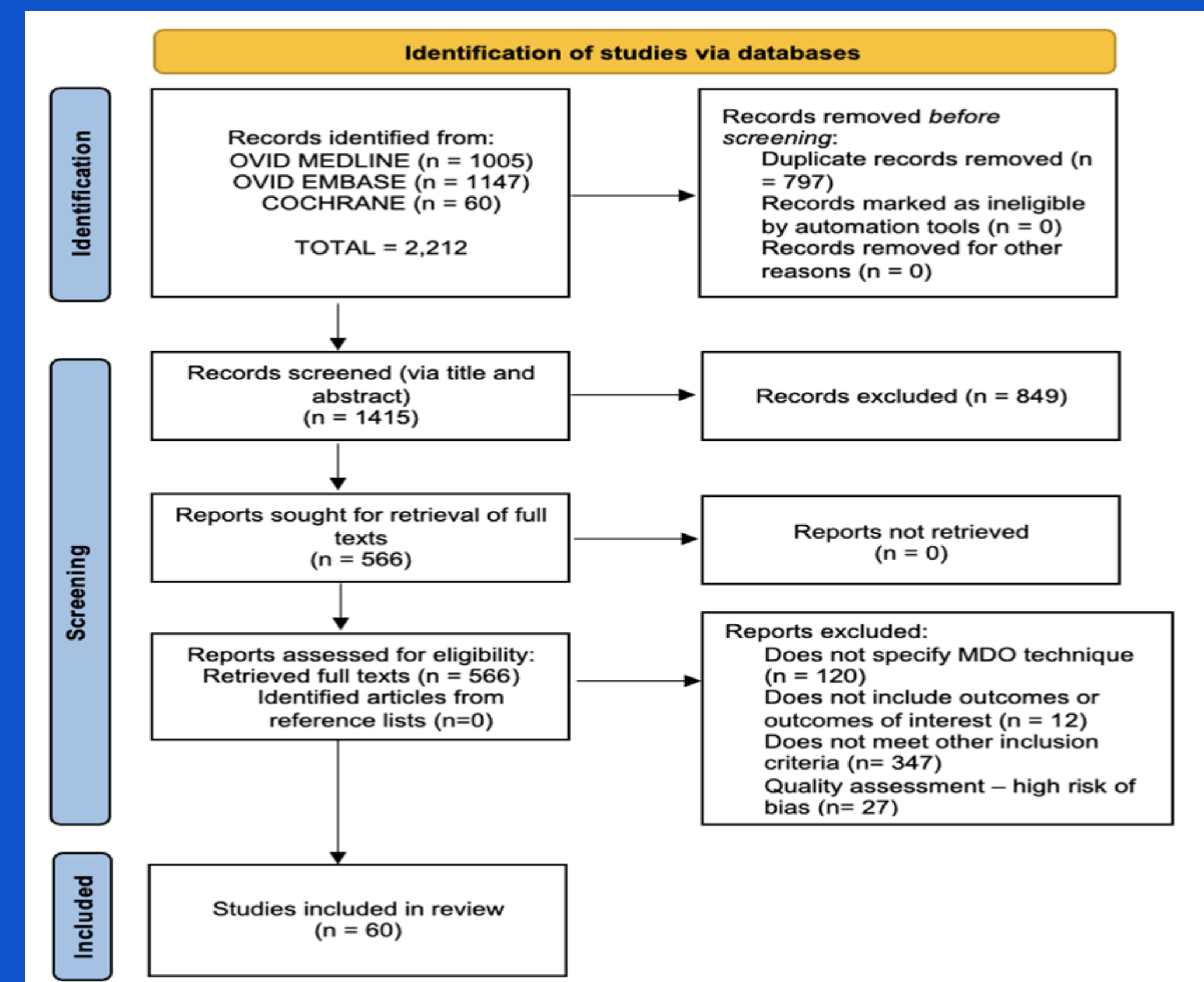
November 1972

November 2022

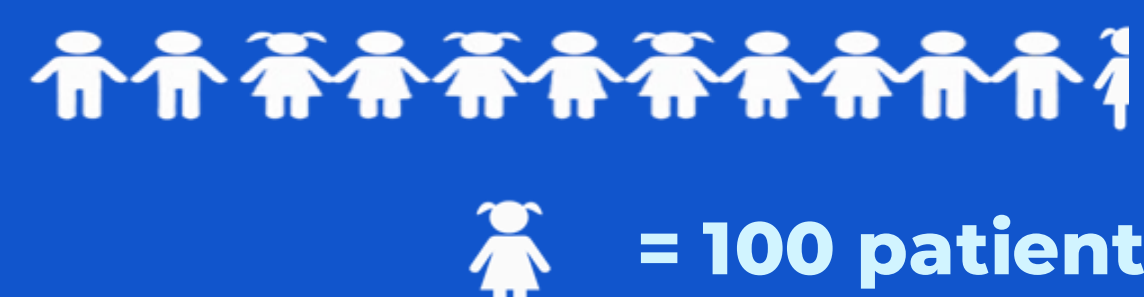
Databases: MEDLINE
OVID Embase
Cochrane Library



RESULTS



1148 patients (across 60 studies)

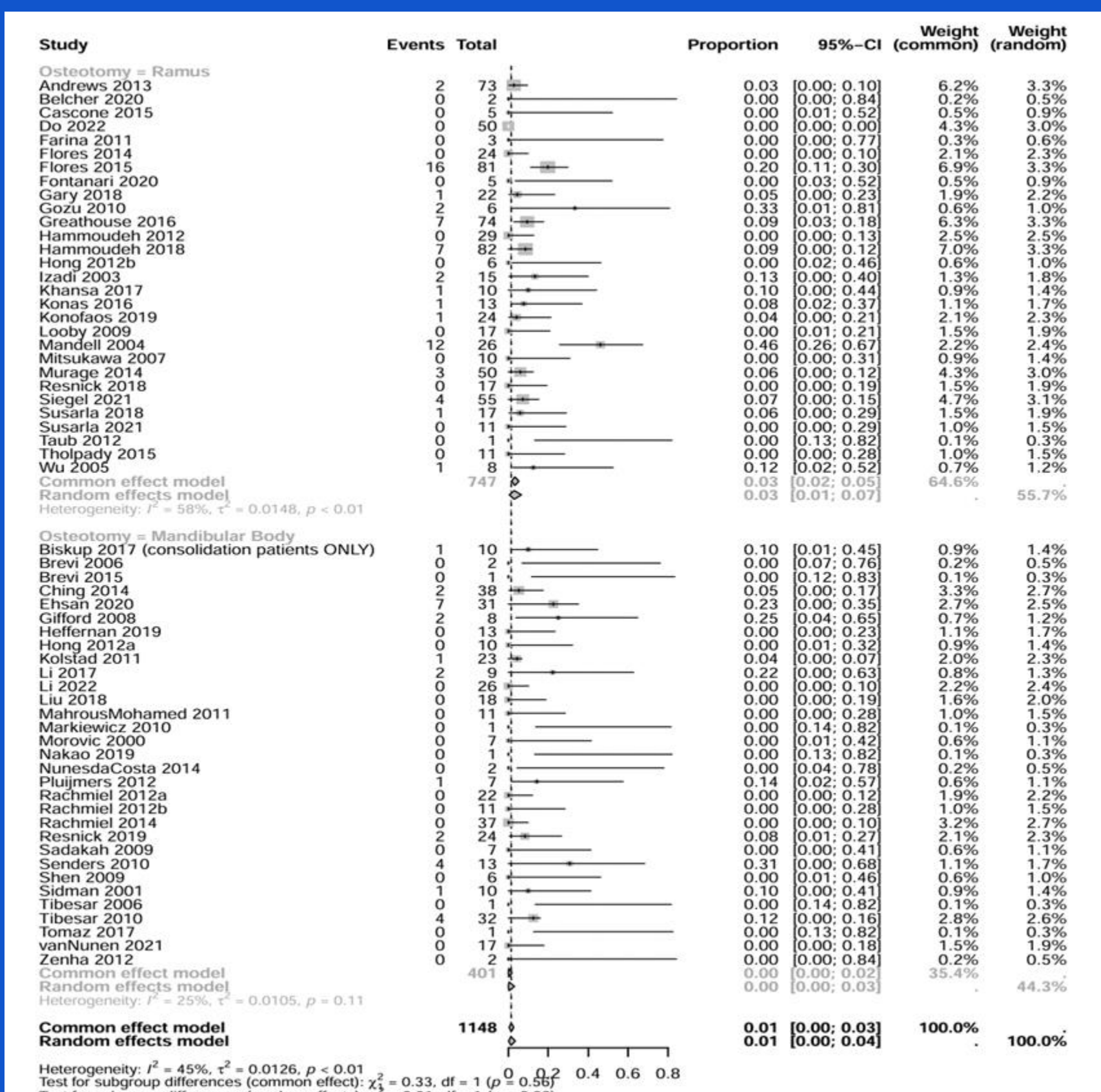


Mean Age



Mean Follow-up

Outcomes



Failure of reversal of UAO

defined by

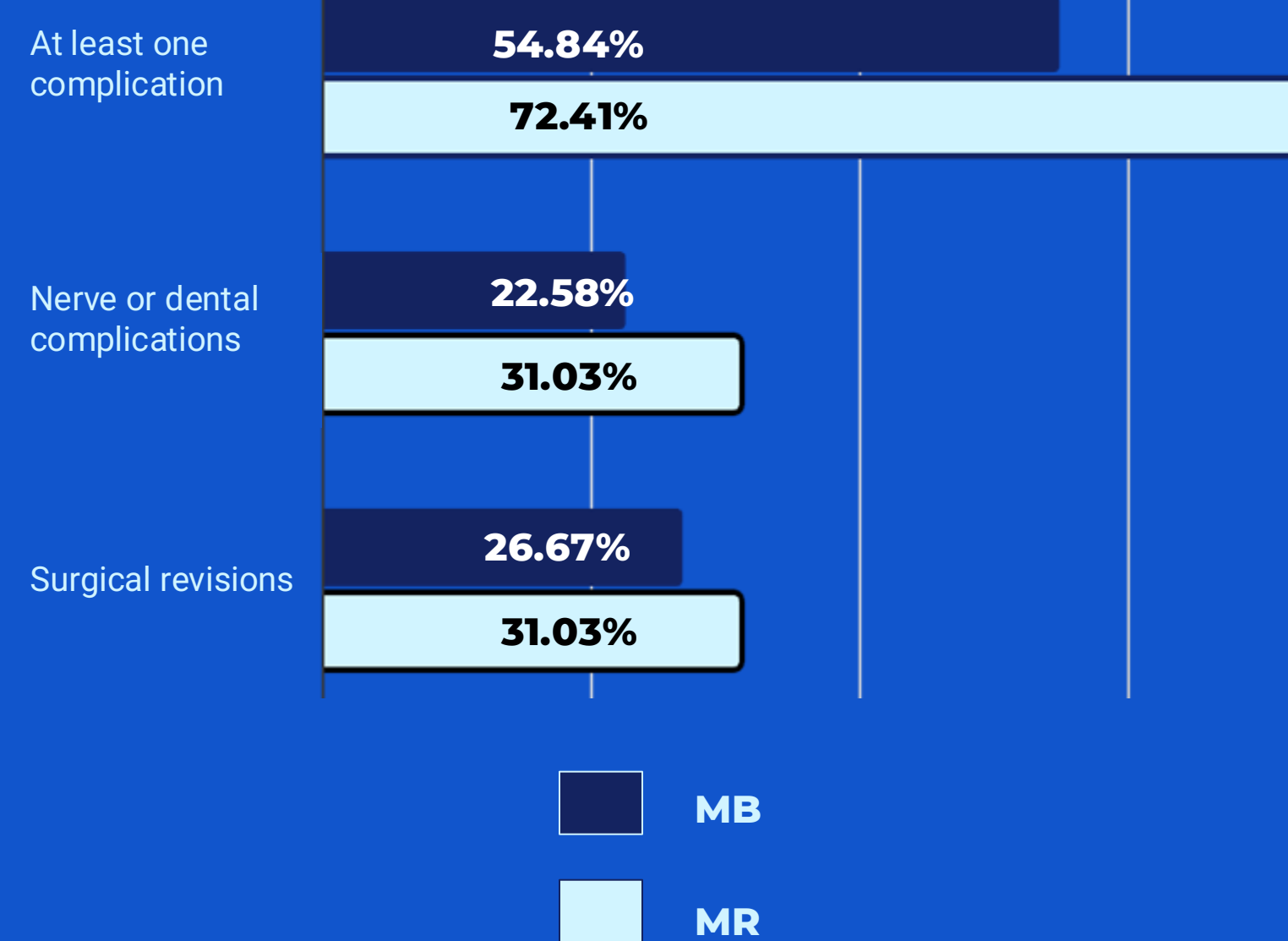
Poor post-op oxygen saturation,
apnea-hypopnea index (AHI) and polysomnography
results;
Post-op tracheostomy requirements;
Need for revision MDO surgery.

0.0293
= proportion of failure for MR
osteotomies

0.0035
= proportion of failure for
MB osteotomies

There was no statistically significant difference ($p < 0.01$) between the two osteotomy locations in the proportion of failure to reverse UAO ($p = 0.9212$). Subgroup analyses – by age at MDO, distractor type, distraction rates and distraction length – revealed no statistically significant differences.

Complications*



*The findings above should be interpreted with caution as differences in thresholds to report complications may vary between studies. However, no complications were found to be statistically significant.

CONCLUSIONS

There is no statistically significant difference between osteotomy locations (MR or MB) in MDO, with regards to reversal of UAO in infants with PRS.

Minor changes in aspects of the distraction process (distractor type, distraction rate and distraction length) do not significantly affect outcomes.

MDO remains a highly effective surgical tool in the armamentarium for management of severe UAO in infants with PRS.

Further research is needed to assess the impact of osteotomy site on long-term outcomes including dental-skeletal proportions and dental occlusion.