

Risk of Infant Mortality among Preterm Infants at Differing Gestational Ages

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Background: Preterm infants born very prematurely (gestational age 24 to 27 weeks) have higher rates of mortality and morbidities than those born at later gestational ages (33 to 36 weeks). This study compared the risk of mortality among preterm infants by infant race and by time of death within three gestational age groups.

Methods: We used a database of Washington State linked birth and death certificates from 1984 to 2009 to identify infants who had died within the first year of life. Randomly selected controls who survived the first year of life were frequency matched on gestational age and year of birth in a 2:1 ratio (case-control study). All subjects were stratified by gestational age at birth into three groups: 24 to 27 weeks, 28 to 32 weeks, and 33 to 36 weeks. The likelihood of mortality within these age groups was evaluated relative to race and ethnicity. A secondary analysis evaluated the risk of mortality within gestational age groups by the timing of death (neonatal vs. post-neonatal) and by infant race and ethnicity.

Results: This study found a decreased likelihood of mortality among black infants compared with white infants in the 24 to 27 weeks gestational age group (OR 0.71, 95% CI 0.57, 0.88) and 28 to 32 weeks (OR 0.7, 95% CI 0.53, 0.92). Compared to white infants, black infants in the 24 to 27 week gestational age group were more likely to die in the post-neonatal period than the neonatal period (OR 0.41, 95% CI 0.27, 0.61). In the 33 to 36 week gestational age group, Hispanic and Asian/Pacific Islander infants had a decreased likelihood for mortality compared with white infants (OR 0.74, 95% CI 0.58, 0.94; and OR 0.66, 95% CI 0.50, 0.87, respectively). Conversely, compared to white infants, American Indian/Alaska Native infants had an increased likelihood of mortality (OR 1.37, 95% CI 1.02, 1.84).

Conclusions: The results of this study suggest that interventions to prevent mortality among preterm infants must consider both the gestational age and the race and ethnicity of the infant. Infants at higher risk of postnatal mortality may need continued support following hospital discharge.

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