

Causation

Young maternal age was associated with increased risk of postneonatal death in full term, healthy infants

Phipps MG, Blume JD, DeMonner SM. *Young maternal age associated with increased risk of postneonatal death. Obstet Gynecol* 2002;100:481–6.

QUESTION: Are full term, healthy infants born to young mothers at increased risk of postneonatal death compared with infants born to adult (older) mothers?

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Design

Cohort study with ≤ 365 days of follow up.

Setting

United States.

Participants

1 830 350 mothers who were 12–29 years of age and delivered healthy (≥ 37 wks gestation, birth weight ≥ 2500 g), singleton infants in the US in 1996 and 1997, who survived the first 28 days after birth. Data sets were racially stratified as non-Hispanic white (1 246 863), non-Hispanic black (303 699), and Mexican-American (279 788). Multiple births, higher order births, and infants with congenital defects were excluded.

Assessment of risk factors

Maternal age ≤ 15 years was the main risk factor. Other potential risk factors were maternal race or ethnicity, adequacy of prenatal care utilisation, self reported tobacco use, self reported alcohol use, marital status, and presence of father's name on the birth certificate. Demographic information was extracted from birth certificate records.

Main outcome measure

Postneonatal infant death between 28 and 365 days after birth. Data were combined from the 1996 and 1997 US Linked Birth/Infant Death data sets.

Main results

2516 postneonatal infant deaths occurred. For infants born to mothers aged ≤ 15 years, the postneonatal mortality rate was 3.2 per 1000 infants who survived the neonatal period compared with 0.8 per 1000 for those born to mothers aged 23–29 years. Mortality rates, stratified for ethnicity, were highest in mothers aged ≤ 15 years. Data were adjusted for maternal race or ethnicity, prenatal care utilisation, and marital status and showed 3 times greater postneonatal mortality risk associated with young mothers (age ≤ 15 y) compared with adult mothers (age 23–29 y) (table).

Conclusion

Healthy, full term infants born to mothers ≤ 15 years of age were at greater risk of death within their first year compared with those born to older mothers (23–29 y).

Maternal age associated odd ratios (ORs) for postneonatal death

Maternal age (y)	Crude OR (95% CI)	Adjusted* OR (CI)
≤ 15	4.1 (3.4 to 4.8)	3.0 (2.5 to 3.6)
16–17	3.1 (2.8 to 3.5)	2.4 (2.1 to 2.7)
18–19	2.5 (2.3 to 2.8)	2.0 (1.8 to 2.3)
20–22	1.8 (1.6 to 2.0)	1.5 (1.4 to 1.7)
23–29 (referent group)	1.0	1.0

*Adjusted for maternal race or ethnicity, adequacy of prenatal care utilisation, and marital status.

COMMENTARY

The study by Phipps *et al* is unique because it examines the risk of postneonatal death in full term healthy infants during the first year after birth whereas previous research has focused predominantly on death during the intrauterine and neonatal periods. The study population consisted of American born infants, and analyses were adjusted for maternal race (non-Hispanic white, non-Hispanic black, and Mexican-American).

Demographic and covariate data were derived from vital statistics. Although it is only through the use of vital statistics that data on almost 2 million mothers can be accessed and analysed, there are inherent limitations in the quality and quantity of data and associated interpretations. For example, marital status was considered “the best proxy measure for social support using vital statistic data”. Marital status cannot infer social support, just as “not married” does not equate to social isolation.

The authors examined the underlying causes of death. They included sudden infant death syndrome (SIDS) in the category of “possible neglect and abuse”. The inclusion of SIDS in this category is problematic as current thinking focuses on physiological rather than social causes for these deaths. Nevertheless, babies of mothers ≤ 15 years of age had a 3–4 fold higher risk of postneonatal death than infants born to older mothers, and this increased risk was constant across racial and ethnic groups.

These findings alert nurse practitioners, public health nurses, family physicians, and paediatricians to the need for support for young adolescent mothers beyond the prenatal and perinatal period. Developing and evaluating targeted postnatal support services for healthy infants born to adolescent mothers could have dramatic effects on the postneonatal mortality rate. More research is needed to identify the specific risk factors that put infants born to early adolescent mothers at greater risk of postneonatal death and to inform the formulation of related health policy and the development and delivery of prevention programmes.

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