P-22

Gait Development of Premature Infants

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OBJECTIVE

To examine the overall gait development in toddlers who were born prematurely and to investigate associated factors with their gait development.

METHDOS

The total number of subjects was 409 infants, and the sample size was 358 excluding those with cerebral palsy and genetic abnormalities. They were stratified into three groups according to gestational age (extremely preterm, very preterm, moderate to late preterm) and birth weight (extremely low birth weight, very low birth weight, and the others)(Fig 1). The age of gait onset and the age of stable toddler gait were investigated for premature infants. Cormorbid factors in premature infants that affect gait development were also analyzed.

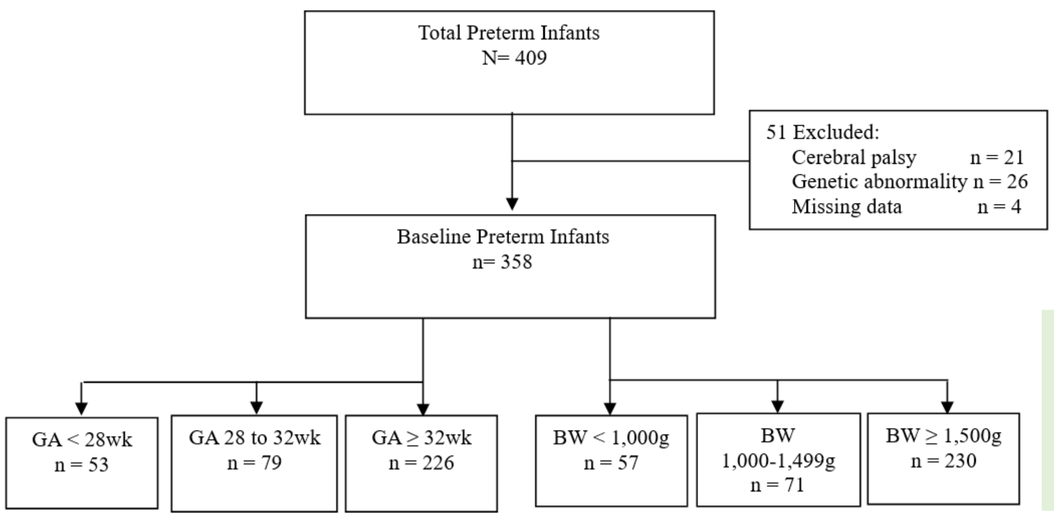

Figure 1. Flowchart of sample inclusion and exclusion criteria
Abbreviations: N, number of infants; n, number of sample size; GA, gestational age; wk, weeks; BW, birth weight; g, grams.

RESULTS

The mean age of gait onset was 12.93 ± 2.34 months, and stable toddler gait was achieved at 14.95 ± 3.14 months on average (Fig. 2, 3). In multiple regression analyses, gestational age and patent ductus arteriosus remained significant predictors of both gait onset and stable toddler gait, while twin status was a significant factor for stable toddler gait.

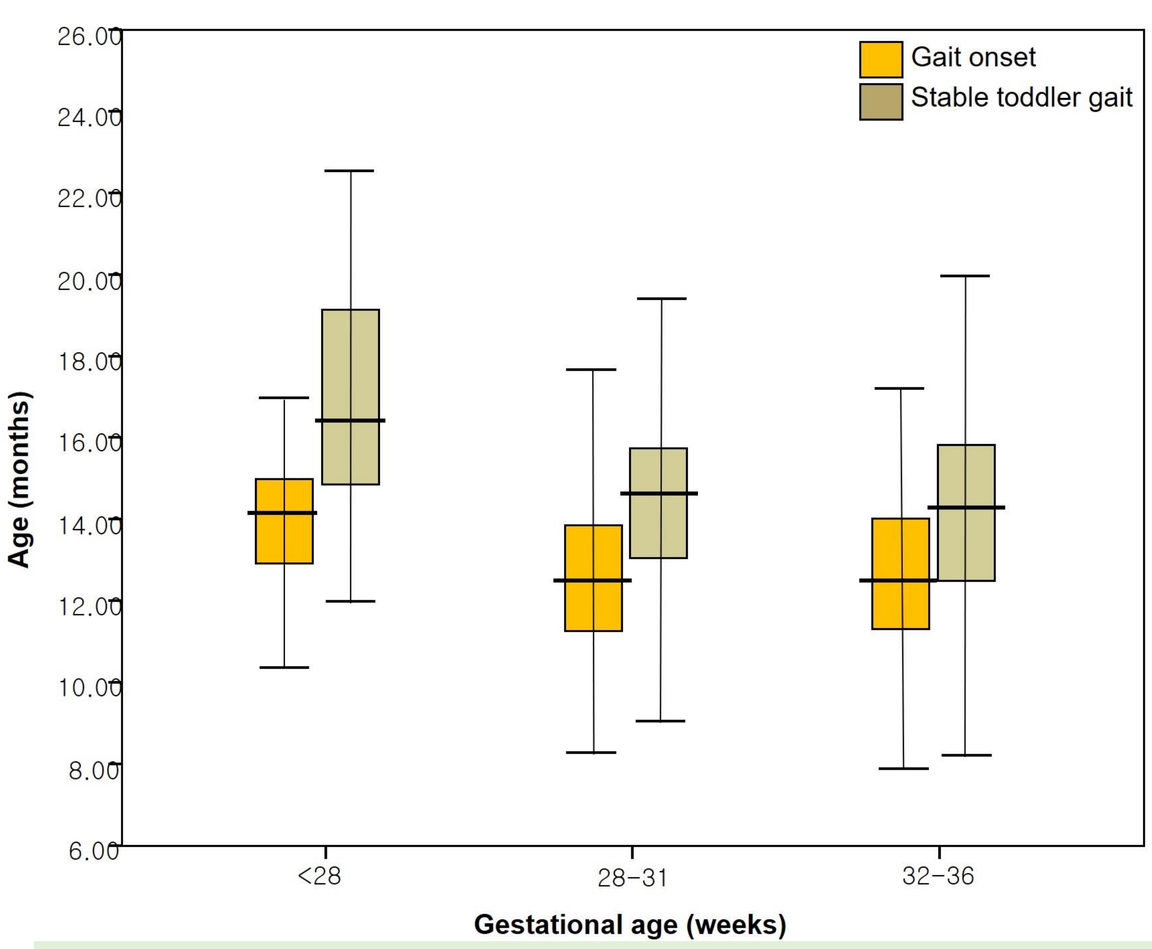

Figure 2. The age of gait onset and stable toddler gait according to gestational age. Box plots represent first, median, and third \quartile values.

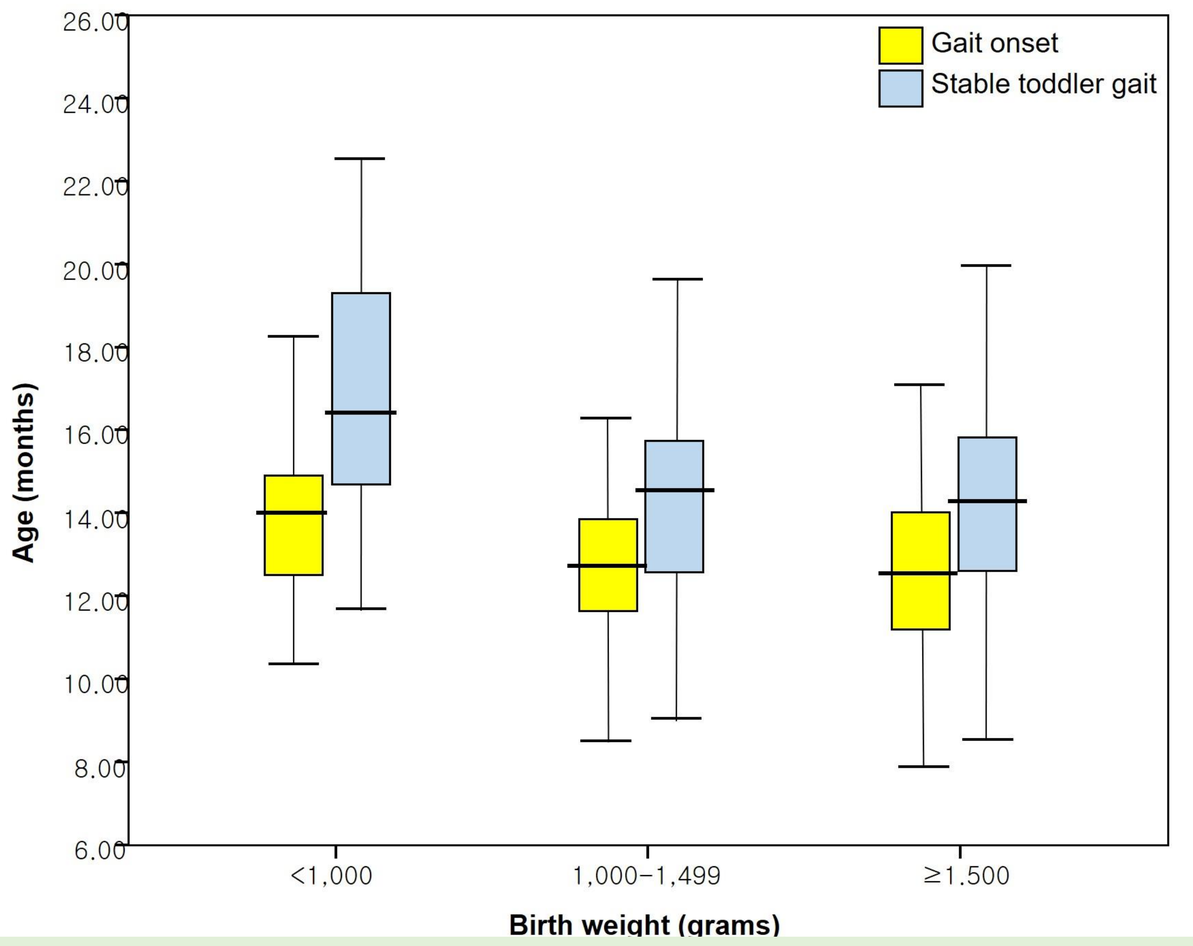

Figure 3. The age of gait onset and stable toddler gait according to birth weight. Box plots represent first, median, and third quartile values.

CONCLUSION

This study demonstrated that extremely preterm infants exhibited significant delays in both gait onset and stable toddler gait compared to very preterm and moderate-to-late preterm infants. Infants with birth weight <1,000 g showed significantly delayed gait milestones compared to those with birth weight ≥1,000 g. Gestational age, patent ductus arteriosus, twin status were significant predictors of both gait onset and stable toddler gait, while twin status was an additional factor influencing stable toddler gait.