Parameter & Gestational Age	Twin Difference	All Twins		
		CO	18% BW	PTD
CRL	≥ 20%	50%	50%	50%
11+0 to 14+0 weeks	< 20%	13%	18%	13%
	HR 95% CI	0.2 -1.8	0.4-2.2	0.4-2.4
AC	≥ 10%	31%	42%	37%
14+1 to 17+6 weeks	< 10%	22%	22%	17%
	HR 95% CI	1.0-2.5	1.6-3.8*	1.5-3.8*
AC	≥ 10%	45%	43%	37%
18+0 to 21+6 weeks	< 10%	22%	20%	16%
	HR 95% CI	1.7-3.2*	2.1-4.1*	1.7-3.4*

HR=Hazard Ratio * P= < 0.001

Maternal Parameter	Fetal AC R value (P value)	Fetal Abdominal Subcutaneous Tissue
Weight	0.2 (0.006)	0.0 (NS)
Height	0.2 (0.007)	-0.1 (NS)
BMI	0.1 (NS)	0.1(NS)
GWG 1	0.1 (NS)	0.0 (NS)
GWG 2	0.1 (NS)	0.1 (NS)
OGTT Glucose levels Fasting	0.2 (0.002)	0.2 (0.006)
I hour post prandial (PP)	0.2 (0.003)	0.2 (0.002)
2 hours PP	0.1 (NS)	0.2 (0.014)
3 hours PP	0.1 (NS)	0.2 (0.001)

340 Does maternal glycemia influence the distribution of fetal fat in the third trimester?

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OBJECTIVE: We studied the relationship between maternal glycemia at 28 weeks gestation and fetal adiposity measured using ultrasound in the third trimester.

STUDY DESIGN: After Gestational Diabetes Mellitus(GDM) was excluded by a diagnostic Oral Glucose Tolerance Test (OGTT) at 28 weeks gestation, healthy women with a singleton pregnancy were recruited at their convenience. Consent was obtained. Sonographic fetal soft tissue measurements were used to assess adiposity at 28 and 37 weeks. Gestational weight gain (GWG) was measured. Statistical analysis included multiple regression.

RESULTS: In the 231 women studied the mean age was 30.6 years. 41.1% (n=95) were primigravidas. The mean early pregnancy BMI was 28.2 kg/m2. Maternal glucose levels correlated with the fetal abdominal subcutaneous tissue measurements (r=0.2; p=0.014) and abdominal circumference (AC), (r=0.1; p=0.04). Maternal glucose levels did not correlate with the fetal mid-thigh muscle thickness and mid-thigh subcutaneous tissue measurements. Fasting and 1 hour post prandial OGTT levels were significantly associated with AC and abdominal subcutaneous tissue measurements. Glucose levels at 2 and 3 hours post prandial correlated with increased abdominal subcutaneous tissue but not with fetal AC (Table). There was no significant association between gestational weight gain (GWG) and fetal adiposity.

CONCLUSION: Recent studied have shown that higher maternal glucose levels short of GDM were associated with large for gestational age babies and neonatal adiposity. Our study shows that in women who do not have GDM, higher maternal glucose levels at 28 weeks gestation appear to influence the distribution of fetal fat as well as the amount of fat. The lifelong impact of intrauterine programming by maternal glycemia on the distribution of fetal fat remains uncertain.

341 Fetal loss rates from intrauterine fetal transfusion: a prospective tertiary center study

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OBJECTIVE: To examine perinatal outcomes following intrauterine fetal red cell transfusion (IUT) in a single tertiary obstetric unit over a 15-year period.

STUDY DESIGN: This is a prospective study of all IUTs performed at the National Maternity Hospital, Dublin, which is Irelands largest fetal medicine center. Eligible cases were identified from a prospectively collated hospital transfusion register; the clinical details for each case were extracted and recorded onto a computerized database. Women undergoing IUT for alloimmune thrombocytopenia, non-immune fetal hydrops or parvovirus infection were excluded. The cord insertion was the preferred site for IUT, with the intra-hepatic vein and free cord loop reserved for cases where the cord insertion was inaccessible.

RESULTS: Between January 1996 and December 2010, 262 intrauterine transfusions were performed in our unit, of which 244 (93%) were undertaken for red cell alloimmunisation, involving 97 pregnancies. The majority of women (84%, 81/97) had anti-D antibodies, with a smaller incidence of anti-Kell (12%), anti-c (3%) and anti-E (1%) antibodies. Affected women underwent a median of 3 (IQR 2-4) IUT procedures. The median gestation at first IUT was 27 (IQR 25-31) weeks. In total, there were 3 intrauterine fetal deaths and 4 early neonatal deaths in this cohort, giving a perinatal mortality rate of 7% and a survival rate of 93%. There were 3 perinatal losses directly related to the transfusion (all in women with anti-D antibodies), giving an overall procedure-related loss rate of 1.2% (3/244) per procedure. Two women had in utero fetal demise within 48 hours of the IUT, at 25 weeks 29 weeks respectively. The third loss was early neonatal demise following emergency CS for fetal bradycardia due to cord hematoma at 32 weeks gestation.

CONCLUSION: Intrauterine fetal transfusion is a safe procedure, associated with a low (1.2%) rate of procedure-related fetal loss, when performed by experienced practitioners in a national referral center.