Aneurin Bevan University Health Board

Fetal Medicine Services Pathway for Referral and Management

N.B. Staff should be discouraged from printing this document. This is to avoid the risk of out of date printed versions of the document. The Intranet should be referred to for the current version of the document.

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Contents:

Executive Summary

Fetal medicine is a branch of the maternity service that provides care for the fetus and pregnant mother. The aim of this specialised service is to provide evidence-based care to women with complex pregnancies where the fetus (or fetuses) has a confirmed or suspected disorder. This includes assessment of fetal growth and wellbeing, diagnosis and management of fetal disorders (including fetal abnormalities) and counselling and support for parents in the antenatal and postnatal periods. These pregnancies require multidisciplinary plan of care with input from other specialities like radiology, neonatology, genetics, fetal cardiology, paediatric surgery/urology/neurology and microbiology.

Scope of Policy

This guideline applies to all members of staff including midwives, obstetric medical staff working within ABUHB

Essential Implementation Criteria

Auditable standards are stated where appropriate

Aims

The aim of this document is to streamline the pathway for the fetal medicine services in ABUHB in order to ensure a standardised and efficient care based on the available evidence.

Training

The directorate will cascade training to medical and midwifery staff on the use of this guideline.

Referral Pathway within ABUHB Service Provision

This service is provided at two sites within the Aneurin Bevan University Health Board – Royal Gwent Hospital and Nevill Hall Hospital. There are 1.5 clinics every week for prenatal diagnosis and counselling in RGH. There are 2.5 fetal medicine clinics in Nevill Hall. Referrals are received from across the Health board from midwives, GPs, Consultants, radiology department. The clinics are led by 2 consultants and 1 midwife in RGH and 3 in NHH

Provision of clinics –

RGH

Ms Manjambigai

	Amniocentesis	**Fetal Medicine**
Week A	Thursday pm	Wednesday am
Week B	Thursday pm 1330-1430	Wednesday am Thursday pm

NHH

Ms D Rich

Alternate weeks		Monday am
		Tuesday pm
Alternate weeks		Thursday am Friday am

Internal Referral Pathway

A. Referral Process when a fetal abnormality is identified

*Processes differ between NHH and RGH

Sonographer reports the abnormality

Sonographer informs the antenatal clinic midwife (RGH)
(Fetal medicine midwife on Llanfoist Suite NHH)

Patient should be seen by the fetal medicine midwife / an appropriate midwife or an obstetrician in the ANC or on call team same day

a) Book appointment in the following fetal medicine clinic.
If the clinic is full, directly liaise with the fetal medicine consultants/ midwives to arrange the appointment.

b) Offer the relevant investigations
(refer to pathway for common fetal anomalies)
If karyotype is required directly book for amniocentesis in the amniocentesis clinic in RGH

Document the detailed consultation in hand held records

Add telephone number fetal medicine units :
NHH: 01873 732390/91 RGH: 01633234747

B. Referral form should be faxed to the ANC in RGH along with a telephone confirmation of the appointment. The date and time should be documented in the both hospital and patient records. The proforma should be filed in the fetal medicine folder in the ANC for audit purpose. Referrals discussed with Ms Manjambigai or specialist midwife Sam Wood.

Referral to Llanfoist Suite should be made on the dedicated forms and sent to the unit. All referrals will be reviewed by DAR

Referral pathway to Tertiary units

As per the current provision of services, the main tertiary referral unit for ABUHB is St Michael's hospital in Bristol. However for conditions requiring fetal surgery the cases can be directly referred to fetal medicine unit in UHW. Referrals for fetal ECHO can be directly made to fetal cardiology service in St Michael's Hospital, Bristol.
This will also include Powys patients. Referrals can be made directly to Southmead Hospital, Bristol (Dr Marcus Likeman) for a fetal brain MRI

The referral units usually ring the patient with the appointment date and time. The referrals to the tertiary unit should be backed up by a telephone call to confirm the appointment time and date and this should be entered in the fetal medicine referral folder in the ANC or Llanfoist Suite. The woman should be provided details of the referral units and the numbers to contact within the Health board in case of lack of correspondence from the referral unit.

Referral Criteria to Bristol

1. Invasive diagnostic procedures:

- Chorionic villus sampling (CVS)
- Amniocentesis for complex procedures particularly multiple pregnancies
- Fetal blood sampling

2. Invasive therapeutic procedures: St Michael's Hospital, Bristol

- Transfusion therapy for alloimmune red cell disease or platelet disease
- Feto-amniotic shunting – pleauroamniotic shunt, vesicoamniotic shunt
- Fetoscopic laser ablation in twin to twin syndrome (TTTS) of monochorionic twins

St Michael's will advise if referral should be made to a London Hospital

3. Invasive procedures relating to termination of pregnancy:

- Fetocide
- Selective fetocide in multiple pregnancy

4. Assessment and management of complicated twin pregnancies and complicated high order multiple pregnancies (3 or more) including:

- All invasive diagnostic tests in twins or higher order multiple pregnancies
- Suspected or confirmed TTTS/TRAP/Conjoined twins

Cases requiring a second opinion in diagnosis and counselling.

All termination of pregnancies for clauses, E, D, A, and B to be organised via fetal med consultants.

<u>Referral to FMU UHW</u> (to be discussed before referral)

1. Conditions requiring fetal surgery and delivery in a paediatric surgical unit (Neural tube defects, gastroschisis and some renal disorders)

2. Cardiac anomaly requiring delivery in UHW as advised by fetal cardiologist in Bristol.

<u>Referral for Fetal Brain MRI</u>

These are performed in Southmead Hospital in Bristol. The requests are sent as an email with a code obtained from the finance department by fetal medicine departments at RGH and NHH.

Genetics

Prenatal genetic counselling is made via a referral form. Postnatal genetics referral should only be made in those cases where there is a clear genetic link established via history or post-mortem examination findings. There are no separate referral forms for postnatal genetics referral, hence should done via a letter addressed to the lead genetics counsellor in UHW. Please specify the patients consent for the counselling in the letter.
There is a specialist genetics nurse **(Stephanie Wisniewski – 07977402104)**. Referral can be made in letter to her.

Neonatology counselling

In case of a complex anomaly it is useful to have multidisciplinary involvement and counselling by the neonatologists.
All referrals to tertiary units should be made only via the fetal medicine clinics. If this is not possible due to any reason, this should be done by the on call consultant or consultant looking after the woman. It is worth discussing the case with the fetal medicine consultants in the tertiary unit prior to the referral. All the referrals should be backed up by an appointment in the individual fetal medicine clinic in RGH or NHH.
All referrals should be filed in the relevant folder for tracking the appointment.

Useful contact numbers

Fetal Medicine - NHH: 01873 732390/91 Fetal Medicine – RGH: 01633234747 UHW Genetics – Secretary Ruth Bartlett – 02920 746911 UHW Genetics – Main Reception – 02920 742577 / Fax 02920 744028

Appendix 1

Referral Criteria for Fetal Medicine clinic

- Fetal abnormality suspected/detected at ultrasound scan at any gestation- for further counselling and pregnancy planning +/- tertiary referral
- Pregnancy complicated by possible fetal infection
- Twin pregnancy with fetal complications
- Triplet and higher order multiple pregnancy
- Anhydramnios or oligohydramnios (deepest pool less than 2cm or AFI < 5 at less than 24 weeks or unexplained oligohydramnios at any gestation
- SGA fetus (Small for gestational age) at second trimester anomaly scan or if less than 32 weeks with raised PI > 95th centile in umbilical artery Doppler
- High or rising antibody titres/ past obstetric history of fetal alloimmunisation
- Pregnancy complicated by genetic abnormality with possible recurrence
- Amniocentesis (RGH)
- Pregnancy exposed to teratogenic agents

Appendix 2 – Referral Form

This form has to be completed for ***all*** referrals including from *Ultrasound. **Patient details:**

Name		**CRN**	
Address		**GP Details**	
DOB/Age		**Telephone number**	

Maternity care details:

Name of referring person		**Consultant**	
Place of booking			

Pregnancy details:

EDD by scan		**Gestation at date of referral**	
Parity		**Gravidity**	
Significant obstetric/medical history			
Reason for referral			
Date of referral			

Date of appointment (To be filled by FMC)	

Appendix 3

Pathway for some of the commonly encountered fetal abnormalities

FIRST TRIMESTER

Raised Nuchal Translucency

Incidence: 1%.
A raised NT (>3.5mm) is associated with: chromosomal abnormalities, congenital heart disease, genetic syndromes, developmental delay and fetal death or could be a normal variant.
Investigations:
Karyotype, Infection screen: Parvo virus IgG and IgM if hygroma persists at 15/16 weeks, Cardiac echo >18-20/40
Detailed anomaly USS

Second Trimester

Increased nuchal fold(>6mm) Incidence:
<1%.
Majority of foetuses are normal but it can be associated with: chromosomal abnormalities, genetic syndromes, congenital heart disease or skeletal dysplasia.
Investigations:
Karyotype , Cardiac echo >18-20/40 , Detailed anomaly USS,
Exclude conditions causing hydrops fetalis

Ventriculomegaly

Incidence of mild ventriculomegaly: <1%.
Mild ventriculomegaly (10.1-12.0mm) can be isolated and nonprogressive or it can be associated with abnormal cerebral development, neural tube defects, congenital infection, chromosomal abnormalities or genetic syndromes. If associated with intracranial haemorrhage, evidence of fetal alloimmune thrombocytopenia should be sought.

Investigations:
Karyotype, Infection screen: CMV, toxoplasma, rubella, Detailed anomaly USS, Fetal MRI

Cleft lip/palate

The cause of cleft lip/palate is multifactorial with genetic and environmental factors being involved. It can be isolated or associated with a syndrome. Associated abnormalities include CNS abnormalities, congenital heart disease or limb deformities. The risk of chromosomal abnormalities varies according to type: unilateral cleft lip 5%, unilateral cleft lip & palate 10%, bilateral cleft lip & palate 20-30% and midline cleft lip & palate > 50%.
Incidence of cleft lip& palate: 0.1%.
Investigations:
Consider Karyotype, Cardiac echo >18-20/40 , Detailed anomaly USS and repeat 28-32/40, Refer to CLAPA Team

Gastroschisis

Incidence of gastroschisis: 0.03%.
A full thickness defect of the abdominal wall usually in the right paraumbilical area. The protruding abdominal contents are not covered by a membrane. In 10-20%if cases there are associated gastrointestinal anomalies. Chromosomal abnormalities and genetic syndromes are rare. There is a slight increase in the incidence of associated congenital heart disease. Maternal serum AFP is usually raised. The pregnancy can be complicated by premature labour, oligohydramnios, growth restriction and intrauterine death. There is no contraindication for vaginal delivery and induction is usually arranged from 37/40.
Investigations: Refer to neonatal surgical team, Deliver at UHW – IOL at 37/40, Karyotype not required if isolated , Serial growth USS

Exomphalos / Omphalocele

A midline anterior abdominal wall defect in which the protruding abdominal contents are covered by a peritoneal membrane. The umbilical cord inserts into the sac instead of the abdominal wall. Often exomphalos is associated with other anomalies: chromosomal abnormalities (40%), genetic syndromes and congenital heart disease (30-40%). Fetal mortality is increased in the presence of other anomalies.

Offer karyotype. Refer to neonatal surgical team, Delivery in surgical unit Serial growth USS

Echogenic Bowel

The vast majority will be normal. It can be associated with an intra-amniotic bleed which is of no significance. However, it can also be associated with abnormalities: cystic fibrosis, CMV infection, bowel obstruction, chromosomal abnormalities or intrauterine growth restriction.

Incidence of echogenic bowel: <1%.

Investigations: Karyotype, Infection screen: CMV, CF screen (parental), Serial growth USS.

Renal Pelvis Calyceal Dilatation

Renal Pelvis Dilatation (>7mm) could be a normal variant at anomaly or due to structural abnormalities. In one third of all cases it persists after birth, in the majority it resolves spontaneously antenatally.

Assess for risk factors for aneuploidy If present: Karyotype. If absent: repeat USS at 32/40 and obstetric Out Patient Appointment at 33/34 weeks

If persists at 32/40 refer to neonatal team

Short femur

Ensure the dates are correct. Measurements less than 5th centile can be associated with chromosomal abnormalities, fetal infection, intrauterine growth restriction and skeletal dysplasia. Measure the foot length. The foot length normally equates to the femur length. However if the foot/femur length is discordant, measure all long bones.

Investigations: Karyotype, Infection screen: CMV, toxoplasma screen,

Exclude skeletal dysplasia, Serial growth USS,

Congenital Diaphragmatic Hernia

Incidence of congenital diaphragmatic hernia: 0.02%.

Abdominal contents herniate into the chest causing pulmonary and cardiac compression. The resulting abnormalities (pulmonary

hypoplasia, lung dysmaturity and pulmonary hypertension) can lead to polyhydramnios and hydrops and result in high mortality. The lung-head ratio (LHR) is used to predict survival, with <1 associated with poor survival rates. Associated abnormalities are: structural anomalies (30-60%), chromosomal abnormalities (10-20%) and genetic syndromes. Investiagtions: Karyotype, Detailed anomaly USS, Cardiac echo ,Fetal MRI or 3D USS, Refer to neonatal surgical team, Serial growth USS, Deliver at UHW. Shared Care

Polyhydramnios

Available on intranet

Fetal Arrhythmia

Available on intranet

References

Handbook of Fetal medicine by Sailesh Kumar. Cambridge University presss. July 2010.

Fetal Medicine, edited by B Kumar & Z Alfirevic , Cambridge University Press April 2016