

Likelihood of survival may be improving for extremely preterm infants

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Infants born extremely preterm are surviving at a high rate, with about 70 percent of infants born alive between 22 and 26 weeks of gestation in Sweden surviving at least one year, with high rates of interventions being used to improve survival, according to a study in the June 3 issue of *JAMA*, a theme issue on child and adolescent health.

Karel Maršál, M.D., Ph.D., of Lund University Hospital, Lund, Sweden, presented the findings of the study at a *JAMA* media briefing in New York.

The rate of preterm births is increasing worldwide and advances in perinatal (relating to the period shortly before and after birth) medicine have increased survival so that neonatal (the newborn period, usually the first four weeks after birth) intensive care can today be life saving even for the most [preterm infants](#). But the evidence for improved outcomes among extremely preterm infants, which is important for decision making before, during, and after birth, has been questioned, with there being a need for up-to-date information on infant survival. "... misconceptions regarding outcomes may result in suboptimal perinatal care because chances for survival are underestimated," the authors write.

Dr. Maršál and colleagues conducted a study to evaluate the short- and long-term outcomes of infants born before 27 gestational weeks in Sweden during 2004-2007. During the study period, 305,318 infants were born in Sweden; of these, 1,011 were extremely preterm infants (incidence, 3.3/1000 infants) born before 27 gestational weeks in 904

deliveries to 887 mothers, with 102 multiple births. Of the infants in the study, 707 were live-born and 304 stillborn.

Overall survival at 1 year of age for infants born alive was 70 percent: for those born at 22 weeks it was 9.8 percent; at 23 weeks 53 percent; at 24 weeks 67 percent; at 25 weeks 82 percent; and at 26 weeks 85 percent. Of the 104 deaths occurring at least 24 hours after admission to a neonatal intensive care unit, 42 (40 percent) involved a decision to withdraw intensive care due to anticipated poor long-term prognosis. Among 1-year survivors, 45 percent had no major neonatal illness.

"The most important finding in this study is the high survival of extremely preterm infants born alive. Survival rates at hospital discharge in recent population-based studies have been reported as 0 percent at 22 weeks, 6 percent to 26 percent at 23 weeks, and 29 percent to 55 percent at 24 weeks," the authors write.

The overall perinatal death rate was 45 percent, ranging from 93 percent at 22 gestational weeks to 24 percent at 26 weeks. Of live-born infants, 152 (22 percent) died during the early neonatal period (0-6 days) including 58 (8.2 percent) who died in the delivery room; and 35 (5 percent) who died during the late neonatal period (7-27 days). Altogether, 210 live-born infants (30 percent) died before the age of 1 year. The proportion of stillbirths, delivery room deaths, neonatal deaths, and infant deaths decreased with gestational age. For infants who survived 28 days, no significant association between gestational age at birth and 1-year survival could be detected.

Antenatal (occurring before birth) treatment with tocolytics (a drug that delays or halts labor), corticosteroids, or both; surfactant (a fluid that is produced shortly before birth and prevents the lung from filling with water) treatment within 2 hours after birth; and birth at a level III hospital were significantly associated with lower risk of infant death.

"In summary, overall 1-year survival was 70 percent in extremely preterm infants born alive at 22 to 26 weeks of gestation in Sweden during 2004-2007. Proactive perinatal management is likely to have contributed to this outcome. Therefore, non-initiation or withdrawal of [intensive care](#) for extremely preterm infants cannot be based solely on a notion of unlikely [survival](#). This is not to suggest that all extremely preterm live-born infants should be kept alive at any cost. The prognosis, based on an individual assessment, including early and subsequent morbidities, and parental desires are still the most important factors in decision making," the authors conclude.

More information: *JAMA*. 2009;301[21]:2225-2233.

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