Paedriatrics

Preterm birth associated with shorter life span

Individuals born even slightly prematurely have an increased risk of early death in adult life, a Nordic population-based study has found.

The investigators reviewed more than six million birth records from Norway, Sweden, Finland and Denmark between 1967 and 2002. A total of 339,403 preterm infants (5.4% of births) were identified and of these 48.7% were female. Individuals were followed from the age of 15 years until 2017.

Information on birth year, sex, birthweight, congenital malformations, maternal age, and parity was obtained from the national registries. Causes and dates of death were recorded from the respective death registries and were classified according to ICD code.

All-cause mortality and the following primary underlying causes of death were investigated: cardiovascular disease (CVD), divided into non cerebrovascular CVD and stroke; cancer; diabetes; chronic lung disease; and all non-communicable disease (i.e. CVD, diabetes, chronic lung disease, and cancer together).

The infants were stratified into:

- Moderately preterm or earlier (23-33 weeks)
- Late preterm (34-36 weeks)
- Early term (37-38 weeks)
- Full term (39-41 weeks)
- Post term (42-44 weeks)

The relative risk of mortality in each category of gestational age was compared with children born in weeks 39 to 41 i.e. at full term. The hazard ratios (HR) were adjusted for potential confounding by maternal age, parity, birth cohort, sex, and birthweight SD scores.

A higher proportion of those born at early gestations died before age 15. During follow-up, 46,936 (0.7%) individuals died with a median age at death of 28.8 (range 15.0-50.9) years; 22.2% of deaths were from non-communicable diseases, 6.2% from CVD.

Compared with full-term birth, the adjusted HRs for all-cause mortality were increased as follows:

- HR 1.44 (95% CI: 1.34-1.55) for moderate preterm birth and earlier
- HR 1.23 (95% CI: 1.18-1.29) for late preterm birth
- HR 1.12 (95% CI: 1.09-1.15) for early term birth

While all-cause mortality was higher in men than women, the association between gestational age at birth and all-cause mortality was stronger in women.

Preterm birth was associated with around a doubling of risk of death, across all countries, from:

- CVD HR 1.89 (95% CI: 1.45-2.47)
- Diabetes HR 1.98 (95% CI: 1.44-2.73)
- Chronic lung disease HR 2.28 (95% CI: 1.36-3.82)

There was an increase in deaths from cancer in moderately preterm and earlier birth categories but the numbers were too low for analysis. There was no association between gestational age and death from stroke.

The study showed a clear association between death due to a range of non-communicable diseases for individuals born prematurely. The age range studied was limited but extended well beyond previous studies.

The study authors conclude: 'The current findings add evidence of higher risk of young adult death from all causes and from chronic diseases in individuals born before full gestation. Importantly, the altered risk included the late preterm and early term groups, who were born close to ideal birth timing.'

'This may have implications not only for tailoring chronic disease risk assessments in individuals born before full term but also for the interpretation of the rich literature regarding the association between birthweight and mortality, in which gestational age has not been taken into account,' they add.

With an increased risk for a number of non-communicable diseases in those born preterm, I feel GPs should be stressing the need for appropriate lifestyle measures in these individuals, as well as considering treatment with drugs such as statins at lower thresholds.

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Risnes K, Funck Bilsteen J, Brown P et al. Mortality among young adults born preterm and early term in 4 Nordic nations. *JAMA Network Open* 2021;4(1):e2032779