Methods A prospective cohort of MC twins complicated by severe TTTS (n = 23) were studied, between October 2006 and December 2007. Cytokines (TH1: interferon-gamma (IFN-γ), tumour necrosis factor-α (TNF-α) and interleukins (IL-2, IL-6, IL-8, IL-12, IL-1β); TH2: IL-4, IL-5, IL-10 and IL-13; as well as keratinocyte growth factor (KGF), platelet derived growth factor-BB (PDGF-BB), fibroblast growth factor-basic (FGF-basic), tissue inhibitor of matalloproteinases-1 (TIMP-1) and intercellular adhesion molecule-1 (ICAM-1) were measured in plasma and AF before and after FLA by Human TH1/TH2/Human Angiogenesis FASTQuant kits or ELISA.
Results There was a significant difference in the plasma PDGF-bb and TIMP-1 concentrations noted between uncomplicated MC and MC twin pregnancies complicated by TTTS. Median maternal plasma PDGF-bb was lowest in uncomplicated MC twins than in TTTS pregnancies and DC twin pregnancies pg/ml) (P = 0.0486). However, TIMP-1 was higher in TTTS pregnancies than in uncomplicated twins (P = 0.0031). There was a significant difference between plasma and amniotic fluid concentrations of IL-6, IL-1β, TNF-α, IL-10, IL-4, IL-8, IFN-γ, TIMP-1 and ICAM-1. There were no significantly differences in either plasma or amniotic fluid cytokines after fetoscopic laser ablation.
Conclusion TTTS is associated with minimal changes in cytokine levels although the majority of cytokine levels were higher in amniotic fluid than maternal blood. It does not appear that FLA provokes a significant cytokine response.

PF.17 FETAL BIOMETRY REVISITED

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A Khalid, JR Higgins, DJ McKenna. *Cork University Maternity Hospital, Cork, Ireland*

Objective To construct fetal biometric charts in the Irish population using methodology recommended by Altman and Chitty with up-to-date ultrasound equipment.
Study design This was a prospective, cross-sectional study involving low-risk women attending Cork University Maternity Hospital. Women were recruited from their first trimester dating scan and randomly allocated to a single scan between 14–40 weeks gestation. Scans were performed by a sole researcher. Gestation was calculated using the estimated-due-date (EDD) by dating scan. Recruits were Irish Caucasian women with a singleton pregnancy. Women with conditions affecting fetal size including hypertension, pre-eclampsia, renal disease, autoimmune disorders and diabetes mellitus were excluded as were fetuses with congenital anomalies. Biometrical measurements were performed using the Voluson E8 ultrasound by GE Healthcare.
Results Nine-hundred-and-fifteen women were recruited. Seven-hundred-and-ninety-three women met the inclusion criteria and were scanned as per protocol. Median maternal age was 32 (range 17–44). Median BMI was 24.7 (range 17.1–48.6). Nulliparous women constituted 46.5% (369/793) of recruits, 32.6% (261/793) were expecting their second child, 18.3% (145/793) were expecting their third or fourth child, while only 2.3% (18/793) were grand multiparous. Biometric charts for biparietal diameter (BPD), head circumference (HC), femur length (FL) and abdominal circumference (AC) have been generated for this population and compared to the biometric charts by Chitty *et al*, Following is a table showing calculated percentiles for BPD measurements in this population.
Conclusion We have constructed Irish Caucasian specific fetal biometry charts with up-to-date equipment using Chitty and Altman's methodology.

PF.18 UMBILICAL ARTERY DOPPLERS IN A LOW RISK POPULATION

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A Khalid, JR Higgins, DJ McKenna. *Cork University Maternity Hospital, Cork, Ireland*

Objective To construct reference intervals for umbilical artery Doppler indices from 15 to 40 weeks in a low-risk population.
Study design This was a prospective, cross-sectional study involving low-risk women attending Cork University Maternity Hospital conducted concurrently with a primary study to construct normograms for fetal biometry. Women were recruited from their first trimester dating scan and randomly allocated to a single scan between 14–40 weeks gestation. Scans were performed by a sole researcher. Gestation was calculated using the estimated due date assigned by dating scan. Recruits were Irish Caucasian women with a singleton pregnancy. Women with conditions affecting placental function including hypertension, pre-eclampsia, renal disease, autoimmune disorders and diabetes mellitus were excluded as were fetuses with congenital anomalies. Umbilical artey Dopplers were sampled using the Voluson E8 ultrasound by GE Healthcare.
Results Nine-hundred-and-fifteen women were recruited. Seven-hundred-and-ninety-three women met the inclusion criteria and were scanned as per protocol. Women in gestational week 14 were not included in this dataset due to technical difficulties and presence of absent end diastolic flow. Median maternal age was 32 (range 17–44). Median BMI was 24.7 (range 17.1–48.6). Nulliparous women constituted 46.5% (369/793) of recruits, 32.6% (261/793) were expecting their second child, 18.3% (145/793) were expecting their third or fourth child, while only 2.3% (18/793) were grand multiparous. Reference intervals for umbilical artery resistance index (RI), pulsatility index (PI) and systolic/diastolic (S/D) ratio were generated for this population. The following table shows the calculated percentiles for each gestational week.
Conclusion We have constructed Irish Caucasian specific reference intervals for umbilical artery Doppler indices from 15 to 40 weeks in a low-risk population using up-to-date ultrasound equipment.

PF.19 NEONATAL ICU ADMISSIONS OF CHILDREN CONCEIVED FOLLOWING ASSISTED REPRODUCTIVE TECHNOLOGY

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MH McComiskey, C Patterson, M Stevenson, IE Cooke. *Queen's University Belfast, Belfast, UK*

The purpose of this project was to compare NICU admission rates of children conceived via assisted reproductive technology with that of the naturally conceived population.

A retrospective cohort study was constructed using a consent-based registry to identify and follow-up children born via ART. Register and NICU admission records were linked and comparisons made (with allowance for confounding) between admission rates in the naturally conceived population and the ART cohort by logistic regression. The project was performed in accordance with HFEA regulations and had ethical approval.

Abstract PF.19 Table

	Singletons		Twins	
	OR (95% CI)	P Value	OR (95% CI)	P Value
Unadjusted	0.92 (0.71, 1.18)	0.49	0.83 (0.69, 0.99)	0.04
Adjusted for hospital	0.95 (0.74, 1.22)	0.69	0.85 (0.71, 1.03)	0.09
Adjusted for year	0.91 (0.71, 1.17)	0.47	0.83 (0.69, 0.99)	0.04
Adjusted for hospital and year	0.95 (0.74, 1.22)	0.66	0.85 (0.70, 1.02)	0.08
Adjusted for gestation	0.62 (0.45, 0.84)	0.002	0.71 (0.57, 0.90)	0.004
Adjusted for hospital, gestation and year	0.68 (0.49, 0.93)	0.02	0.76 (0.60, 0.97)	0.03

NICU admission rates of singleton infants conceived following ART were significantly lower that their naturally conceived peers when adjusted for combinations of hospital with gestation and year. Unadjusted admission rates for singletons were not different.