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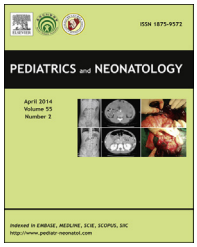

EDITORIAL

Long-term Follow-up of Very-low-birth-weight Infants in Taiwan

In Taiwan, the introduction of neonatal intensive care has resulted in substantial improvements in outcomes for very-low-birth-weight (VLBW) infants weighing less than 1500 g during the past two decades. The survival rate was more than 95% among those infants weighing from 1000 g to 1500 g who were cared in the medical centers in Taiwan. However, the mortality rate among those extremely low-birth-weight infants weighing less than 1000 g remains to be improved. In addition, the overall morbidities and the long-term follow-up for VLBW infants are also important issues.[1]

In this issue of *Pediatrics and Neonatology*, Wang et al[2] had enrolled VLBW preterm infants and term infants for assessment of growth and cognitive performance from birth to 5 years of age to compare the growth and the effect of growth on cognitive performance. The study by Wang et al[2] was based on a multicenter follow-up program of VLBW preterm infants sponsored by the Taiwan Premature Baby Foundation and the Society of Neonatology, Taiwan. They concluded that the growth of VLBW infants was lower than those of full-term infants through 5 years of age and that the cognitive performance was also lower than the control group. An association between slower growth and decreased cognitive ability was also reported.

There are other issues of concern in the assessment of outcomes among VLBW infants, such as the issue of small for gestational age (SGA) infants weighing less than 10th percentile. Guellec et al[3] followed up 2846 live births between 24 weeks and 32 weeks of gestation to determine whether growth restriction at birth is associated with neonatal mortality and cerebral palsy and cognitive performance at 5 years of age and school performance at 8 years of age. They found that among the children born between 24 weeks and 28 weeks of gestation, the mortality rate increased as the birth weight percentile decreased and that it was highest in SGA infants. Birth weight was not significantly associated with neurological and cognitive outcomes at the age of 5 years or any school performance outcomes at 8 years. Among those infants born between 29 weeks and 32 weeks of gestation, SGA accompanied a higher mortality and mild cognitive and school difficulties compared with those infants with birth weight $\geq$20th percentile. Therefore, the issue of SGA should be considered in the assessment of outcomes among the preterm infants. The duration of long-term follow-up is another important issue. Hack et al[4] compared a cohort of 242 survivors among VLBW infants with 233 controls with normal birth weight to assess the level of education, cognitive and academic achievement, and rates of chronic illness and risk-taking behavior at 20 years of age. They concluded that educational disadvantage associated with VLBW infants persists into early adulthood.

In response to the high rate of poor neurodevelopment outcomes in VLBW infants and their persistence throughout childhood, various early intervention programs have been developed. Van Hus et al[5] performed a randomized controlled trial to compare 86 VLBW infants after discharge who received the Infant Behavior Assessment and Intervention Program (IBAIP) intervention until 6 months corrected age and 90 VLBW infants who received standard care. They reported that after the IBAIP intervention, the performance intelligence quotient, ball skills, and visual–motor integration were improved at 5.5 years corrected age among VLBW infants.

In Taiwan, the proportion of intercultural couples has increased from 15.7% in 1998 to 32.1% in 2003. Despite lower parental education, advancing paternal age, and spatial distribution disparity, babies born to married immigrant mothers had favorable neonatal outcomes including low birth weight and prematurity.[6] Follow-up study is thus essential to assess the extent to which observed intercultural differences will impact the health among those of VLBW infants in Taiwan.

The hospital cost of neonatal intensive care in relation to birth weight or gestational age is another issue of concern. Neonatal intensive care cost for the very small babies remains one of the most expensive types of hospitalization in Taiwan.[7] Despite the fact that most medical expenses in neonatal intensive care have been covered by the National Health Insurance Program in Taiwan since its launch in 1995, families are still confronted by the costly management of the long-term medical and educational problems in their extremely premature infants. In addition, they may experience long-lasting strain when their child develops severe disabilities.

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In conclusion, Wang et al[2] conducted the first study in Taiwan concerning outcomes and cognitive function of VLBW infants at the age of 5 years. Further long-term follow-up is suggested in the future, and an early intervention program to improve the poorer neurodevelopment is highly recommended.

Wu-Shiun Hsieh
Department of Pediatrics, National Taiwan University Hospital, National Taiwan University College of Medicine, No. 7, Chung Shan South Road, Taipei, Taiwan

E-mail address: hsiehws@ntu.edu.tw

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