

## GROWTH SCAN

~~XXXXXXXXXXXX~~

Date of birth:	03 October 1992	Examination date:	25 November 2024
Referring doctor:	Dr Mishra Mamta	Hospital no:	32664
		Visit no:	9

### Present Pregnancy

Dates last period: 03/04/2024  
 Cycle regular - LMP sure  
 Conception spontaneous  
 EDD by dates 08/01/2025  
 EDD by scan 12/01/2025  
 Maternal blood group B, Rhesus positive  
 Weight 67.2 kg  
 Height 167.6 cm  
 Body mass index 23.9  
 Cigarettes no  
 Alcohol no  
 Problems in current pregnancy no

### Obstetric History

Gravida 1 Para 0

### Indication

Fetus Growth retardation

### Ultrasound

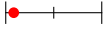
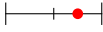
Operator Dr Anita Kaul  
 Operator 2 Dr Vartika Mohan  
 US system Voluson Swift, transabdominal  
 View restricted by advanced gestation

	Gestational age	EDD
last period	33 weeks + 5 day(s)	08 January 2025
US	33 weeks + 1 day(s) from CRL	12 January 2025

### Biometry / Anatomy

BPD	81.3 mm	
OFD	107.2 mm	
HC	296.1 mm	
TCD	42.7 mm	
Ventricular atrium	3.0 mm	
TAD	81.2 mm	
APAD	81.9 mm	
AC	256.2 mm	
FL	61.0 mm	
BPD / OFD	0.76	
HC / AC	1.16	
BPD / FL	1.33	

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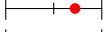
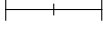
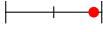
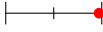
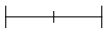
Estimated fetal weight Hadlock (BPD-HC-AC-FL)  
1,662 g   
3 lbs 10 oz  
Centile 3.4  
Fetal heart activity visualised  
Fetal movements normal  
Fetal heart rate 147 bpm   
Presentation cephalic  
Placenta site posterior high, Placenta grade Grade II/III  
Amniotic fluid normal

## Amniotic Fluid Index

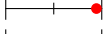
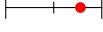
L. upper pool 2.5 cm  
R. upper pool 2.9 cm  
L. lower pool 1.9 cm  
R. lower pool 3.9 cm  
Deepest pool 3.9 cm  
AF Index 11.2 cm

## Doppler ultrasound

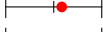

### Uterine artery

PI left 0.890   
PI right 1.220   
Mean PI 1.055   
RI left 0.55   
RI right 0.63 


### Umbilical artery

PI 1.29   
RI 0.73   
EDF positive

### Middle cerebral artery

PI 2.14   
PSV 50.1 cm/s   
Cerebro-placental ratio 1.66

### Ductus Venosus

A-wave positive  
PIV 0.50 

Assessment Intermittent increased Umbilical Artery PI.

## Preeclampsia Screening

Third trimester: 30<sup>+0</sup> to 34<sup>+6</sup> weeks

### Maternal characteristics and history

Maternal age 32.1 years.

Racial origin: Asian(India, Pakistan, Afganistan).

Maternal weight: 70.3 kg; Height: 167.6 cm.

Conception: spontaneous; Smoking in this pregnancy: no; Diabetes Mellitus: no; Systemic lupus erythematosus: no;  
Antiphospholipid syndrome: no; Chronic hypertension: no; Family history of PE: none.

Parity (no. of pregnancies  $\geq$  24 weeks): 0

### Biophysical Markers

Uterine artery mean PI 1.055 equivalent to 1.481 MoM

Mean Arterial Pressure 79.000 mmHg equivalent to 0.9099 MoM

### Risk calculation

FMF Operator: Anita Kaul, FMF Id: 15827

Preeclampsia before 36 weeks 1 in 10283

Risks for preeclampsia are based on maternal demographic characteristics, medical and obstetric history, mean arterial pressure (MAP) and uterine artery Doppler.

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Biophysical marker medians used to calculate MoMs are corrected as necessary according to several maternal characteristics including racial origin, weight, height, smoking, method of conception and parity. The estimated risk is calculated by the FMF-2018 software (version 4.4) and is based on findings from extensive research coordinated by the Fetal Medicine Foundation (UK Registered charity 1037116). The risk is only valid if the ultrasound scan was performed by a sonographer who has been accredited by the Fetal Medicine Foundation and has submitted results for regular audit (see [www.fetalmedicine.org](http://www.fetalmedicine.org)).

## Conclusions

Diagnosis Fetal growth restriction  
Recommendations Rescan for AFI and Doppler study in 7 days, Keep a strict track of fetal movements, CTG on alternate days, Endocrinology review

**Recommendations** Rescan for AFI and Doppler study in 7 days, Keep a strict track of fetal movements, CTG on alternate days, Endocrinology review

## Comments

Thank you for referring your patient ~~XXXXXXXXXXXX~~ date of birth 03/10/1992.

This is a follow up Growth scan for ~~XXXXXXXX~~ today, in view of FGR. She has GDM is currently on Inj Insulin 12units before breakfast. Her fasting and 2 hr PP sugars at home are suboptimally controlled (fasting range 85-110mg/dl and 2hr PP upto 140mg/dl). She is due for an Endocrinology review today.

Her CTG done last Monday was reactive and a Doppler study done in the interim elsewhere reported raised uterine artery and Umb artery PI and low normal liquor.

**On scan today, the fetal growth is suboptimal however maintained on the 3rd centile. The amniotic fluid volume is normal for the gestation. Good fetal movements are seen today on the scan and thee are felt by her as well.**

**Fetal Doppler: The umbilical artery Doppler shows raised resistance intermittently however a positive end diastolic flow is seen through out the scan. The DV and MCA Doppler are normal.**

**There is a single loop of nuchal cord seen.**

**We suggest a strict track of fetal movements and CTG alternate days. We shall liek to call her back in a week's time to follow up the Doppler study and AFI or earlier if clinically indicated. if she perceives reduced fetal mvments or if the CTG is non reassuring in the interim, she must report immediately. BP monitoring is suggested (uterine artery PI >95th centile for the gestation, similar to the prev scans). An Endocrinology review is suggested to optimise her blood sugars . high protein diet to be continued.**

Please do not hesitate to contact me in case of any queries.

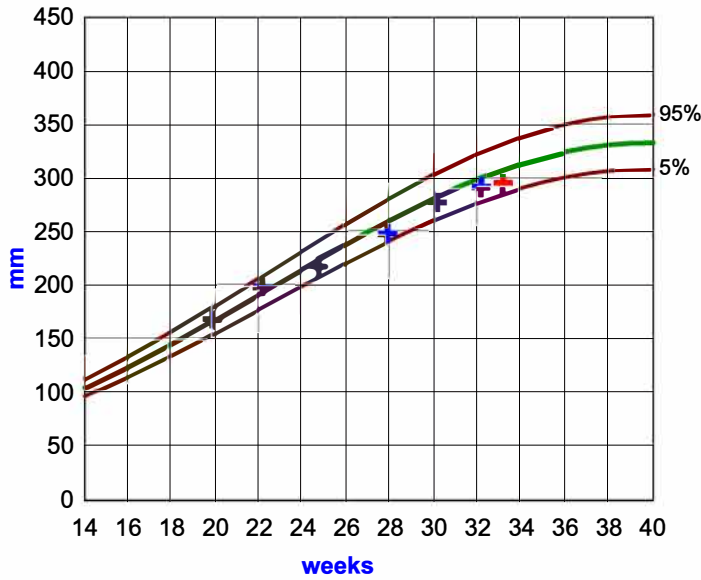
I the undersigned declare that while conducting the ultrasound on Mrs ~~XXXXXXXXXXXX~~ have neither detected nor disclosed the sex of the fetus to anyone in any manner.

Best wishes

Dr Anita Kaul

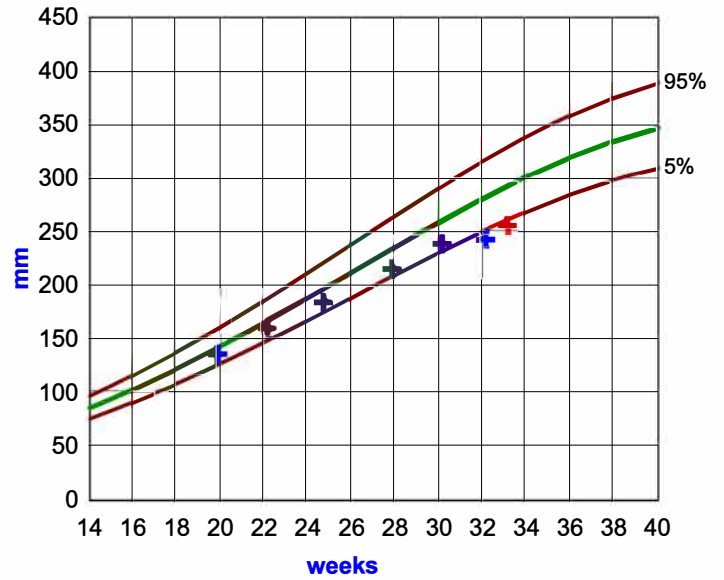
It is not possible to exclude all structural problems, rare genetic syndromes and small cardiac defects by ultrasound alone.

**Head circumference**



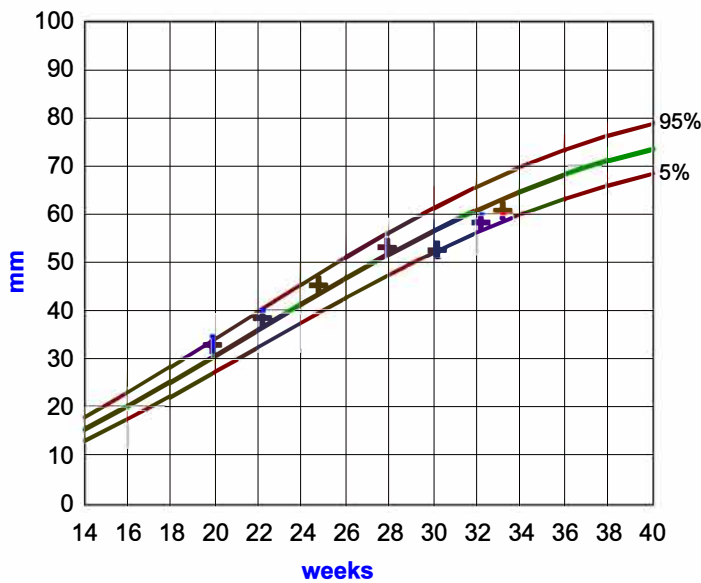
Snijders et al. Ultrasound Obstet Gynecol 1994; 4: 34-48

**Abdominal circumference**



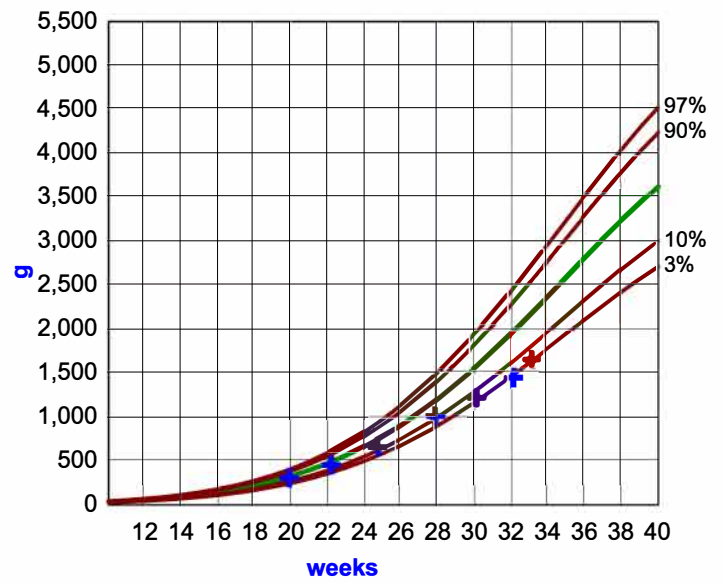
Snijders et al. Ultrasound Obstet Gynecol 1994; 4: 34-48

**Femur length**



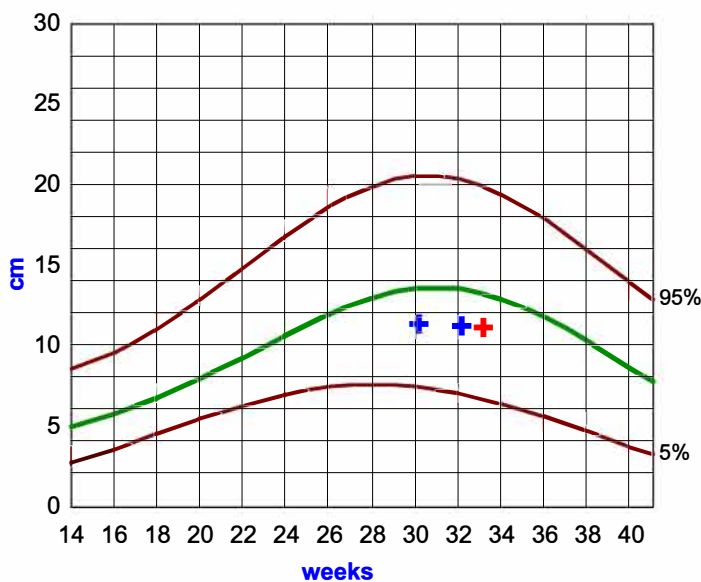
Snijders et al. Ultrasound Obstet Gynecol 1994; 4: 34-48

**Estimated Fetal Weight**



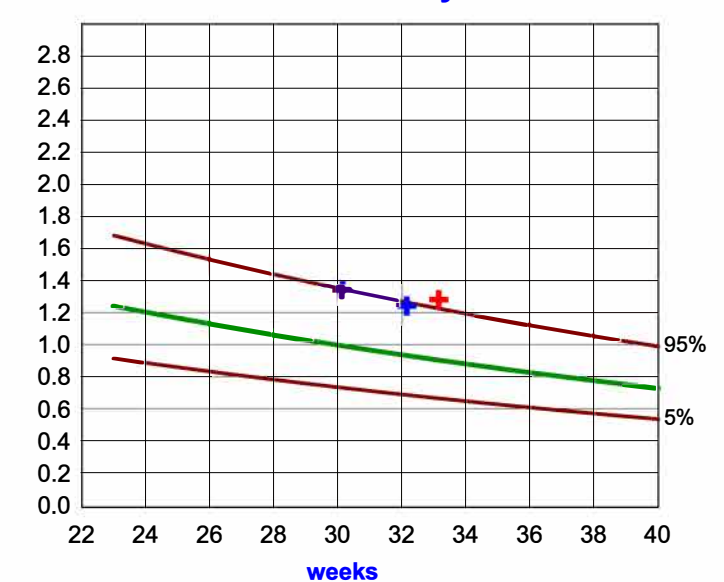
Hadlock et al. Radiology 1991; 181:129-133

**Amniotic Fluid Index**



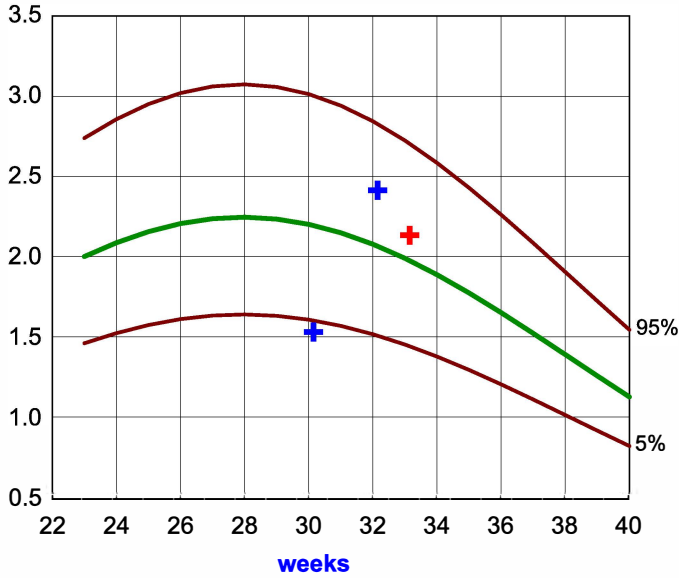
Magann et al. Am J Obstet Gynecol 2000; 182: 1581-1588

**Umbilical artery PI**



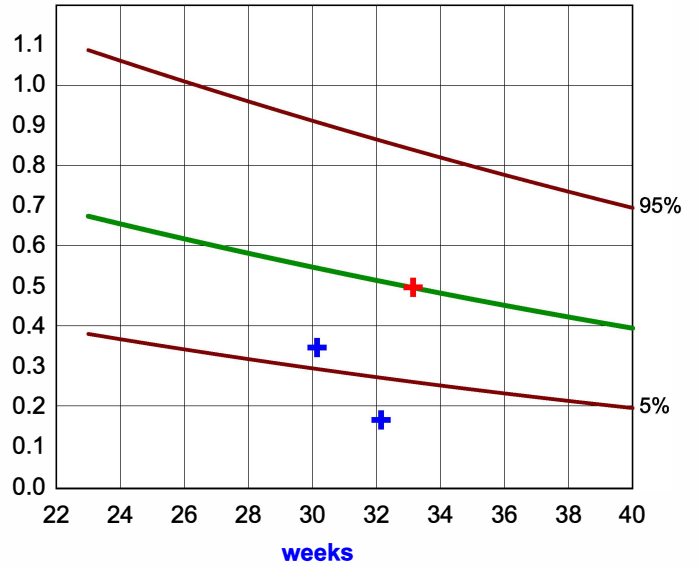
Parra-Cordero et al. Prenat Diagn 2007; 27: 1251-1257

**Middle Cerebral PI**



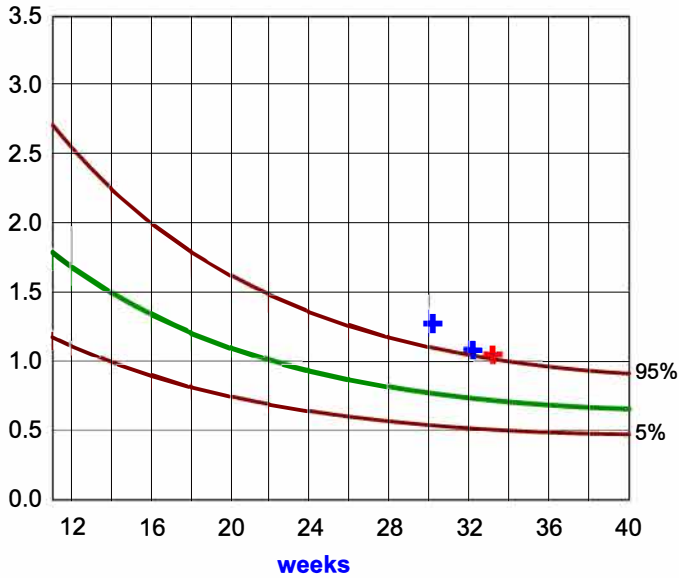
Parra-Cordero et al. Prenat Diagn 2007; 27: 1251-1257

**Ductus Venosus PI**



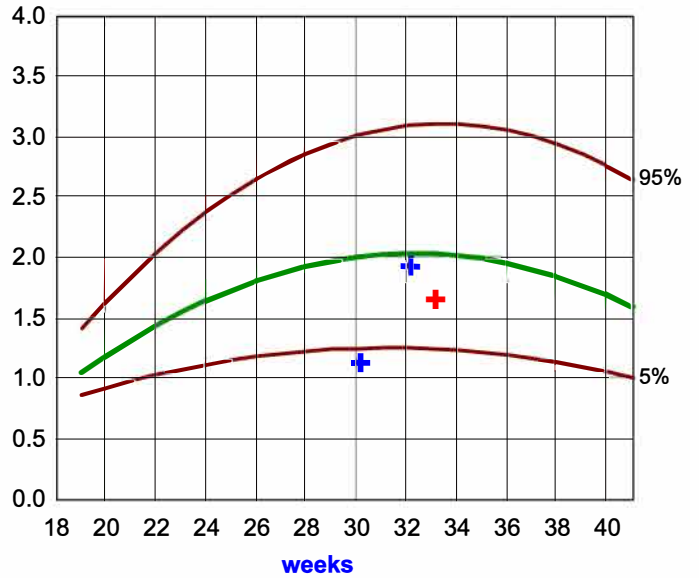
Parra-Cordero et al. Prenat Diagn 2007; 27: 1251-1257

**Uterine artery mean PI**

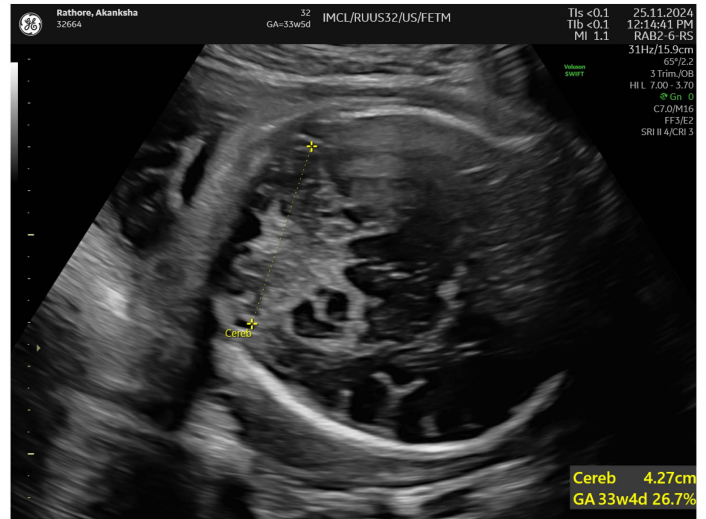
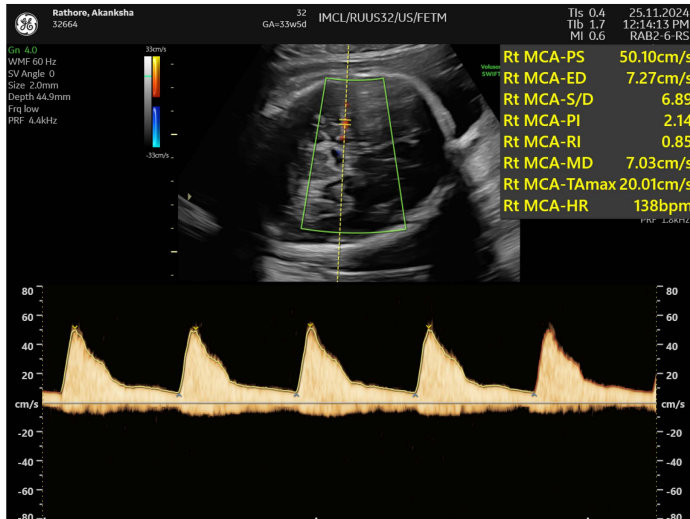


Gómez et al. Ultrasound Obstet Gynecol 2008; 32: 128-132

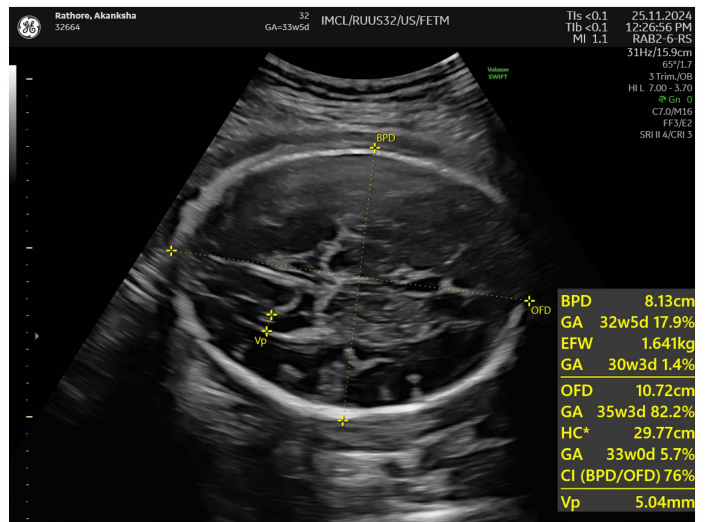
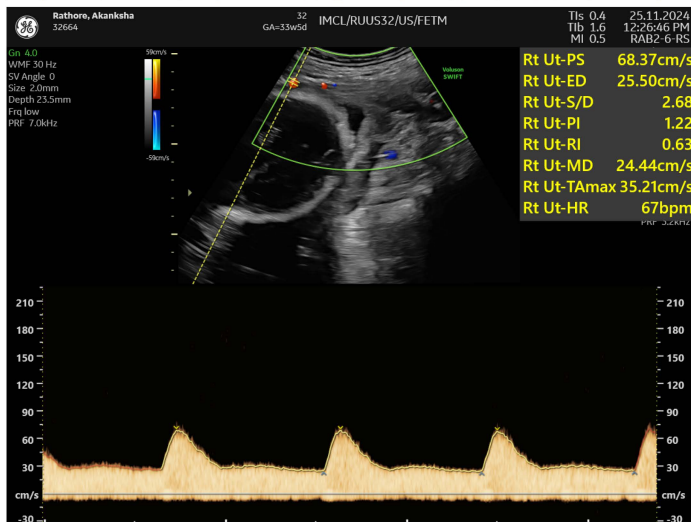
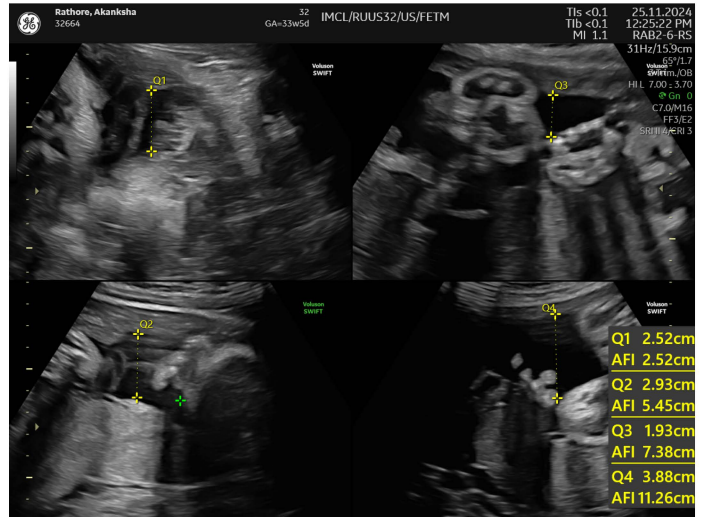
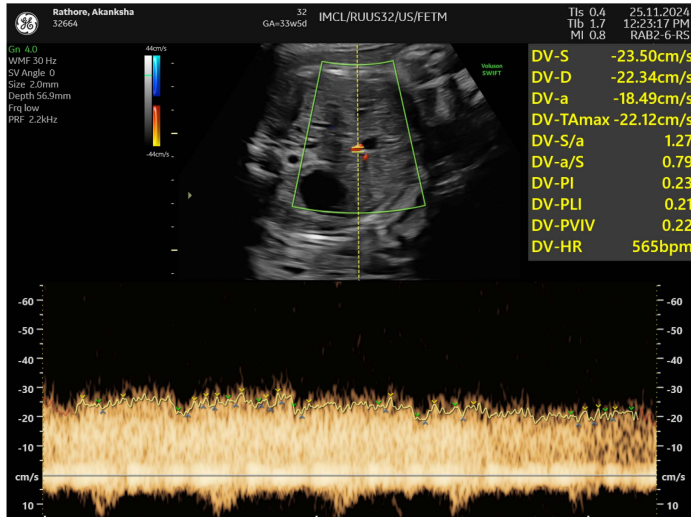
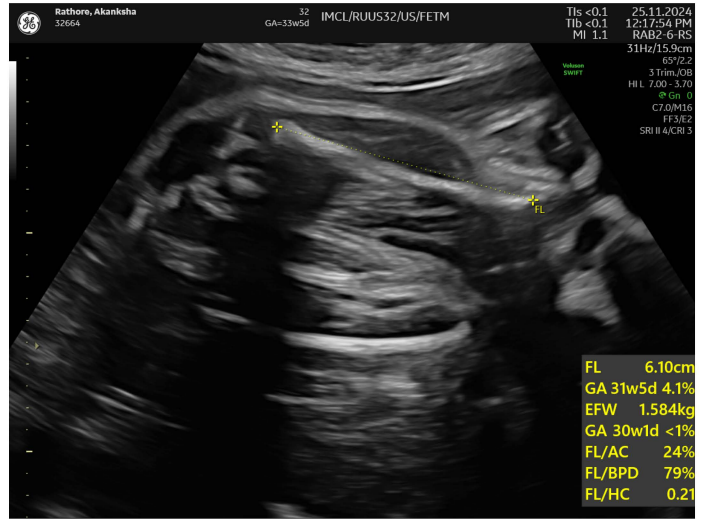
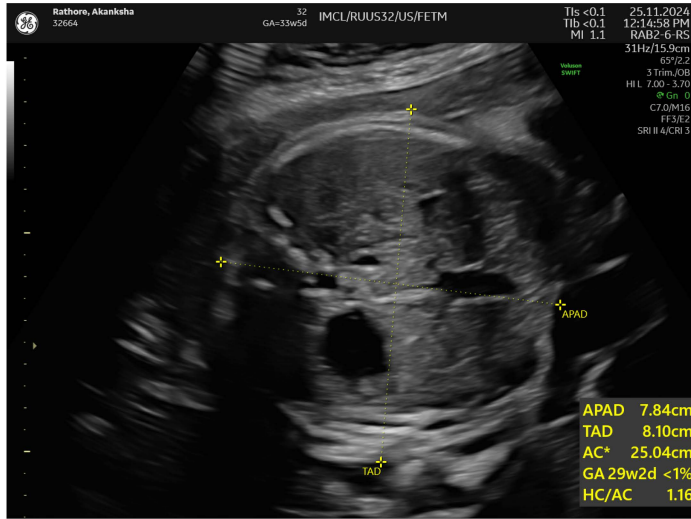
**MCA cerebro-placental ratio (CPR)**



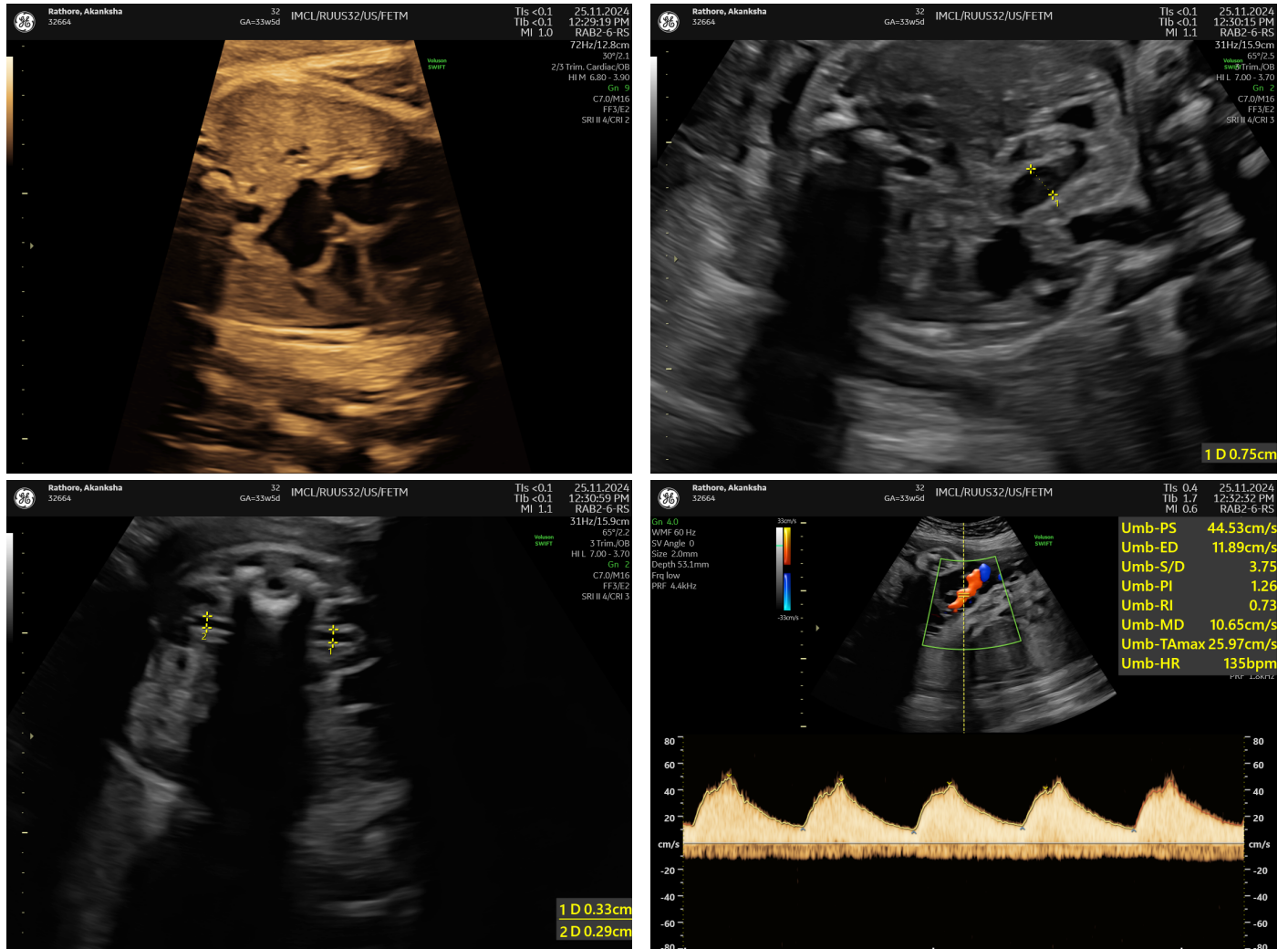
Morales-Roselló J et al. J Matern Fetal Neonatal Med 2015; 28: 338-343



# Apollo Centre for Fetal Medicine



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 Diploma in Advanced Obstetric Scanning (London)  
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**Dr Ishita Agarwal - MS (ObGYN)**  
**Dr Srishti Chandra - MS (ObGYN)**  
**Dr Tina Ann Varghese - MS (ObGYN)**

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