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ARTICLE

Cerebral Palsy in a Term Population: Risk
Factors and Neuroimaging Findings

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OBJECTIVE. The purpose of this work was to study
risk factors and neuroimaging characteristics of
cerebral palsy in term and near-term infants.

PATIENTS AND METHODS. Among a cohort of
334339 infants ≥ 36 weeks' gestation born at Kaiser
Permanente Medical Care Program in northern
California in 1991–2003, we identified infants with
cerebral palsy and obtained clinical data from
electronic and medical charts. Risk factors for cerebral
palsy among infants with different brain abnormalities
were compared using polytomous logistic regression.

RESULTS. Of 377 infants with cerebral palsy
(prevalence: 1.1 per 1000), 273 (72%) received a head
computed tomography or MRI. Abnormalities included
focal arterial infarction (22%), brain malformation
(14%), and periventricular white matter abnormalities
(12%). Independent risk factors for cerebral palsy were
maternal age >35 , black race, and intrauterine growth

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restriction. Intrauterine growth restriction was more strongly associated with periventricular white matter injury than with other neuroimaging findings. Nighttime delivery was associated with cerebral palsy accompanied by generalized brain atrophy but not with cerebral palsy accompanied by other brain lesions.

CONCLUSIONS. Cerebral palsy is a heterogeneous syndrome with focal arterial infarction and brain malformation representing the most common neuroimaging abnormalities in term and near-term infants. Risk factors for cerebral palsy differ depending on the type of underlying brain abnormality.



Key Words: cerebral palsy • epidemiology

Abbreviations: CP—cerebral palsy • CT—computed tomography • KPMCP—Kaiser Permanente Medical Care Program • ICD-9-CM—*International Classification of Diseases, Ninth Revision, Clinical Modification* • IUGR—intrauterine growth restriction • RR—relative risk • CI—confidence interval • OR—odds ratio

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