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## Introduction

In Spain, due to the increase of assisted reproductive techniques, the multiple pregnancy rate level up to 2.06% vs 1% around the world<sup>1</sup>.

More than 20% of twins are born preterm<sup>2</sup>. Prematurity is the main cause of morbidity and mortality in children <5 years and it is inversely correlated to the gestational age of preterm birth<sup>3</sup>.

Delayed interval delivery (DID) of the second fetus is a management option in some selected cases to prolong gestational age of the remaining fetus, in order to improve survival and neonatal outcomes<sup>4,5</sup>.

## Objective

To evaluate neonatal and maternal outcomes of the remaining fetus after DID in twin pregnancies.



## Methods

Retrospective observational study between 2014-2022

- Twin DC or MCDA
- Delivery <28 weeks without preterm premature rupture of membranes (pPROM), haemorrhage, infection and fetal wellbeing of the remaining fetus.

After delivery of first fetus

- Umbilical cord ligated. Placenta was left inside the uterus.
- Amniocentesis of the remaining amniotic sac to rule out intra-amniotic infection
- Antenatal management:
  - Broad-spectrum antibiotic prophylaxis
  - Fetal lung maturation (betamethasone) after 23+0 weeks
  - Fetal neuroprotection (magnesium sulphate) if imminent delivery was suspected before 32+0 weeks
- Tocolytics were only given if uterine contractions after exclusion of clinical chorioamnionitis.

Primary outcome measures were composite outcomes for maternal morbidity (Table 2) and neonatal morbimortality (Table 3)

Cerclage was not placed after DID.

## Results

14 cases were included.

Latency from delivery of the first twin to delivery of the second twin was of 9 (2.5; 37.5) days.

Neonatal survival rate to discharge home of the second twin was 64.3%. Despite not being statistically significant a lower neonatal morbidity composite rate was observed in the second twin.

Maternal composite morbidity rate was 17.9%. No cases of maternal sepsis, admissions to ICU or hysterectomy were observed.

**Table 1: Basal characteristics and delivery**

Maternal age (years)	35.5 (32.0-39.2)
Body mass index (kg/m <sup>2</sup> )	24.7 (28.3-30.4)
Nulliparous	10 (71.4)
Pregnancy after <i>In vitro</i> fertilization treatment	6 (42.9)
Bichorial biamniotic pregnancy	13 (92.9)
Monochorial biamniotic pregnancy	1 (7.1)
Cerclage prior to DID	4 (28.5)
Gestational age at admission (weeks)	23.6 (19.5-25.6)
Cervical length at admission (mm)	3.5 (0-25.5)
Positive vaginal culture at admission	1 (7.1)

**Table 2: Maternal outcomes**

Maternal clinical chorioamnionitis	0
Postpartum endometritis	1 (7.7)
Postpartum hemorrhage treated with drugs different than oxytocin	2 (15.4)
<b>Maternal composite morbidity</b>	<b>5 (17.9)</b>

Table 1&2: Continuous variables were presented as medians (25<sup>th</sup>; 75<sup>th</sup> percentile).

**Table 3: Neonatal outcomes**

	First twin	Second twin	p value
WBC at delivery	11655 (10400-16075)	12545 (10225-17462)	0.550
CPR at delivery (mg/L)	12.5 (4.5-17.5)	57 (50-65)	0.034
Gestational age at delivery (weeks)	23.6 (19.1-26.3)	28.2 (25.0-30.0)	0.018
Vaginal delivery	14 (100)	10 (71.4)	0.031
Emergency cesarean section	0	2 (14.3)	0.277
Female gender	5 (45.5)	7 (53.8)	0.682
Birth weight (g)	515 (420-714)	1100 (570-1215)	0.013
Apgar at 1 minute <7	9 (90)	4 (34.6)	0.011
Neonatal survival rate to discharge home	6 (42.9)	9 (64.3)	0.376*
Stillbirth	4 (40)	1 (12.5)	0.220*
Neonatal death	4 (57.1)	2 (25)	0.192*
Respiratory distress syndrome or transient neonatal tachypnea	7 (87.5)	6 (85.7)	0.989*
Bronchopulmonary dysplasia	6 (75)	2 (28.6)	0.427*
Intraventricular hemorrhage grade III or IV	2 (25)	3 (42)	0.480*
Necrotizing enterocolitis	1 (12.5)	1 (14.3)	0.071*
Early onset sepsis with positive hemocultures	4 (50)	1 (14.3)	0.167*

Continuous variables were compared using a nonparametric U Mann-Whitney test presented as medians (25<sup>th</sup>; 75<sup>th</sup> percentile). Categorical variables were compared using Chi-square or Fisher exact tests and presented as number (%).

## Conclusion

DID in selected extreme preterm birth twins increase gestational age at delivery and, therefore, birthweight of the remaining fetus without increasing neonatal morbidity outcome and with a low maternal morbidity associated.

## References

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