

Monochorionic twins with major fetal defects

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Objective

The challenges of monochorionic pregnancies arise from the shared placenta and vascular placental anastomoses and a higher risk of structural abnormalities, than in dichorionic or singleton pregnancies. The main treatment modality is fetoscopic intervention. In the only center of fetal medicine for the Czech and Slovak Republic, we have been collecting cases with complications of monochorionic pregnancies since 2012.

Methods

A prospective study analyzing the complications of intrauterine interventions in the treatment of major defects in the years 2012–2022 in CFM Prague, The Institute for the Care of Mother and Child.

Results

Over a 10-year period, a total of 272 intrauterine interventions were performed in monochorionic pregnancies. 96% were monochorionic diamniotic twins (2.2% monochorionic monoamniotic twins, 1.8% monochorionic triplets). In 40 cases, the indication for intervention was a major defect of one of the fetuses. In 23 cases it was a structural abnormality, in 17 cases we diagnosed Twin reversed arterial perfusion (TRAP) sequence (acardiac malformation). In 20 cases (50%), bipolar occlusion (BPO) of the umbilical cord of a fetus with a structural defect was performed. In three cases (7.5%), we indicated laser ablation of the placental anastomoses. In the TRAP sequence, we performed radiofrequency ablation (RFA) of the intrafetal vessels in 16/17 cases, 1 procedure was unsuccessful. By the end of 2022, 35 women (87.5%) had delivered, 2 (5%) continued their pregnancy and 3 (7.5%) had a pregnancy loss. The time from intrauterine intervention to delivery was 96 days on average (SD 48.3). Most often, women gave birth in 34 weeks (95% CI 32-36, SD 6.0), 18 women (51.4%) even delivered after 37 weeks. The mean weight of the newborn was 2078 g (95% CI 991-3164). 16 women (45.7%) gave birth spontaneously, in 19 (54.3%) it was performed cesarean section.

Conclusion

At CFM in Prague, we achieve results comparable to world centers for fetal medicine. The main intervention for major defects in monochorionic pregnancies is bipolar occlusion of the umbilical cord of the affected fetus, where the single survival rate reaches 92%. For the TRAP sequence, RFA is most often used. Both methods make it possible to reach a higher gestational week and enable a vaginal delivery.