Reducing Perinatal Mortality Project

Birmingham Fetal Growth Audit

Executive Summary

BACKGROUND

- Stillbirths are the largest contributor to perinatal mortality, and the single largest category of conditions relevant to stillbirths is fetal growth restriction (FGR). Antenatal detection of FGR and referral for appropriate investigations helps to prevent perinatal deaths. Therefore antenatal detection of FGR is a Key Performance Indicator for Birmingham and Black Country and for the regional Investing for Health programme for perinatal and infant mortality.

- Preliminary data collected by data clerks in Birmingham suggested that only a small proportion of FGR cases were detected as such antenatally. To exclude the possibility that this was an artefact due to incomplete local data collection from case notes, the Perinatal Institute agreed with representatives from Birmingham Women's, City and Heartlands Hospitals to carry out an individual case note audit.

- An audit tool was developed to examine the surveillance and management of women with an SGA baby and to cross-check the accuracy of the data previously submitted. A team from PI went to three individual units in 2007 to audit a total of 526 pregnancies and births which occurred over a 3 month period where the baby was born FGR (<10th customised birthweight percentile).

FINDINGS

1. **Detection rates**
   Of the 526 FGR cases, 448 (85.2%) of case notes were available for audit. Of these, 80 (18.2%) were diagnosed antenatally (range 13.1-24.2%, Table 1). While this was more than the rates suggested in the routinely submitted data, it was substantially below the B&BC target (60%).

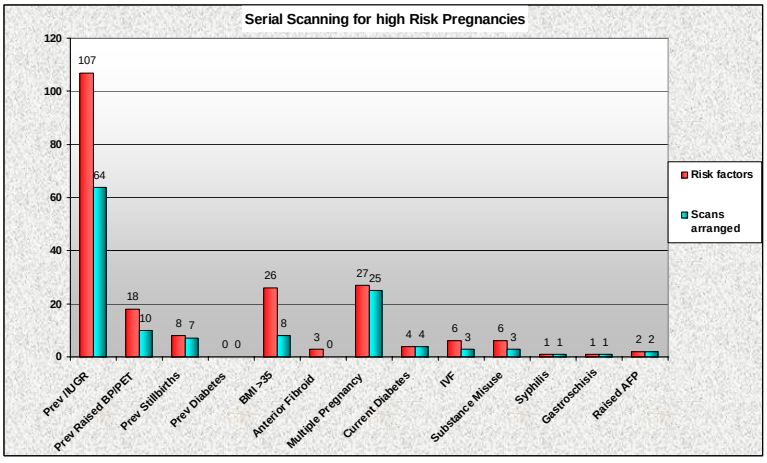
Table 1

	Unit A	Unit B	Unit C	Total / average
Sample & proportion (%) of all FGR births	222 (91%)	77 (85.6%)	149 (77.6%)	448 (85.2%
Antenatal detection rate of FGR	13.1%	19.5%	24.2%	18.2%

The audits identified several issues with the surveillance and management of FGR, relating mainly to recognition of risk factors from the beginning of pregnancy, and screening for FGR when it develops during pregnancy

2. **Recognition and management of risk factors at the beginning of pregnancy**
   174 (38.8%) women had one or more risk factors warranting increased surveillance of fetal growth by ultrasound scan. However, this was instituted in only 103 (23.0%) of cases, or 61% of all at-risk cases. Fig 1 shows the risk factors and rates of recognition. The largest group was P/H of IUGR.

Figure 1



a. Recognition of past history FGR as a risk factor was particularly low in one unit where previous baby weights were not being entered on the customised growth chart software.
b. In 40.1% of cases (range 19-59%)where previous FGR was present, no serial scanning was offered during the pregnancy

Table 2

Third trimester Scans	Frequency
34	21
Between 3-4 weeks	9
28, 34	6
6 weekly	6
28	5
36	2
28,32,34	1
28,32,36	1
28,35	1
30,34,36	1
32,36,38	1
28, 33, 35	1
24, 28, 32, 36	1
24, 28, 32, 36	1
33, 35	1
32	1
Between 3-7 weeks	1

c. Where serial scanning was instituted, there was a large heterogeneity of the number of planned scans in the third trimester, ranging from 1 to 4 scans (Table 2)

3. Recognition and management of FGR during pregnancy

a. While customised growth charts were used in most pregnancies (95.9-100%), there were some concerns over appropriate use - e.g. not being printed until late in pregnancy, number of fundal height measurements, not plotting of estimated fetal weight.
b. The number of fundal height measurements for low risk pregnancies varied considerably (2-10) with no apparent reason for this variation in some instances.
c. The time between referral by the community midwife and ultrasound scan appointment for women with suspected FGR varied considerably. Some women were being seen on the same day, while others had to wait for over one week in some instances. (Table 3)

Table 3

	Number of days between referral and ultrasound scan										
Days	**Same day**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10 or more**
N	29	19	8	5	4	1	2	4	2	2	7
%	30.5%	20.0%	8.4%	5.3%	4.2%	1.1%	2.1%	4.2%	2.1%	2.1%	7.4%

SUMMARY AND RECOMMENDATIONS

The audit has confirmed that three-quarters or more of babies born FGR in Birmingham are currently not recognised as such during their antenatal care. The audit has highlighted several reasons which are summarised below, together with the proposed action.

- Many women who are high risk from the outset of pregnancy are currently not recognised to be high risk and requiring increased surveillance.
  - ☞ There is a need for increased awareness and training at unit level to ensure that the appropriate management is instituted.

- The method of surveillance varies considerably between units and between women with affected pregnancies. This is likely to be related to a chronic shortage of ultrasound resources.
  - ☞ There is an urgent need for increased resources and staffing to deliver a third trimester ultrasound service which is able to improve the detection of FGR babies.

- There is significant variation in the use of fundal height measurement and referral for further investigation.
  - ☞ Training and accreditation for fetal growth assessment and management was commenced by the Perinatal Institute in 2007/8, along RCOG guidelines. It is recommended that all midwives and obstetricians involved in antenatal care should attend the training.

This audit will be continued as a rolling programme of regional data collection, as part of the West Midlands Investing for Health project.