Department of obstetrics and gynecology GUIDELINES 1:2

MAS University hospital

**Management of pregnant women who are suspicious for IUGR**

**If weight differs from expected for ≤-15%** or **fetal growth fall >10%** registered in between two consecutive ultrasound measurements, one should contact Doppler diagnostics department for further examination. Blood flow in placenta is to be studied with attention to the signs of increased vascular resistance. Investigation of blood flow in **arteria umbilicalis** has shown that the signs of increased vascular resistance are related with IUGR, preterm labour and emergency operations. **Blood flow classes (BFC)** ranged from 0 to 3 are being used for a long time to grade vascular resistance at fetal side of placenta. Delivery in patients with BFC 2 and 3 are almost always performed by cesarean section.

Besides examination of blood flow in arteria umbilicalis, one should examine also blood flow in **arteria uterina**. Increased vascular resistance is reflected in increased pulse index (PI>1.20) or as a “notch” in the beginning of diastole. Resistance in arteria uterina can be classified according to so-called **uterine arterial score (UAS)**:

**UAS 0** – normal uterine-arterial blood flow in both vessels

**UAS 1** – one abnormal parameter in one vessel (PI >1.2 or notch)

**UAS 2** – two abnormal parameters

**UAS 3** – three abnormal parameters

**UAS 4** – increased PI (>1.2) and presence of notch in both vessels

Investigation has shown that the signs of increased vascular resistance are related with IUGR, preterm labor and emergency operations. Delivery in patients with UAC 3 and 4 are almost always performed by cesarean section.

**Further examination of placental blood flow:**

**Weight deviation without blood flow alterations (BFC and UAS 0)**

**-15%** up to **-21%** and normal flow in uterus. No further control, just at ordinary antenatal out-patient

clinic and ultrasound examination at 37 weeks of gestation

**-22%** up to **-27%** blood flow + CTG + ultrasound + high-risk antenatal out-patient clinic (visit to a

doctor) once in two weeks

**-28%** up to **-33%** blood flow + CTG + high-risk antenatal out-patient clinic every week (visit to a

doctor once in two weeks and visit to midwife once in two weeks); ultrasound

examination once in two weeks

**≤-34%** Individual patient management; chromosomal and infection analysis; thorough

screening of organs; blood flow examination minimum two times a week; CTG

minimum two times a week; ultrasound examination once in two weeks

**WITH BLOOD FLOW ALTERATIONS**

**Arteria umbilicalis**

**BFC 1**  Blood flow examination + CTG 2 times a week; specialized high-risk consultation

(visit to a doctor) every week + midwife every week; ultrasound examination once

in two weeks

**BFC 2** Blood flow examination + CTG 3 times a week; specialized high-risk consultation

3 times per week (visit to a doctor every week + midwife two times a week);

ultrasound examination once in two weeks; consider admission to a hospital; < 34

weeks steroid prescription

**BFC 3A** Admission to a hospital; serious consideration about cesarean section (direct

indication if pulsation in v. umbilicalis); consultation with neonatal specialist; < 34

weeks steroid prescription; CTG 2 times a day. Schedule elective cesarean section

with worsening of clinical situation (absence of growth, oligohydramnios or serious

preeclampsy)

**BFC 3B** Cesarean section the same day (disregarding of gestational age); CTG continuously

while waiting for operation. Before 28 gestational weeks prescribe steroids while

waiting for operation

**With normal BFC – examination of arteria uterina:**

**UAS 1-2** with normal blood flow (BFC 0 and UAS 0), but examination for weight deviation (see

above)

**UAS 3**  Blood flow examination + CTG + specialized high-risk consultation every week

(every second visit to midwife); ultrasound examination once in two weeks

**UAS 4** Blood flow examination + CTG + specialized high-risk consultation two times a week

(every second visit to midwife); ultrasound examination once in two weeks.

Schedule elective cesarean section with worsening of clinical situation (absence of

growth, oligohydramnios or serious preeclampsy)