

Fetal and Neonatal Brain Injury in Twins Complicated by Twin Anemia Polycythemia Sequence

Yinon Y, Silber R, Schwartz A, Avnet H, Lipits S, Shrot S, Hoffmann C, Weisz B, Rosen H
Sheba Medical Center, Sackler School of Medicine, Tel-Aviv University, Ramat Gan, Israel

Objective

To determine the rate of fetal and neonatal brain lesions and define risk factors for such lesions in pregnancies complicated by Twin Anemia Polycythemia Sequence (TAPS).

Methods

A retrospective cohort study of monochorionic twin pregnancies who were diagnosed with TAPS in a single tertiary medical center between 2013 and 2021. Pregnancies were followed with fetal brain neurosonogram every 2 weeks and fetal brain MRI (magnetic resonance imaging) was performed when indicated at 28-32 weeks of gestation; post-natal brain imaging included neonatal brain ultrasound. Pregnancies with pre- and post-natal brain lesions were compared to those without such findings.

Results

Overall, 23 monochorial diamniotic pregnancies were diagnosed with TAPS over the study period resulting in perinatal survival of 91.3% (42/46). In 6/23 (26%) pregnancies and 7/46 (15.2%) fetuses pre- or post-natal brain lesions were detected, of whom five were the polycythemic twins and two were the anemic twins. Brain findings included intra-cerebral hemorrhage and ischemic lesions and were diagnosed prenatally in 6/7 (85.7%) cases. No risk factors for severe brain lesions were identified.

Conclusion

TAPS may place the fetuses and neonates at increased risk for cerebral injuries. Incorporation of fetal brain imaging protocols may enhance precise prenatal diagnosis and allow for accurate parental counseling and post-natal care.