Labor induction in twin pregnancies: Does the perinatal outcome differ according to chorionicity?

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Objective
To compare perinatal outcomes following induction of labor in dichorionic versus monochorionic twin pregnancies.

Methods
Retrospective cohort study of all women with twin pregnancies who underwent induction of labor after 34 weeks of gestation at a tertiary medical center between 2011-2018. Induction of labor methods included oxytocin infusion, extra amniotic balloon catheter and artificial amniotomy. The cohort included 300 women who were divided into two groups according to chronicity: 1) dichorionic twin pregnancies (n=204); 2) monochorionic twin pregnancies (n=96). Primary outcome was defined as mode of delivery. Secondary outcomes included maternal and neonatal adverse events.

Results
Women in the dichorionic group were older (33 vs. 31 years, p<0.001), and were characterized by lower parity (1 vs 2, p=0.002) and significantly higher rates of pregnancies achieved by artificial reproductive technology (43.63% vs. 5.12, p<0.001) when compared to monochorionic pregnancies. Groups were comparable regarding induction of labor methods. Primary outcome did not differ between groups with vaginal delivery rate of 95.59% in the dichorionic group and 96.88% in the monochorionic group. As expected, women with dichorionic twins delivered later compared to monochionic twins (37.93 vs. 36.43 weeks respectively, p<0.001). Although no differences were observed in Apgar scores or umbilical cord pH measurements, dichorionic twins were less frequently admitted to the neonatal intensive care unit (NICU) compared to monochorionic twins (2.45 vs. 5.21, p<0.001 for 1st twin; and 6.86% vs. 15.63%, p=0.006 for 2nd twin). Multivariate logistic regression adjusting outcomes to potential con-founders found gestational age at delivery to be the only variable significantly associated with NICU admission rates (Odds ratio 0.202, 95% confidence interval 0.13-0.313, p<0.001). Comparing twins within the groups demonstrated that regardless of chorionicity the second twin was smaller, had a lower Apgar score and pH and was more frequently admitted to NICU.

Conclusion
Labor induction is a reasonable option for both di and monochorionic uncomplicated twin pregnancies with excellent vaginal delivery rates. The higher rates of neonatal adverse outcomes among monochorionic twins are presumably related to earlier gestation age at deliver rather than chorionicity.