

## PROTOCOL FOR THIRD TRIMESTER ULTRASOUND SCANS

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

### INTRODUCTION

These guidelines concern situations in third trimester where a scan may prove helpful, in women who have had their mid-trimester scan and now present with a potential problem that may affect the management of the pregnancy.

### THIS GUIDELINE TO BE USED BY THE FOLLOWING STAFF:

Sonographers, doctors and other health professionals qualified to a minimum standard equivalent to the Postgraduate Certificate in Ultrasound

### Lead Clinician(s)

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This is the most current document and should be used until a revised version is in place

### Key amendments to this guideline

Date	Amendment	Approved by: (name of committee or accountable director)
24 June 2010	Extended for a further period without amendment.	Miss R Imtiaz
10/07/12	A positive EDF (end diastolic flow) will indicate an umbilical artery Doppler within normal limits.	Mr S Agwu
29.10.2014	1) Liquor volume changed to Single Deepest Pool rather than AFI. 2) Perform Doppler if SDP <2cm 3) Placental localisation: If low repeat at 34/40. TV scan is safe and should be done if placental edge not visualised. Anterior is clear if 2cm and posterior if 3cm from os. 4) RPD: If >7mm at 20/40 then repeat at 32/40. If >10mm at 32/40 then refer to consultant ANC and needs Paediatric alert. 5) No growth scans after 38/40.	R Duckett C Stabler
1.5.2018	Serial Growth scans for IUGR to be performed at 28/40, 34/40 and 38/40.  Growth scans after 38/40 other than IUGR protocol must be	C Stabler A Morrison R Duckett

	Consultant requests only.	
27/02/2019	Review and amendments to the guideline as per latest national recommendations	A Morison C Stabler R Duckett A Fabre-Gray
29/06/2021	Review and amendments to the guideline as per latest national recommendations and local guidelines Document approved at July Maternity Governance meeting	A Morrison A Fabre-Gray S Ghosh R Duckett
04/01/2023	Reviewed and in line with national guidelines	A Morrison R Duckett S Ghosh C Hillman - Cooper

## **PROTOCOL FOR THIRD TRIMESTER ULTRASOUND SCANS**

### **INTRODUCTION**

Ultrasound is of limited use in the third trimester though in certain situations it can be instrumental in reaching the diagnosis and formulating management plan. These guidelines concern those situations where a scan may prove helpful.

### **COMPETENCIES REQUIRED**

Sonographers, midwives, radiologists and obstetricians holding a Certificate in Obstetric Ultrasound.

### **PATIENTS COVERED**

Women who have had their mid-trimester scan and now present with a potential problem that may affect the management of the pregnancy.

### **GUIDELINE**

Ultrasound examinations of pregnancy in the third trimester can only help to identify a limited number of situations.

Scans should only be requested where the result will affect the management of the pregnancy or delivery.

Requests should be clear and concise and include relevant clinical details.

Scan should be requested on ICE by staff member involved in the patient's care.

### **FETAL GROWTH MONITORING**

All patients will have growth charts within their BadgerNet notes. Indications for ultrasound scans to monitor fetal growth are as follows:-

1. On the first plot at 24 - 26 weeks if the symphysis fundal height measurement is less than the 10th centile.
2. If during the course of the antenatal care the symphysis height measurements cross the centiles.
3. If the symphysis height measurement is above the 90<sup>th</sup> centile and becomes steeper than any curve on the chart (showing exponential increase).

If the scan is normal only repeat if further discrepancy found on measurements of fundal height.

## 1. INTRAUTERINE GROWTH RETARDATION (IUGR)

### - Growth scans

Antenatally, when there is a significant risk of IUGR uterine artery Doppler will be offered and serial growth scans performed.

Serial growth scans are commonly offered from 28, or 32 weeks of gestation, performed every 2 – 4 weeks until delivery, depending on the clinical picture. Please refer to the Management of FGR guideline.

In certain situations serial scans are commenced from 24/40.

### - Liquor Volume

Liquor volume should be assessed using cord free Single Deepest Pool (SDP). If no cord free pool is present then it should be documented.

Amniotic fluid volume changes with gestation and approximate values in third trimester are:

SDP	2- 8 cms	normal
	< 2cms	reduced liquor
	> 8 cms	increased liquor

In cases of abnormal liquor volumes fetal stomach, bladder, kidneys and movements should be checked and documented. If possible fetal face should be visualized in cases of excessive liquor. Antenatal Clinic staff should be informed of the abnormal findings and patient reviewed in DAU/Triage/ANC.

### - Umbilical Artery Doppler (UAD)

Used as a surveillance tool in women diagnosed with fetal growth restriction (FGR), it can distinguish FGR caused by utero-placental disease from non-hypoxic or constitutional causes. Monitoring FGR pregnancies with UAD measurement has been shown to reduce mortality, antenatal admissions, IOL and CS delivery. In contrast routine UAD measurement in a low risk population, does not improve outcomes.

Doppler causes heating of the insonated tissues and should **only** be used where it is of **proven** clinical value i.e. in cases of FGR.

UAD should be performed if the EFW is below the 10<sup>th</sup> centile, if there is a sudden drop in growth velocity or the AC has dropped below previous centiles.

UAD assessment should be carried out in cases of reduced liquor if there is a single deepest pool of less than 2cm.

UAD assessments will only be carried out following consultant request in cases which do not meet the above criteria.

A raised UAD PI (>95<sup>th</sup> centile) with positive end diastolic flow (EDF) and EFW <10<sup>th</sup> centile – refer to obstetric consultant on-call for review (unless scan followed by ANC appointment). Refer to obstetric guideline WHAT-TP-094 (management of FGR)

Absent/Reversed EDF – fetal medicine referral (via obstetric consultant on-call) offer admission, daily UAD and liquor assessment.

Document a single PI on report (lowest reproducible result).

Note that excessive FM or lying too flat may give a high reading

Absent/Reversed EDF to be reported as 'urgent' on ultrasound report alert system

## **2. MULTIPLE PREGNANCIES**

Serial growth scans should be offered in

- **Dichorionic pregnancy (DCDA)** – 4 weekly from 24 weeks. The usual schedule will be at the approximate weeks of gestation: 20, 24, 28, 32, and 36.

Increase frequency to 2 weekly with weekly UAD assessment if there is evidence of growth restriction / discordance.

- **Monochorionic, diamniotic pregnancy (MCDA)** – Should be scanned in the twin ANC every 2 weeks from 16 weeks (exclude TTTS/TAPS and FGR. The usual schedule of scans will be at the following weeks of gestation: 16, 18, 20, 22, 24, 28, 30, 32 and 34.
- **Monochorionic monoamniotic pregnancy (MCMA)** – Should be scanned in twin ANC every 2 weeks from 16 weeks.

For further information please refer to obstetric guideline: WHAT-TP-094-multiple pregnancy.

- **Twin to twin transfusion syndrome- (TTTS)**

### **Scan Appearance:**

- MCDA twins
- Discordant growth
- Oligohydramnios - polyhydramnios sequence.
- Smaller twin – oligohydramnios
- Larger twin – polyhydramnios
- **Staging of TTTS**
  - I- Donor bladder visible & normal doppler
  - II- Donor bladder empty & normal Doppler
  - III- Donor bladder empty & abnormal doppler
  - IV- Hydrops
  - V- Demise of one/both twins.
- **Criteria for Abnormal Doppler**
  - UADPI >95<sup>th</sup> centile or absent/reverse end-diastolic flow.(AREDF)
  - Ductus venosus: negative a-wave
  - MCA – low PI with the cerebro-placental ratio<1.

## **3. MATERNAL DIABETES**

Serial growth scans are commonly offered at 28, 32 and 36 weeks.

## **4. MATERNAL CHRONIC MEDICAL CONDITIONS**

- Chronic medical conditions: 2 - 4 weekly growth assessments from 28 weeks until delivery, depending on the uterine artery Dopplers assessment. Please refer to the Management of FGR guideline.

## **5. BREECH PRESENTATION**

Scan for fetal weight estimation should be offered for trial of external cephalic version / trial of labour in breech presentation at 36 weeks.

## **6. PLACENTAL LOCALISATION**

If the placenta is reported as clear of os at 20 weeks – even if low lying – a repeat scan is not indicated.

If the placenta is reported as abutting/covering the internal os at the 20 week scan, a follow up scan should be arranged at 32/40 weeks

Transvaginal ultrasound is safe in the presence of placenta praevia and is more accurate than transabdominal ultrasound.

Unless the placental edge is clearly demonstrated trans-abdominally a TV scan must be performed.

If the placenta remains low lying or covering the os, then DAU/ANC review will be needed for plan of care.

Measurements of growth should not be routinely performed on patients presenting for placental localisation

The placenta is classed as clear if:

It is positioned  $\geq 2\text{cm}$  from the internal os anteriorly and posteriorly

If an unknown placenta praevia is found during the third trimester the consultant on-call should be contacted before the patient leaves the department so that a decision regarding management can be made.

## **7. VASA PRAEVIA**

It should be emphasised that not all cases of vasa praevia can be recognised by sonography. (See Vasa Praevia guideline)

If vasa praevia is suspected at a third trimester scan consultant on-call should be contacted before the patient leaves the department so that a decision regarding management can be made.

It is important to differentiate the vasa praevia from cord presentation. In latter the vessel will move when patient change position, but not in case of vasa praevia.

Risk factors for vasa praevia

- Bilobed and succenturiate placentae
- Low-lying placentae at mid-trimester scan
- Multiple pregnancies
- Pregnancies resulting from IVF
- Marginal insertion of the cord
- Velamentous insertion of the cord
- Palpable vessel or a suspected amniotic band is felt on vaginal exam

## **E - ANTE-PARTUM HAEMORRHAGE (APH)**

In cases of placentae abutting or covering os at 20 weeks a repeat scan for placental localisation will be performed at 32/40 weeks. If the placenta has been reported as clear of internal cervical os at 20 weeks a placental localization scan is not indicated.

Scans are not useful for the diagnosis of placental abruption or retro-placental clot.

In cases of significant APH, scan for fetal growth and amniotic fluid volume assessment should be considered.

## **8. ABDOMINAL PAIN**

Unless a specific clinical question is asked (e.g. possible gallstones / renal scan etc.) a scan will not be performed for maternal abdominal pain.

## **9. FETAL RENAL REVIEWS**

Hydronephrosis measured as the AP diameter of the renal pelvis

>7mm up to 24 weeks

>10mm >24 weeks

Refer to FMU at WRH

## **10. ANOMALIES**

If an anomaly is found during a third trimester scan, the patient should be referred to fetal medicine and seen in the next available appointment. This should be arranged by the consultant obstetrician on call. This will be either at WRH or BWH depending on the situation.

Please refer to guideline '*Management of Suspected/Identified Fetal Anomaly*'.

## **11. - UNNECESSARY SCANS**

Scans will not be performed for the following reasons:

- Growth scans at less than 2 weekly intervals
- A repeat of a scan performed at another hospital
- Insufficient clinical information is provided on the request card

## **13. MONITORING TOOL**

Annual audit by West Midlands Perinatal Institute (WMPI)

This is carried out by recordings of images obtained which are then checked by WMPI.

Results are fed back (anonymously) to individual sonographers.

## **REFERENCES:**

RCOG green top guideline no.31 - The management of the small-for gestational age fetus

NICE guideline CG192, Multiple pregnancy: antenatal care for twin and triplet pregnancies

Twinnings textbook of fetal abnormalities, Coady, AM, Bower, S.

## CONTRIBUTION LIST

**Key individuals involved in developing the document**

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