

OBJECTIVE: To review outcomes in complicated monochorionic (MC) pregnancies undergoing selective reduction (SR) in a multi-center contemporaneous cohort.

STUDY DESIGN: Retrospective review of MC pregnancies undergoing SR at 9 NAFTNet centers from January 2010 - December 2014 was performed. Indications for SR included twin-twin transfusion syndrome (TTTS), selective fetal growth restriction (sFGR), twin reversed arterial perfusion (TRAP) sequence, and discordant anomalies. Method used, perioperative complications, obstetrical and neonatal outcomes were collected. Descriptive statistics and two paired t-test were done using STATA/IC 14.0.

RESULTS: 308 cases met criteria. Diagnostic indications for SR included discordant structural or karyotype anomaly in 67 (22%), sFGR in 67 (22%), TRAP in 92 (30%), TTTS in 81 (26%), and other in 1 (0.3%). Methods used for SR included bipolar cord coagulation (BCC) 19 (6%), BCC with cord ligation 1 (0.3%), cord ligation 1 (0.3%), laser cord coagulation 2 (0.6%), and radiofrequency ablation (RFA) 285 (93%). Technical success was reported in 98.7% (304/308). Average gestational age (GA) at the time of procedure was 19.9 weeks (14.5-26.7). Complete pregnancy outcome was available on 237 cases. Average GA at delivery was 34.2 weeks (17.9-41.6) with average birth weight of 2337.4 g (460-3969). PPROM occurred in 24.5% (58/237) and average GA at PPROM was 27.4 weeks (16.9-35.7). Co-twin demise occurred in 15.2% (36/237) at an average GA of 20.8 weeks (14.6-33.4). Overall live birth rate was 84.8% (201/237). Maternal complications (i.e. infection, hemorrhage, etc) occurred in 19.4% (46/237). Comparison of RFA and BCC outcomes are presented in the table. When reviewing outcomes by diagnosis and method of SR, there were no significant differences in outcomes comparing RFA and BCC for TTTS, sFGR or discordant anomaly. PPROM occurred in both cases of laser cord coagulation for TRAP.

CONCLUSION: RFA is the most commonly used method of SR in this contemporaneous cohort with a high technical success rate. PPROM and co-twin demise continue to be significant complications of SR procedures.

| RFA and BCC Outcomes | | | |
|--|------------------|------------------|---------|
| | RFA (n=218) | BCC (n=15) | p value |
| GA at procedure (weeks) mean, SD | 19.9 (2.3) | 21.1 (1.9) | 0.041 |
| GA at procedure (median, range) | 19.9 (14.5-26.7) | 21.3 (17.6-23.7) | |
| GA at delivery (mean, SD) | 34.1 (5.5) | 34.7 (4.4) | 0.787 |
| GA at delivery (median, range) | 36.6 (17.9-41.6) | 34.9 (24.9-40.3) | |
| PPROM rate | 22% (48/218) | 40% (6/15) | 0.066 |
| Latency from procedure to delivery (weeks) | 14.2 (0.1-24.3) | 13.5 (4-22.6) | 0.691 |
| GA at PPROM (mean, SD) | 27.4 (5.0) | 29.4 (5.5) | 0.388 |
| GA at PPROM (median, range) | 28.0 (17.7-35.7) | 32.8 (19.4-34.9) | |
| Co-twin demise rate | 15.6% (34/218) | 13.3% (2/15) | 0.408 |
| GA at IUFD (mean, SD) | 20.7 (3.7) | 22.2 (2.8) | 0.581 |
| GA at IUFD (median, range) | 20.0 (14.6-33.4) | 22.2 (19.4-25) | |
| Live birth rate | 84.4% (184/218) | 86.7% (13/15) | 0.816 |
| Birth weight (g) (mean, SD) | 2366 (902.5) | 2213 (749.7) | 0.555 |
| Maternal complication rate | 17.0% (37/218) | 33.3% (5/15) | 0.056 |

181 Red cell distribution width as a novel prognostic biomarker in fetal growth restriction

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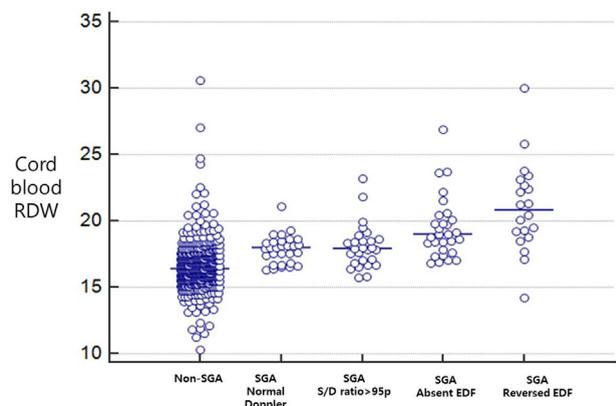
OBJECTIVE: Recent evidences suggest that red cell distribution width (RDW) can be a good prognostic marker for adverse outcomes in adult cardiovascular disease. This association has been attributed to the impaired erythropoiesis and abnormal red blood cell survival, originating from chronic hypoxic status or poor nutritional condition. Considering the pathophysiologic association between fetal growth restriction and chronic intrauterine hypoxia, which in turn can result in impaired erythropoiesis, we hypothesized that RDW could be a novel biomarker in fetal growth restriction. To address this issue, we evaluated the RDW in fetal growth restriction.

STUDY DESIGN: The study population consisted of singleton preterm neonates (24-34 weeks of gestation) born in Seoul National University Hospital. RDW in cord blood was measured at the time of delivery, and was compared between small for gestational age (SGA) neonates (birthweight < 10 percentile) and non-SGA neonates (birthweight ≥ 10 percentile). Among SGA neonates, RDW was also examined according to the presence or absence of neonatal morbidity and/or mortality.

RESULTS: A total of 552 neonates were included in the analysis, including 115 SGA neonates and 437 non-SGA neonates. RDW of SGA neonates was significantly higher than that of non-SGA neonates (median, 18.9 in SGA neonates vs. 16.6 in non-SGA neonates, p<0.001). In SGA neonates, RDW increased as the umbilical arterial Doppler worsened. In addition, RDS above 90 percentile was associated with increased neonatal morbidity and/or mortality among SGA neonates, and this relationship remained statistically significant after adjustment for gestational age at delivery, birthweight, and hematologic parameters.

CONCLUSION: The RDW was higher in SGA neonates and was associated with neonatal morbidity and/or mortality among SGA neonates.

Figure. Cord blood RDW according to the presence or absence of small for gestational age (SGA) and abnormal Umbilical artery Doppler



182 Preoperative ultrasound prediction of essential landmarks for fetoscopic laser coagulation of placental vascular anastomoses

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OBJECTIVE: Successful fetoscopic laser occlusion (FLOC) treatment of twin twin transfusion (TTTS) hinges on selecting a uterine entry that safely allows complete visualization of all anastomoses along the vascular equator (VE). We hypothesized that pre-operative ultrasound of the donor lie, placental cord insertions and size discordance

