Stillbirths: causes and prevention

Consultation response to Health and Social Care Committee,
National Assembly of Wales

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Introduction

The purpose of this submission is to summarise our experience in addressing stillbirths in the West Midlands, and allow consideration whether it might be relevant when looking at the high stillbirth rate identified in Wales.

Background

The Perinatal Institute is a West Midlands based NHS organisation which seeks to enhance the quality and safety of maternal and perinatal care, and to reduce adverse outcome by investigating causes and developing strategies for prevention.

Rather than relying on potential solutions from future research, we recognise that relevant evidence and recommendations already exists, but often need concerted and sustained effort for proper implementation. This approach has led to improvements in key performance indicators in maternity services, and significant reductions in avoidable perinatal deaths, as well as recent national recognition in the 2012 BMJ Health Innovation Awards for Patients Safety.

Evidence

1. There has been little if any change in stillbirth rates in the UK over the last 2 decades, despite public health initiatives, reports from CESDI, CEMACH and CMACE, NICE guidelines, and various research initiatives into establishing underlying causes.

2. Conventional classification systems have resulted in up to two thirds of stillbirths being categorised as unexplained, which may be seen as suggesting that they are also unavoidable [1]. We developed a novel classification (ReCoDe) which looked at all relevant clinical conditions, and applied it to a database of 2625 stillbirths in our region. We found that the proportion of 'unexplained' cases was reduced to 15%, with the largest category (43%) being intrauterine growth restriction (IUGR), diagnosed according to the baby's customised weight percentile at the time of death [2].

3. A programme of confidential enquiries in the West Midlands also found that many normally formed stillbirths considered 'unexplained' had IUGR, mostly unrecognised antenatally. The peer review panels found that 86% of antepartum stillbirths with IUGR would have been potentially avoidable (CESDI Grades 2 & 3) with better care [3].

4. The results of the individual case reviews were fed back to the respective units/ Trusts and compared with the results of their own in-house assessments. In many cases, units had failed to identify problems and derive useful learning points from their own assessments. This stimulated the recent, SHA supported development of Standardised Clinical Outcome Reviews (SCOR), which we are currently piloting in the West Midlands as well as in units in the North West, Scotland and Canada [4].

5. Case note audits of live births confirmed that most instances of IUGR are not detected antenatally. This applied to both low risk and high risk pregnancies. Furthermore, mothers at increased risk often fail to receive sufficient scans for serial monitoring of fetal growth [5]

6. Recent, unpublished multivariable analysis of our linked databases of live births and stillbirths confirms maternal obesity and smoking (active and passive) as modifiable risk factors for stillbirth. However IUGR is the strongest potentially avoidable factor, with the highest etiological fraction. Pregnancies with IUGR have a 7 fold increased risk of stillbirth, and the risk is significantly reduced when IUGR is detected antenatally.

Actions

1. With the collaboration of all stakeholders including provider units, PCTs and the SHA, we established *'antenatal detection of intrauterine growth restriction'* as a key performance indicator. This as well as other indicators such as early booking and smoking cessation are monitored as part of a core dataset, and recorded on the regional perinatal episode electronic record (PEER) [6].

2. We set up a fetal growth training & accreditation programme for midwives, doctors and ultrasonographers, with workshops including standardised fundal height measurement, the use of customised growth charts, and protocols and referral pathways for ultrasound and Doppler. Customised charts, recommended by RCOG guidelines [7], adjust the fetal growth curve in each pregnancy according to the mother's characteristics, resulting in reduced false positives and unnecessary investigations as well as improved detection of pathological growth [8].

3. In Birmingham, an area with high rates of stillbirth and fetal growth restriction, we also implemented the community growth scanning (CoGS) programme, delivered by midwives trained in growth scanning, to help increase availability and access to third trimester ultrasound [9].

Progress

1. There is an increased awareness of the overall significance of IUGR as a risk factor, which we attribute to the rolling programme of KPI audit, case review and training.

2. Despite continuing ultrasound shortages, antenatal IUGR detection rates have increased from <30% in 2009 up to 37% in 2011. However there is wide variation between units, and a direct relationship between performance and uptake of growth training and protocols, with rates of 50% being reached in the more advanced units [6]. Detection rates are higher in high risk pregnancy, and once referred for scan on the basis of fundal height surveillance, it reaches 60-80%.

3. The latest perinatal mortality rates for Birmingham & Solihull indicate a significant downward trend in normally formed stillbirths with IUGR. This reduction was most marked for stillbirths from 30+ weeks gestation, while there was no corresponding increase in the rate of early neonatal deaths [10].

Wales

The potential relevance, if any, of the West Midlands experience for the high stillbirth rates identified in Wales could be quickly established.

1. The latest reports from Wales suggest that over 40 % have 'no antecedent or obstetric factors'. It is our contention that many of these cases will be growth restricted, as we have observed in the West Midlands, and are hence potentially avoidable. We are currently assessing the Northern Ireland perinatal mortality database and are obtaining similar results.

2. A confidential enquiry into a selected stillbirth cohort (e.g. normally formed stillbirths from 34 weeks gestation), applying the SCOR process with Welsh multi-professional peer review panels, would be able to quickly establish whether similar factors apply in Wales as in the West Midlands, and would also help highlight other relevant factors of relevnce.

We would be pleased to assist the Welsh national programme if our West Midlands experience is deemed potentially useful, and would also be happy to help implement any of the fore-mentioned tested tools and processes, as desired.

References / Links

1. Gardosi J. Clinical implications of unexplained stillbirths Commentary in 8th CESDI Report
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8. Gardosi J. Clinical strategies for improving the detection of fetal growth restriction. *Clin Perinatol* 38 (2011) 21–31; doi:10.1016/j.clp.2010.12.012

9. Community Growth Scanning Project (CoGS) www.pi.nhs.uk/cogs/

10. West Midlands PCT Cluster Reports - Perinatal & Infant Mortality 2010
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