Study examines neurodevelopmental outcomes for children born extremely preterm

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Fredrik Serenius, M.D., Ph.D., of Uppsala University, Uppsala, Sweden, and colleagues conducted a study to assess neurological and developmental outcome in extremely preterm (less than 27 gestational weeks) children at 2.5 years.

"A proactive approach to resuscitation and intensive care of extremely preterm infants has increased survival and lowered the gestational age of viability. There are concerns that increased survival may come at the cost of later neurodevelopmental disability among survivors. Approximately 25 percent of extremely preterm infants born in the 1990s had a major disability at preschool age, such as impaired mental development, cerebral palsy, blindness, or deafness. More recent studies report decreasing, unchanged, or increasing rates of neurodevelopmental disability at preschool age compared with previous decades," according to background information in the article.

The study included extremely preterm infants born in Sweden between 2004 and 2007. Of 707 live-born infants, 491 (69 percent) survived to 2.5 years. Survivors were assessed and compared with control infants who were born at term and matched by sex, ethnicity, and municipality. Assessments ended in February 2010 and comparison estimates were adjusted for demographic differences. Cognitive, language, and motor development were assessed. Clinical examination and parental questionnaires were used for diagnosis of cerebral palsy and visual and

hearing impairments. Assessments were made by week of gestational age.

At a median (midpoint) age of 30.5 months, 456 of 491 (94 percent) extremely preterm children were evaluated (41 by chart review only). The researchers found that overall, 42 percent of extremely preterm children had no disability (compared with 78 percent of control participants), 31 percent had mild disability, 16 percent had moderate disability, and 11 percent had severe disability. There was an increase in moderate or severe disabilities with decreasing gestational age. Also, the difference in overall outcome between preterm boys and girls was not statistically significant.

"Improved survival did not translate into increasing disability rates, and we like others believe that the neurodevelopmental outcome for extremely preterm children born in the 2000s will be better than for those born in the 1990s. Nevertheless, the impact of prematurity on neurodevelopmental outcome was large, which calls for further improvements in neonatal care, such as better control of infection and postnatal nutrition," the authors write.

"These results are relevant for clinicians counseling families facing extremely preterm birth."

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