

## Editorial

Jason Gardosi

# Preventing stillbirth: risk factors, case reviews, care pathways

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*The first priority for stillbirth prevention is to increase awareness, and this is why I welcomed Professor Dudenhausen's invitation to be guest editor for a special issue on stillbirths for the Journal of Perinatal Medicine. Professor Alex Heazell joined as co-editor and together we sent out an invite for contributions on current work in this area. We were pleasantly surprised about the response, and have been able to include 21 articles in this issue, on a wide range of subjects which however fit easily into two main categories: efforts towards preventing stillbirth, and management after it has sadly happened. This editorial introduces the contributions on prevention, while Alex presents an overview of the articles relating to management [1].*

'Prevention is better than cure'. Except in the case of stillbirth, there is no cure – so the emphasis needs even more to be on prevention of a catastrophic outcome for mother and baby. To make it worse, case reviews find in many instances that the outcome was avoidable. It is a global problem, with an estimated 2.6 million stillbirths annually, the vast majority in low and middle income countries [2]. The number may be even higher, as often there is no record, and the loss of life is not counted. Timing of death is also difficult to ascertain, but a high proportion – perhaps 50% or more [3] are intrapartum stillbirths, while in high income countries nine in ten deaths occur before labour. A key priority – and a challenge especially in rural areas – is to ensure that mothers receive at least basic antenatal care and have access to a care facility with obstetric services, to deal with complications and emergencies such as anaemia, pre-eclampsia, infection and prolonged or obstructed labour.

Most articles in this issue deal with challenges when such services are already available, but the studies are relevant for efforts everywhere to reduce the global burden of stillbirth.

Risk assessment underpins the plan of antenatal and intrapartum care. A fitting start to this section is an investigation in Brazil [4] of the association between fetal mortality risk and a social vulnerability index based on three parameters – 'income and work' including poverty; 'urban infrastructure' related living conditions; and 'human capital' including educational level. The association with fetal mortality highlights the importance of socioeconomic factors and deprivation in all environments, and indicates also that stillbirth needs to be recognised as a public health issue.

Following on, two papers from India provide a timely examination of the link between the COVID pandemic and stillbirth rates, and are consistent in their finding that, when an adequate level of antenatal care could be maintained, no differences were found in stillbirth rates [5]; whereas when total lockdown did affect antenatal services, there was a significant increase in stillbirth rates [6].

Reduced fetal movement (RFM) is an important warning sign yet a cluster randomised trial [7] did not find that training and management protocols had a significant effect. However ter Kuile et al. [8], observed that RFM in pregnancies which end in stillbirth was associated with placental pathology, which suggests that RFM could be used as a trigger for tests of placental dysfunction. Good antenatal care is also essential to identify and manage hypertensive diseases in pregnancy. Investigators in Nigeria confirmed previous studies that pre-eclampsia was associated with stillbirth, and showed that this risk increased in mothers who had no or only limited antenatal care [9].

Learning from adverse outcome is essential and should inform any prevention strategy. Gutman et al. [10] undertook a systematic review of audits to identify risk factors and case reviews, and their main conclusions highlighted the need for standardised audit tools and staff training. This also applies to stillbirth classification systems, where Lupariello et al. [11] compared two commonly used systems, ReCoDe and ICD-PM, and found that both perform similarly but could be better if provided with specific guidelines and illustrative examples to assist with interpretation. The main focus of ReCoDe (as well as ICD-PM which added the maternal component) was to

include a category for fetal growth restriction (FGR), or small for gestational age (SGA) as its proxy [12]. This in fact became the largest category, and also accounted for most of the ‘unexplained’ deaths. Subsequent epidemiological evidence not only confirmed that FGR constituted the largest risk, but that this risk could be reduced by at least half if it was recognised antenatally [13].

In a facility based audit in a tertiary centre in North India, Sharma et al. [14] conducted a review of their stillbirths applying the WHO ICD-PM classification. Key findings included firstly, that such reviews are feasible and hence ought to be encouraged to help determine priorities for prevention; secondly, that the largest category of antepartum deaths was associated with growth disorders, emphasising the need for screening for fetal growth restriction; and thirdly, that the process of audit itself helped to improve intrapartum care, as shown by the reduced proportion of stillbirths which occurred during labour.

Chandra and colleagues [15] in a tertiary centre in South India took up the challenge of improving screening for fetal growth restriction by implementing the Growth Assessment Protocol (GAP), a programme of training in risk assessment, fundal height measurement, customised growth charts and referral pathways. They report the results of a longitudinal study of the effects which found that, compared to the pre-implementation baseline, there was an increase in antenatal detection of SGA, accompanied by significant reductions in term stillbirths as well as admissions to neonatal intensive care and incidence of neonatal encephalopathy. An important observation by the authors was that full implementation and ‘embedding’ of such a change management initiative in their centre took up to a year.

The importance of proper evaluation of a stillbirth prevention strategy based on improved fetal growth surveillance is highlighted in a review by Butler et al. [16]. Implementation on a wider scale requires local champions and full engagement to adopt new ways of collaborative, multidisciplinary working. The authors summarise the evidence for the elements of the GAP programme including customised charts, and how improved antenatal detection of FGR has contributed to the year on year decline in stillbirth rates in England [17].

Optimal timing of delivery is essential, and there is increasing awareness of the need to balance the desire for intervention with increased risk of neonatal morbidity and adverse sequelae in infancy and childhood following iatrogenic preterm or early term delivery [18]. Agarwal and colleagues [19] investigated how fetal size at term affects the prospective risk of stillbirth, and produced a week by week risk table which can help clinicians in management and advice to mothers.

Overall, these articles provide an important snapshot of new evidence which supports the concept of potential avoidability of many stillbirths in different health service environments.

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