



## **Predictors of iatrogenic preterm prelabor rupture of membranes and outcomes after cord occlusion in monochorionic diamniotic pregnancies**

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### **Objective**

To assess risk factors and outcomes of iatrogenic preterm prelabor rupture of membranes (PROM) after cord occlusion (CO) in monochorionic diamniotic (MCDA) pregnancies.

### **Methods**

This was a retrospective study of 188 MCDA complicated pregnancies with twin-to-twin transfusion syndrome (TTTS), selective intrauterine growth restriction (sIUGR) or discordant malformation. CO was performed as first treatment option in discordant malformations and when complete separation between both twins was not possible in TTTS or sIUGR. Intentional septostomy was performed when needed. Iatrogenic PROM was defined as rupture of membranes <32 weeks. Relevant pre and intra-operative variables were analyzed by univariate and binomial logistic regression to determine their impact on iatrogenic PROM after CO.

### **Results**

From 2006-2017, 188 cases underwent CO in our center. Mean maternal age was 33.6 ± 4.8 years and 64.3% were nulliparous (n=119). Diagnosis was TTTS in 28, 7% (n=54), severe sIUGR in 48, 9% (n=92) and discordant malformation in 22, 3% (n=42). Mean gestational age (GA) at procedure was 20.5 ± 3.4 weeks. PPROM <32w occurred in 21, 3% (n=40) and preterm birth <32w in 22, 8% (n=38). Preterm birth rate was higher in PROM <32w group. Mean rupture of membranes to delivery interval was 96.9 ± 47.8 d and GA at birth 35.8 ± 3.9w. Survival rate was 85.5% (n=159). There was a trend for better results in sIUGR (91.1%). Diagnosis, GA at surgery, anterior placenta, duration of fetoscopy, fluid input and output, detachment and septostomy presented association with PROM <32w in univariate analysis (p < 0.25). In multivariate analysis (binomial logistic regression), diagnosis of TTTS increased the risk of PROM <32w significantly (OR 3.3 CI95% 1.3 to 8.6). Occurrence of septostomy also increased this risk (OR 3.0 CI95% 0.9 to 10.2), however not significantly.

### **Conclusion**

Iatrogenic PROM <32w after CO increases the risk of preterm delivery. Among variables thought to be associated with PROM <32w after CO, diagnosis of TTTS was a significant predictor. This association should be further investigated.