

A systematic review of early intrauterine intervention in twin reversed arterial perfusion sequence

Ventura W, Sugajara R, Quintana W, Llancari P, Novoa R
Instituto Nacional Materno Perinatal, Lima, Peru

Objective

There is some evidence that in twin reversed arterial perfusion sequence, early intervention at early gestational age could prevent a spontaneous death of the pump twin, achieving a better global survival. We aim to review the perinatal outcomes of early intervention in pregnancies complicated by twin reversed arterial perfusion (TRAP) sequence.

Methods

A comprehensive search from inception to December 2022 was conducted on databases including MEDLINE, EMBASE, Cochrane Library and LILACS. All studies that reported intervention in twin or triplet pregnancy complicated with TRAP sequence at 12⁺⁰ to 16⁺⁶ weeks of gestation were eligible. A descriptive and bivariate analysis was performed.

Results

Out of the 222 full-text articles, 44 studies reporting 108 cases of early intervention in TRAP sequence were included. A successful procedure was achieved in 105 (95.5%) interventions: 89 (94.7%) among twin pregnancies and 16(100%) among triple pregnancies. An overall livebirth rate was achieved in 75 patients (70.8%): intrafetal laser group 55 (73.3%), radiofrequency 10 (76.9%) and endoscopic laser 3 (75.0%). The median gestational age at delivery was 38⁺⁰ (37⁺⁴ – 39⁺⁴) weeks. The median treatment–delivery interval was 23⁺² (IQR, 21⁺⁰–25⁺⁶) weeks. The most frequent adverse outcomes reported were preterm labor in 7 (13.7%) patients and preterm premature rupture of membranes (PPROM) in 5 (12.2%). There were no severe adverse maternal outcomes.

Conclusion

Early intervention with intrafetal laser and radiofrequency in TRAP sequence achieves a livebirth rate of the pump twin of about 75%.