

## Outcome at the Extreme of Viability: A Single-Centre Experience

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**Abstract :** Background: The objective is to examine the survival and outcome of infants born under 26 weeks gestation in an Irish tertiary maternity hospital from 2007-2016 and to describe the survival and neurodevelopmental outcomes of these extremely preterm infants. Method: The population is 132 infants born at 23, 24, and 25 weeks in Cork University Maternity Hospital from 2007 to 2016. Ethical approval was granted by the Cork Clinical Research Ethics Committee. Patient details were obtained from the Vermont Oxford and Badger Networks. Survival rates and Bayley scores were calculated to assess neurodevelopmental outcomes. Statistical analysis with SPSS included frequencies, distributions, and comparisons between data from 2007-2011 and 2012-2016. Results: Overall survival rate was 63%. Of the surviving babies, 61% had Bayley scores calculated. Survival stood at 39% for delivery at 23 weeks, 50% at 24 weeks, and 83% at 25 weeks. The 2012 to 2016 cohort has shown further increases in survival, with 50% of babies at 23 weeks, 58% at 24 weeks, and 89% at 25 weeks. Corresponding figures for 2007-2011 are 20%, 39%, and 75%. Gestational age and incidence of periventricular leukomalacia were statistically significant, with a p-value of 0.022. Gestational age and delivery room deaths had a p-value of 0.025, as did gestational age and birth weight. A comparison of the two cohorts (2007-2011 and 2012-2016) with the administration of antenatal steroids showed a statistically significant p-value of 0.044. Conclusion: There is less morbidity and mortality in infants born at 25 than at 23 or 24 weeks. Survival of extremely premature infants has increased significantly over the past ten years. Survival rates with normal neurodevelopmental outcomes are comparable with international standards and reflect positive changes in attitude and practices in neonatal intensive care. This study will inform parents about the potential outcomes of extreme prematurity and policy regarding the management of extreme prematurity.

**Keywords :** extreme of viability, neurodevelopmental outcome, periventricular leukomalacia, prematurity

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