Cognitive function affects daily life mobility of children with bilateral spastic cerebral palsy due to periventricular leukomalacia

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BACKGROUND / OBJECTIVES
Periventricular leukomalacia (PVL), the most common etiology of cerebral palsy (CP), is a major cause of spasticity and cognitive impairment in children. Motor function, however, may be influenced by cognitive function as well as other factors. The aim of this study was to investigate the extent of PVL, GMFCS levels in early childhood, and cognitive function on the daily life mobility at elementary school.

RESULTS
1. Primary analysis
Sex, gestational age, and birth weight were significantly different among the three groups. Children with severe PVL showed skewed distribution of cognitive quotient (DQ) with Kyoto scale of psychological development.

2. Secondary analysis
Motor capacity, cognitive function, and brain injury were evaluated among the three groups assessed by medical records. We compared overall outcomes including daily life mobility at school among the favorable, intermediate, and severe groups. We found that the cognitive function affects daily life mobility within the favorable and the intermediate group respectively.

DISCUSSION
Relationship between PVL and cognitive impairment
Pathways related to the influence of the topography and the extent of PVL on cognitive impairments.

CONCLUSIONS
This study is the first report that showed the relationship between cognitive function and the daily life mobility among children with bilateral spastic CP who had almost the same gross motor capacity and the same etiological background.

We should assess the cognitive function properly and construct the comprehensive intervention program in order to improve the motor outcome of children with PVL in performance level.