

the last 10 years. Chorionicity and indication for invasive testing were retrieved from the clinical notes. The following outcomes were analysed: fetal loss within 4 weeks from the procedure and <24 weeks' gestation; preterm premature rupture of membranes (PPROM) within 4 weeks from the procedure and <34 weeks' gestation; spontaneous preterm delivery (PTD) <32 weeks of gestation.

**Results:** A total of 267 twin pregnancies underwent invasive prenatal diagnosis during the study period, 212 dichorionic diamniotic and 55 monochorionic diamniotic. Amniocentesis was the most frequent procedure in both groups. Indications for invasive testing, type of procedure used, and pregnancy outcomes are described in Table 1 and reported with their 95% confidence intervals.

**Conclusions:** We observed a fetal loss rate <24 weeks of 1.5% (95% CI, 0.3–4.3). As expected, monochorionic pregnancies had a higher incidence of adverse pregnancy outcome.

### OC09.03

#### Systematic review of monochorionic versus dichorionic twin pregnancy losses near term

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**Objectives:** Monochorionic (MC) twins are frequently electively delivered at an earlier gestation than dichorionic (DC) twins because of presumed higher fetal losses near term. The aim of this review was to compare prospective risk of stillbirth in studies of MC and DC twin pregnancies near term.

**Methods:** All the published literature on prospective risk of stillbirth in MC and DC twins were reviewed. The risk of stillbirth was calculated as a proportion of the ongoing fetuses at the onset of each two week interval from 26 weeks of gestation.

**Results:** A total of 6 studies were suitable for inclusion in our review. Three studies included both MC and DC twins and the remaining three included only MC twins. A total of 2271 MC and 4262 DC twin fetuses were included for analysis. The overall stillbirth rate was approximately two to three-fold higher in MC compared to DC twins ( $P < 0.01$ ). The relative risk of stillbirth between MC and DC twins remained constant and did not vary significantly after 32 weeks gestation ( $P = 0.10$ ).

**Conclusions:** The data from small underpowered studies have been used to justify early elective delivery in MC twins. This systematic review of existing data on prospective risk of stillbirth demonstrates that the MC twins have higher loss rates than DC twins, but that these loss rates remain constant after 32 weeks. The policy of timing of delivery in MC and DC should be questioned and larger twin cohort studies are required to confirm this finding.

### OC09.04

#### Crown-rump length and abdominal circumference discrepancy as early predictors of late adverse pregnancy outcome in monochorionic diamniotic pregnancies

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**Objectives:** To investigate the value of intertwin discordance in crown-rump length (CRL) and abdominal circumference (AC) to predict adverse pregnancy outcome (APO) in monochorionic diamniotic twin pregnancies.

**Methods:** Cohort study on 150 consecutive monochorionic diamniotic twin pregnancies followed at our Department from the first trimester to delivery between January 2001 and December 2010. Intertwin discordance in CRL, and z-score discrepancy

in AC were assessed at 11+0–13+6 and 19+0–21+6 weeks, respectively. Receiver-operating characteristics (ROC) curves were used to determine their predictive ability for subsequent development of APO. Clinical and perinatal outcomes were reviewed. APO was defined as intertwin growth discrepancy >20%, intrauterine growth restriction, small for gestational age or neonatal intensive care unit admission. Pregnancies complicated by twin to twin transfusion syndrome or intrauterine death before 20 weeks were excluded.

**Results:** 137 pregnancies were included in the study. Pregnancies that developed APO ( $n = 39$ ) showed a median CRL discordance of 4.7% (IQR 2.6–7.3%) and a median z-score discrepancy in AC of 0.83 (IQR 0.41–1.71). Uncomplicated pregnancies ( $n = 98$ ) showed a median CRL discordance of 3.0% (IQR 1.4–6.3%) and a median z-score AC discrepancy of 0.60 (IQR 0.28–0.98). Z-score discrepancy in AC at 20 weeks was significantly larger ( $P < 0.01$ ) in pregnancies that subsequently developed APO. The prediction of subsequent development of APO, expressed as the area under ROC curve, provided by the discordance of CRL was 0.60 (95% CI 0.50–0.71), while it was 0.65 (95% CI 0.54–0.75) for AC.

**Conclusions:** Although we observed a significant difference between complicated and uncomplicated pregnancies, the discrepancy in AC at the 20 weeks scan does not seem to be a useful predictor of the subsequent development of APO.

### OC09.05

#### Perinatal outcome of surviving co-twins in monochorionic twin pregnancies complicated by single fetal demise after 20 weeks of gestation

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**Objectives:** To investigate the prevalence of intrauterine death (IUD) after 20 weeks in monochorionic twins and to evaluate the perinatal outcome of the surviving co-twins compared to dichorionic twins.

**Methods:** We retrospectively reviewed medical records for 869 twin pairs born from 2000 to June 2009 in the Seoul National University Hospital. Nineteen twin pregnancies (11 monochorionic diamniotic and 8 dichorionic) were complicated by IUD after 20 weeks of gestation. Cranial ultrasound scans were performed most of surviving co-twins complicated IUD.

**Results:** A 195 monochorionic diamniotic (MCDA) and 674 dichorionic diamniotic (DCDA) twin pairs were included in the study. Single fetal demise occurs in 5.6% (11/195) of MCDA twins, and 1.2% (8/674) of DCDA twins. 92.3% (180/195) MCDA twin pairs resulted in 2 survivors, 2.1% (4/195) in no survivor, while 98.7% (665/674) DCDA twin pairs resulted in 2 survivors, 0.1% (1/674) in no survivor. Gestational age (GA) at delivery and GA at IUD was not statistically different between MCDA and DCDA twins (35.0 (range, 30.1–40.7) vs. 32.1 (range, 30.1–41.3) weeks) ( $P = 0.55$ ) and (29.0 (range, 20.3–38.6) vs. 29.9 (range, 22.4–33.1) weeks) ( $P = 0.60$ ), respectively. The incidence of cerebral injury and cardiac complication was 18.2% (2/11) (intraventricular hemorrhage, encephalomalacia), 9.1% (1/11) (cardiomyopathy) in MCDA twin pregnancies compared to DCDA ones 0%.

**Conclusions:** Our study confirmed the higher risk of perinatal morbidity for the co-twins in case of single fetal demise after 20 weeks in MCDA twin pregnancies. MCDA twin pregnancies have a much higher risk ischemic lesion in vital organs such as brain and heart compared to DCDA ones, limited by small number of cases.