Postneonatal mortality in children from abusing families

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Summary and conclusions

The postneonatal death rate was studied for 332 infants from 160 families, ascertained through an abused proband. There were nine deaths compared with 2.9 expected from the legitimacy, social class, age, and parity distribution ($p=0.003$). All but one of the babies died at home, and all were referred to a coroner or procurator fiscal. No adequate explanation of death could be found in four cases. Bonding problems probably existed in most of the nine families before death occurred.

Introduction

There is some evidence that children from abusing families are at greater risk of death in infancy, not necessarily as a result of abuse.^{1,2} In addition research on the sudden infant death syndrome has highlighted associated factors such as young maternal age, premature delivery, and neonatal morbidity,³⁻⁵ all of which are also associated with child abuse and neglect.^{6,7}

The aim of our study was to ascertain the risk of postneonatal death in families where child abuse had been identified.

Population and methods

The study population consisted of 332 children from 160 families who had been referred to Park Hospital for Children, Oxford, from 1958 to 1977. None of the families had been referred as a consequence of postneonatal death. At least one child from each family had suffered actual physical abuse or gross neglect, or both, as defined previously.⁸ The families had all lived at one time in Oxfordshire or west Berkshire. For the purpose of this study, all abused children who were referred after they had reached 12 months of age have been excluded.

report of infant deaths in these families, because of the possibility of deaths occurring outside the record linkage area. Where a death had been reported death certificates and pathologists' reports were consulted for accurate information on the death. Personal accounts from parents, doctors, or social workers were therefore never the sole source of information.

Once we had established the actual number of deaths the expected number of deaths was calculated. All 72 abused probands who were under 12 months at referral were calculated to be at risk of postneonatal death only for the remaining part of that year. Given the nature of the sample, we had to take into account the year of birth of each baby, illegitimacy, maternal age, parity, and social class, using national information published by the Office of Population Censuses and Surveys (OPCS).^{9,10} The OPCS's definition of parity and the Registrar General's classification of occupation for defining social class¹¹ were used.

In estimating the expected number of deaths in the sample of illegitimate births, we could standardise only for maternal age and year of birth as parity and social class are not recorded by the OPCS for illegitimate births.

The expected number of deaths in the legitimate group was estimated by standardising for year of birth, social class, and, where possible, maternal age and parity (inadequately described occupations and armed Forces are not subdivided into maternal age and parity groups by OPCS).

Results

Nine children aged from 1 to 12 months had died by the end of 1978. None of those who died was an abused proband.

There were 74 illegitimate live-born babies in the study population, four of whom died compared with an expected number of 0.609. Out of the 258 legitimate live births, five babies died compared with the 2.338 expected. There were thus only 2.947 deaths expected, compared with nine observed ($p=0.003$, Poisson). In other words the risk of death in this group was three times that expected. Table I gives the

TABLE I—Birth details of infants who died

Case No	Sex	Legitimacy	Mother's age	Birth order	Social class	Birth weight (g)
1	F	Legitimate	22	2	Army	2070
2	M	Legitimate	21	1	V	3100
3	M	Illegitimate	19	1	—	3100
4	M	Legitimate	25	2	Unemployed	2500
5	M	Illegitimate	29	2	IIIm	3500
6	F	Legitimate	21	3	V	2300
7	F	Illegitimate	33	4	V	2220
8	M	Illegitimate	22	2	V	3800
9	F	Legitimate	29	2	IIIm	3750

Eleven additional babies born to these families but adopted early in life were also excluded because of lack of information.

Inquiries were made of the Oxford Record Linkage System for all postneonatal deaths occurring in the group of 332 children. In addition a thorough search was made through the Park Hospital records for any

birth details of the children who died. Three babies were below 2500 g at birth.

Table II gives the details of the deaths and evidence of abuse in the family. All the deaths occurred to babies in the first six months of life. All but one baby (case 9) died at home, and all were referred to a coroner or procurator fiscal. Only one of the dead babies (case 4) suffered from recognised congenital abnormality. Two deaths (cases 6 and 8) were recorded as "cot deaths" on the death certificate, and in a further two cases (2 and 5) after examination of the necropsy reports death was thought not to be adequately explained.

For six of the nine babies who died we found no recorded evidence of abuse during that child's life. In all but two cases (1 and 7) the family was referred to Park Hospital a long time (from one to eight years) after the death, after an episode of abuse or neglect of a sibling.

In case 1 it was thought that the parents were abusing the brother as they held him responsible for his sister's death. In case 7 neglect of the twin brothers seemed to follow their sister's death.

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TABLE II—Details of death and evidence of abuse

Case No	Age at death	Place of death	Explanation of death	Recognised abuse in family	
				Dead child	Siblings
1	2 mths	Home	Death certificate: "(1) (a) Suffocation. Accidental death. Toddler brother sat on cushion on baby's head"	None	Older brother abused after death
2	2 mths	Home	Death certificate: "Cardiac arrest as a result of vagal inhibition due to aspiration of vomit"	None	Child born 3 years later abused. Two others, born 1 and 4 years later, neglected
3	3 mths	Home (hostel)	Necropsy report: "Acute adrenal failure due to adrenal hypoplasia"	Mother claims to have smothered him	Two sisters born 2 and 4 years later repeatedly abused
4	6 mths	Home	Death certificate: "(1) (a) Bronchopneumonia. (2) Smith-Lemli-Opitz syndrome"	Serious injury inflicted at 1 month	Sister born 7 years later poisoned with amitriptylene (Tryptizol)
5	3 mths	Home	Necropsy report: "(1) (a) Septicaemia"	None	Repeated abuse and neglect of all siblings from 10 years before index baby's birth to 8 years afterwards
6	6 wks	Home	Necropsy report: "Baby died from sudden unexpected, unexplained death in infancy"	None	Older brother seriously abused before index baby's birth. Twin sister abused a few days after death. Further repeated abuse to both these siblings
7	5 mths	Home	Necropsy report: "Fibroelastosis and chest infection"	None	Child born 12 years earlier abused at 2. Neglect and emotional deprivation of older twin brothers after index baby's birth
8	2 mths	Home (residential nursery)	Necropsy report: "Sudden unexpected death in infancy" (cot death)	None	2 older children previously neglected and taken into care. Sister born 1 year later seriously abused
9	2 mths	Hospital	Necropsy report: "Facial contusions and bilateral subdural haemorrhage"	Coroner recorded open verdict	Brother born 2 years later seriously abused

Discussion

There is a higher than expected postneonatal death rate in this sample of families of abused children, even if we take into account the prevalence of young, multiparous women from the lower social classes and the high rate of illegitimate births. The reasons for the high rate are probably complex but, on the strength of clinical knowledge of abusing families, the following suggestions are made. Obviously, children from such families may die as a result of abuse—for instance, probably case 9. Although there are no examples in this study, abused children are also at risk of death from later complications caused by the original injuries.

Possibly babies from abusing families fail to thrive, which makes them more vulnerable to death in the first year of life. For example, one infant (case 5) weighed 3500 g at birth and only 4000 g when he died three months later. Possibly some babies in these families have warning symptoms of illness that are not recognised before death occurs, as has been suggested by other studies of deaths in this age group.^{12 13} If we consider the characteristics of the parents who abuse—often young, lacking experience or skills in parenthood, often living in chaos and preoccupied with a multitude of problems—then it is not surprising that they might have difficulty in recognising and responding to symptoms of illness in their baby. Indeed, the failure to react appropriately to symptoms may result from bonding failure. If the parents have not bonded to the child they are not engrossed in his every movement and do not understand his signals, nor do they recognise the significance of the baby's behavioural changes. Similar parental attitudes towards babies who later died unexpectedly have occasionally been observed by others.^{14 15} Poor mothering may also have an effect on even very young babies, who then tend to be apathetic and undemanding and therefore may be more susceptible to death in infancy.

In seven of these nine families more than one child suffered from abuse and neglect, which is a much higher proportion than we would expect (20%) from earlier experience.¹⁶ The families were well known to us and belonged to that highly problematic group where many of the children end up in long-term care (at least half of the surviving children born to these nine families). Bonding problems probably already existed in most of these families before death occurred. This emphasises the need for those who are helping families judged at risk of bonding failure to be alert not only to overt evidence of abuse but also to signs of growth failure and untreated illness.

The unexpected loss of a very young baby, however, is such a

disturbing experience that it could well have a detrimental effect on the parents' ability to look after surviving siblings or children born later. Lewis has described how this phenomenon may follow bereavement in pregnancy¹⁷ and Lindsay, in a paper on loss in relation to child abuse presented at the Second International Congress on Child Abuse and Neglect in September 1978, has observed that "suffering loss" is a "feature of those who abuse and neglect their children." If this is the case then there is all the more reason for careful and effective counselling to be carried out with parents whose baby dies unexpectedly.¹⁸

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When do pregnant women attend for antenatal care?

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Summary and conclusions

The case records of a representative sample of 313 women from four health districts in the North-east Thames Health Region were reviewed to determine the stage of pregnancy at which they contact antenatal services. Patients seeking care (when a blood specimen was obtained) after 20 weeks' gestation ranged from 6% to 26%. These women were more likely to be of higher parity and immigrants. Appreciable delays in obtaining an early blood specimen, or in referral to a hospital antenatal clinic, were due to delay by hospitals in giving appointments and, to a lesser extent, to slowness of general practitioners in referring patients or taking blood.

Introduction

The development of prenatal diagnosis for certain conditions, in particular neural tube defects and Down's syndrome, has made abortion possible when the diagnosis is made early in pregnancy. The availability of such screening is becoming more general¹; to be effective women need to contact antenatal services preferably by 16 weeks' gestation, and certainly by 20 weeks.² This would be particularly important if the time limit for abortion in the 1967 Act was greatly reduced, although any change now seems unlikely in the near future.³⁻⁵

In May 1979 the North-east Thames Regional Health Authority agreed to fund a prenatal screening programme for Down's syndrome, neural tube defects, and thalassaemia, at an approximate annual recurrent cost of £310 000.⁶ There are, however, no routine data on time of first contact of pregnant women with antenatal services. Studies carried out elsewhere have shown that around 60% of women attend for antenatal care by 16 weeks' gestation but that 25% have not attended for antenatal care by 20 weeks.⁷⁻¹⁰ We decided to carry out a survey in the North-east Thames Region to determine the proportions of women contacting the services at various times and the reasons for the delay for those attending late.

Methods

We studied samples of the births in four districts representing different parts of the region: Tower Hamlets, an inner city district; East Roding, artisan-suburban; Enfield, commuter-suburban; and Chelmsford, a county town and rural district (fig 1). All the births

FIG 1—Districts and areas in the North-east Thames Health Region from which samples of births taken.

in two one-week periods (22 February-1 March and 23-30 August 1978) were included. We obtained copies of birth notifications, which give the baby's name and place of birth. The mother's hospital case notes were traced by obtaining her record number from either the consultant or the general practitioner maternity ward where she had been delivered, the hospital master patient index, or a computer printout at the London Hospital. We extracted the following data from the notes: type of antenatal care (hospital, general practitioner, or shared); date of last menstrual period; date of general practitioner's referral letter; date of hospital booking visit; date of first antenatal attendance at hospital; date when first blood sample was taken; "ethnic group"; and husband's or partner's occupation, or if she was single the woman's. The date of the last menstrual period was used as the basis for estimating gestational age. When the date of the last menstrual period was uncertain, or there was a discrepancy with fundal height, the result of ultrasound examination, if carried out, was used. When gestational age could not be estimated by these means it was calculated from the date of birth and estimated maturity.

The proportion of case notes traced was: Tower Hamlets, 90% (70 notes); East Roding, 90% (65); Enfield, 72% (67); and Chelmsford 79% (111). The main reasons for failure to retrieve notes was that many were in transit between the maternity units and the district central records office (Chelmsford), and a five-month backlog of

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