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Neurodevelopmental outcomes of extremely low and very low birth weight premature infants and family-centered Neonatal Abstinence Syndrome treatment models

Exremely preterm infants are at high risk of morbidity and death. In the United States in 2016, approximately twenty-eight percent of all extremely preterm infants died within the first year of life. Among infants born at 22, 23, and 24 weeks gestation, survival to one year of age was 6%, 27%, and 60%, respectively and increased further for each 1-week increase in gestational age, from 78% at 25 weeks to 94% at 28 weeks. Major neonatal morbidities are common for survivors of preterm births including: sepsis, periventricular leukomalacia, intraventricular hemorrhage, bronchopulmonary dysplasia, necrotizing enterocolitis, retinopathy of prematurity, chronic lung disease, cerebral palsy, severe visual impairment and hearing impairment. Although survival rates for extremely low birth weight premature infants have improved, rates of neonatal morbidity remain high.

Opioid use in pregnancy has escalated dramatically in recent years, echoing the epidemic observed in the general population in the United States. As a result, a significant increase in the number of babies born with neonatal abstinence syndrome (NAS) has also been observed. NAS is a constellation of neurologic, gastrointestinal, and musculoskeletal disturbances in the newborn associated with opioid withdrawal from intrauterine exposure to an opioid. These infants require specialized care


that typically results in longer and high cost hospital stays. Non-pharmacologic interventions are the recommended initial treatment for NAS. However, pharmacologic treatment such as morphine continues to be a mainstay in the management of NAS.

This presentation will provide the results from an on-going study of the developmental outcomes of extremely premature infants actively participating in a Neonatal Developmental Follow-Up Clinic and on a new Family-Centered Neonatal Abstinence Syndrome Treatment Model.

Speaker Biography

Eileen R McGrath is an assistant professor of pediatrics and public health; co-director and training director of the University of Arizona Leadership Education in Neurodevelopmental and Related Disabilities Training Program and director of the Neonatal Developmental Follow-up Clinic at the University of Arizona in Tucson, Arizona, USA. She has extensive experience teaching university students in early childhood special education, training early intervention practitioners, and teaching premature infants and children with low incidence neurodevelopmental disabilities. She has conducted research on the effects of systems change on the field (early childhood special education), service recipients, providers, and on the effects of implementing family-centered services on families, early intervention service coordinators, practitioners and the service delivery systems. Her current research focuses on the predictors of developmental outcomes of high-risk and developmentally delayed infants; the impact of prematurity on a diagnosis of autism or other neurodevelopmental disorder; and on a Family-Centered Neonatal Abstinence Syndrome Treatment Model.

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