RETINOPATHY OF PREMATURITY AND REDUCED CEREBELLAR VOLUME AT EARLY SCHOOL AGE

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Background

Very preterm infants with retinopathy of prematurity (ROP) have been reported to have decreased brain volumes at term age as determined by MRI. (1)

Aim

To evaluate the relationship between ROP, regional brain volumes and neurodevelopmental outcome at early school age after very PT birth.

Patients and Methods

We studied 46 children born very preterm (PT) at mean (SD) 26.5 (1.5) GW at 8 years of age by measuring regional brain volumes using MRI. Cognitive and motor function were assessed by the Wechsler Intelligence Scales for Children and the ABC-Movement score (ABC).

Results

Children born very PT who developed any stage of ROP (n=10) exhibited lower white matter, thalamic, and cerebellar volumes (p=0.021, 0.033 and 0.019, respectively) at early school age compared to children without ROP (n=36). After adjustment for sex, gestational age and weight deviation at birth, ROP remained associated with decreased cerebellar volume. (Table 1)

Cognitive and motor outcomes at 8 years of age were not associated with ROP.

Conclusions

Any stage of ROP following very preterm birth is associated with lower cerebellar volume at early school age but not with cognitive and motor outcome. Common pathways may lead to impaired neural and neurovascular development in the brain and retina.

Table 1.

Variable	Beta	Significance
SEX Female=0 Male =1	0,5	<0.001
Any ROP No=0 Yes=1	-0.31	0.018

ROP, Retinopathy of prematurity