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The contribution of late termination of pregnancy to stillbirth rates in Northern England, 1994-2005

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Shortened title: Effect of late terminations on stillbirth rates

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Abstract

The impact of late terminations (≥ 24 weeks) on the overall stillbirth rate was determined for the twelve year period from 1994 to 2005 using data collected by the Regional Maternity Survey Office in the north of England. It is a legal requirement to register late terminations and this may lead to an overestimation of the true stillbirth rate. In our region, terminations resulting in stillbirth increased the registered stillbirth rate by nearly 10%. The impact remains stable for the period 1998-2005. This suggests that failure of the national (and regional) stillbirth rate to decline in recent years is not due to an increase in late terminations.

Introduction

Stillbirth rates in England and Wales have remained largely unchanged since 1992, while the neonatal mortality rate has steadily declined¹. These national trends are reflected in data from the northern region of England². It is known that some pregnancies resulting in stillbirth, and a smaller number resulting in live birth, were pregnancies that were terminated. This is because it is a legal requirement in the UK (Stillbirth Definition Act 1992), since October 1992, to register as a stillbirth any fetus delivered at or after 24 weeks gestation showing no sign of life, even if the stillbirth follows a termination of pregnancy. In England, termination of pregnancy at or after 24 weeks is legal for certain indications, including substantial risk of serious physical or mental handicap in the child, and risk to the life of the mother.

Many terminations occur following the prenatal detection of a congenital anomaly, and although these will be categorised as stillbirths when they occur at or after 24 weeks gestation, there is little information on how these late terminations, and those carried out for other reasons, affect the stillbirth rate. We hypothesised that the inclusion of late terminations of pregnancy in the stillbirth rates influences the ability to detect changes in the true stillbirth rate. We therefore set out to ascertain the impact of these terminations on the stillbirth rate and to describe the reasons for late termination in relation to congenital anomalies and multiple births.

Methods

We examined the data held on the Perinatal Mortality Survey (PMS) and Northern Congenital Abnormality Survey (NorCAS), at the Regional Maternity Survey Office (RMSO). The RMSO has collected population-based data on perinatal and infant deaths, including termination status, since 1981 in the North of England³. Stillbirth data is cross validated annually with the Office of National Statistics. NorCAS has also collected information on all congenital anomalies, detected antenatally or postnatally, in the same population since 1985³.

We analysed all terminations of pregnancy ≥ 24 weeks gestation from 1st Jan 1994 to 31st Dec 2005 inclusive. Data were categorised by number of fetuses and reason for termination. Congenital anomalies were defined and categorised in line with the European Surveillance of Congenital Anomalies (EUROCAT) subgroups (for details, see www.eurocat.ulster.ac.uk/pdf/EUROCAT-Guide-1.3.pdf). Analysis of congenital anomalies was based on the best suspected antenatal diagnosis, reflecting the decision making process that led to termination. Stillbirth rates were calculated with and without late terminations included, using all regional registered births as the denominator, in three four-year epochs.

Results

There were 173 legal terminations of pregnancy (ToPs) at or after 24 weeks gestation resulting in stillbirth out of a total of 2245 registered stillbirths. The stillbirth rate including and excluding ToPs, and the proportion of stillbirths recorded as ToPs, is shown in table 1 for each epoch 1994-97, 1998-2001 and 2002-2005. The proportion of stillbirths recorded as ToPs is 5.5% for the first epoch and 9.0% for the later two epochs. Almost two-thirds (109 cases, 63%) of the ToPs occurred at 24-27 weeks' gestation. The remaining ToPs were equally divided (n=32) between gestational ages of 28-31, and over 32 weeks.

146 (85%) of the 173 ToPs were performed following the detection of a congenital anomaly. Of these, the most frequent were chromosomal anomalies (34%), CNS anomalies (30%) and cardiovascular anomalies (12%). Trisomy 21 accounted for a third of the terminations carried out for chromosomal abnormalities, while trisomy 18 accounted for 28%. Using the aetiological classification of congenital anomalies as described by Wellesley et al⁴, over half of these terminations were for isolated anomalies (53%).

Of the 27 (15%) ToPs that were for reasons other than congenital anomaly as defined by EUROCAT, eight (30%) were for pre-eclampsia and six for hydrops. All late terminations were for specific maternal or fetal conditions. None of the late terminations was carried out for social reasons.

Of the 17 multiple pregnancies in which there was a late termination, three fetuses were subject to feticide before 24 weeks, but were registered as stillbirths at delivery of the co-twin which occurred after 23 completed weeks. Six terminations were for neural tube defects.

There were seven babies whose pregnancies were terminated at or after 24 weeks, either for severe congenital anomaly or severe intracranial pathology, and who were born alive (five at 24-25 weeks and two at 30-31 weeks). These babies remained with their mothers for palliative care and the maximum length of survival was five hours.

Discussion

It is apparent that the inclusion of late terminations in the overall stillbirth rate results in an overestimation of the real rate, by nearly 10%. The extent of this distortion has increased since 1994 but this increase does not account for the failure of stillbirth rates as a whole to decline in more recent years⁵. Furthermore, the proportion of late termination in relation to registered stillbirth in the north of England has remained static since 1998.

The inclusion of terminations in stillbirth rates has other implications. Studies looking at the natural history of disease may overestimate the possibility of stillbirth and underestimate the possibility of live birth if the true circumstances of the birth are not clear. The effect on the headline stillbirth rate could also affect the assessment of perinatal outcomes at individual maternity units if the fact that some stillbirths have resulted from terminations is unclear, and especially if late terminations take place preferentially in certain specialist units. Therefore, any clinical or epidemiological studies of stillbirths should take into consideration the impact of late terminations on the results, though quantifying the impact could be difficult as termination is not always recorded on stillbirth certificates.

The majority of late terminations were carried out for congenital anomalies, in particular for chromosomal abnormalities (trisomy 21 and 18), spina bifida and hydrocephalus. In view of the national policy of offering first trimester scanning and screening for Downs Syndrome for all pregnant women who book before 20 weeks, there may be a decrease in the number of late terminations if affected pregnancies are detected earlier.

A small number of early selective terminations of twins resulted in fetus papyraceous being registered as stillbirths. Guidance issued in 2005 by the Royal College of Obstetricians and Gynaecologists (RCOG)⁶ stated that fetuses that demise (or are terminated) before 24 weeks in a multiple pregnancy but are expelled at or after 24 weeks need no longer be registered as stillbirths. The impact of this guidance may be to decrease the total number of recorded multiple births with a consequent apparent improvement in the outcome of multiple pregnancies, as the babies born from these pregnancies may now be registered as singleton births.

There were a small number of cases of late terminations that resulted in live births. This reflects the fact that not every family opts for feticide pre-delivery. The number of cases of live births after late termination was so low as to have no impact on stillbirth rates even if feticide were universally chosen.

In conclusion, we have shown that late termination, predominantly for fetal anomaly, increases the apparent stillbirth rate, but for the last decade this contribution has been relatively static. The earlier diagnosis of fetal anomaly, particularly chromosomal abnormalities, may reduce the rates of late termination in the future.

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Conflict of interest: None

Contribution to authorship

Details of Ethics approval

The registers have approval from the Patient Information Advisory Group (PIAG) to collect patient data under Section 60 of the Health and Social Care Act (2001). This piece of research falls within the existing ethical approval framework for work carried out at the Regional Maternity Survey Office.

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Table: Number of late terminations resulting in stillbirths (≥ 24 weeks gestation), stillbirths, and stillbirth rates in the Northern region by year group.

Epoch	1994-1997	1998-2001	2002-2005	Total
Births	136516	122153	122533	381202
Late terminations	47	61	65	173
Registered stillbirths	848	677	720	2245
Terminations as % stillbirths	5.5	9.0	9.0	7.7
Stillbirth rate, including late terminations per 10,000 births	62.1	55.4	58.8	58.9
Stillbirth rate, excluding late terminations per 10,000 births	58.7	50.4	53.5	54.4