

Predictive Ability of Early Neuromotor Examinations on Walking Attainment in Very-Low-Birth-Weight Infants at 18 Months Corrected Age

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Background and Purposes: The Neonatal Neurobehavioral Examination- Chinese version (NNE-C) and the Alberta Infant Motor Scale (AIMS) have been found clinically feasible, reliable, and responsive when used to examine the early neuromotor development of preterm infants. However, the data concerning their predictive ability on neurodevelopmental outcome were limited. The purpose of this study was therefore to examine the predictability of these neuromotor examinations on walking attainment in very-low-birth-weight (VLBW) infants at 18 months corrected age, and to determine if adding perinatal and socio-demographic information enhances the predictability. **Methods:** One hundred and thirty VLBW infants and 60 full-term infants were administered the NNE-C at term age and the AIMS at 4, 6, 9, and 12 months corrected age, and were followed for age of walking attainment until 36 months corrected age. Perinatal and socio-demographic data were collected through review of medical records. **Results:** All full-term infants attained walking ability by 18 months corrected age; while 17 (13.1%) VLBW infants failed to do so. The predictive accuracy of the neuromotor examinations at term, 4, 6, 9, and 12 months on walking attainment at 18 months corrected age in the VLBW infants was 77.7%, 81.2%, 84.8%, 96.4%, and 97.5% respectively. Adding perinatal data (i.e. gestational age, intra-ventricular hemorrhage, chronic lung disease, and retinopathy of prematurity) to the neuromotor scores at earlier ages in the model significantly increased the predictive accuracy to 83.4%-95.1%. **Conclusions:** Neuromotor examination can reasonably predict the walking attainment at 18 months corrected age in preterm infants after 9 months. Addition of perinatal information in the model improves its predictive ability in the earlier months of life. (FJPT 2004;29(1):9-20)

Key Words: Perinatal factors, Neuromotor test, Predictive validity, Prematurity, Walking

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