Cohort study

Small-for-gestational-age pregnancies are at cumulative increased risk of stillbirth for each week pregnancy continues beyond 37 weeks

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Implications for practice and research

- This article could improve nurses' knowledge of the importance of small-for-gestational-age (SGA) pregnancies and of their substantial contribution to the burden of stillbirth. It also provides evidence as to why SGA pregnancies are delivered prior to full term.

- Longer term outcomes for SGA children must be further investigated, as should maternal attitudes to timing of delivery.

Context

SGA (usually defined as birth-weight <10th centile) affects approximately 10% of pregnancies. Approximately 40% of non-anomalous stillborn infants are SGA, comprising a major contribution to the global public health problem of stillbirth.[1] Optimising outcomes for SGA infants diagnosed before birth is affected by the competing risks of prematurity and, if pregnancy continues, late stillbirth. The aim of this study was to investigate weekly and cumulative stillbirth risk, beyond 37 weeks, in SGA pregnancies. This study included 3333 SGA and 47 053 non-SGA pregnancies from a Washington University perinatal database.

Methods

This retrospective cohort study was conducted using prospectively collected perinatal data. Data during pregnancy and at the time of delivery were entered by trained research nurses. The study population comprised all singleton pregnancies from 1990 to 2009 that were subject to an anatomy scan between 16 and 23 weeks of gestation, comprising 97% of the eligible study population. Any missing key data were obtained from the maternity care provider. The number of stillbirths per 10 000 ongoing pregnancies is reported for each week of gestation, as is the cumulative risk for each individual woman throughout the remainder of pregnancy.

Findings

A twofold increase in stillbirth occurred in SGA pregnancies beyond 37 weeks versus those delivered at 37 weeks. The risk of SGA stillbirth increased significantly at 39 and 40 weeks. The risk of stillbirth in the 38th week was not significantly increased compared with 37 weeks, except in severely SGA infants (<5th centile). Perinatal morbidity reduced as gestation advanced in SGA survivors. The authors concluded that there is a significant increase in the cumulative probability of stillbirth in SGA pregnancies after 37 weeks and advocated delivery of SGA pregnancies at 37–38 weeks to minimise the risk of stillbirth.

Commentary

In current practice, the majority of SGA babies remain undetected before birth. A reduction in perinatal mortality in SGA infants late in pregnancy requires a combination of increased detection and optimal timing of birth. Increased antenatal detection of SGA can be achieved with implementation of customised antenatal growth charts in routine antenatal care.[2] The recommendations from this article regarding the optimum timing of delivery (37–38 weeks) are consistent with data from other epidemiological studies which show an increase in SGA perinatal mortality after 37 weeks, with a particular increase after 38 weeks. The recommendation for delivery at between 37 and 38 weeks in late-onset SGA is also in keeping with findings from the Disproportionate Intrauterine Growth Intervention Trial At Term (DIGITAT) trial and with recently published, evidence-based SGA guidelines.[3–5]

The methodology used to calculate the incidence of stillbirth with ongoing pregnancies as the denominator (instead of live births) is appropriate given that this is the population at risk of stillbirth during a specific week. In addition, the estimation of cumulative probability, conditional probability and risk ratios are appropriate. The ethnic diversity of the sample provides some external validity to the findings, but it is unclear whether the loss to follow-up rate and availability of birth-weight data differ between women who delivered stillbirths and those who delivered live births. A further limitation is the relatively small number of SGA stillbirths included in the study.

In conclusion, this study confirms that from a population perspective 37–38 weeks is the optimum timing for birth in SGA pregnancies. Future research is required to determine if there are subgroups of late-onset SGA pregnancies who require earlier delivery and others where pregnancy can be safely prolonged to term. Major reductions in perinatal mortality in SGA pregnancies will require successful initiatives to identify more of these vulnerable babies before birth.

Competing interests None.

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References

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