

# PEDIATRIC NEUROLOGY BRIEFS

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### DEMYELINATING DISORDERS

#### INCIDENCE OF CNS DEMYELINATING SYNDROMES

Researchers at Los Angeles Medical Center, and University of California, San Francisco determined the incidence and clinical features of pediatric multiple sclerosis (MS) and other forms of acquired demyelinating syndromes (ADS) in the multiethnic membership of Kaiser Permanente Southern California from Jan 1, 2004, to Dec 31, 2009. Using a combination of electronic database searches followed by complete medical records review, 81 incident cases of ADS were identified from 4.87 million person years of observation in children 0-18 years of age. Incidence rate of MS was 0.51/100,000 per person-years, and of other forms of ADS, 1.56/100,000. The ADS syndromes included optic neuritis, transverse myelitis, clinically isolated syndrome (CIS), and acute disseminated encephalomyelitis (ADEM). The overall incidence of ADS was 1.66/100,000 per person-years. Incidence of ADS was higher in black (4.4;  $p<0.001$ ) and Asian/Pacific Islander (2.8;  $p=0.02$ ) than white (1.03) and Hispanic (1.5) children. MS was significantly more frequent in black than in white children ( $p=0.001$ ). Children with ADEM were significantly younger than those with other types of ADS (mean age 5.6 vs 14.6 years). (Langer-Gould A, Zhang JL, Chung J, Yeung Y, Waubant E, Yao J. Incidence of acquired CNS demyelinating syndromes in a multiethnic cohort of children. **Neurology** September 2011;77:1143-1148). (Response and Reprints: Dr Annette Langer-Gould, 100 S Los Robles, 2<sup>nd</sup> Floor, Pasadena, CA 91101. E-mail: [Annette.M.Langer-Gould@kp.org](mailto:Annette.M.Langer-Gould@kp.org)).

COMMENT. In a population-based cohort of Southern Californian children, the incidence of acquired demyelinating syndromes is 1.66 per 100,000 person-years. The incidence of ADS and MS is higher in black compared with white and Hispanic children.

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Pediatric ADS is rare, a previous study in Canadian children finding an overall ADS incidence of 0.9 per 100,000.(Banwell B et al. **Neurology** 2009;72:232-239).

Risk of MS in children is dependent on genetic factors (presence of HLA-DRB1\*15 genotype) and environmental triggers (previous infection with Epstein-Barr virus, and low serum 25-hydroxyvitamin D concentrations).(Banwell B et al. **Lancet Neurol** 2011;10(5):436-445). The increased risk conveyed by HLA-DRB1\*15 alleles relates to chronic MS rather than ADS in general (Disanto G et al. **Neurology** 2011;76(9):781-786). Whereas remote infection with Epstein-Barr virus is associated with an increased risk of pediatric MS, some viruses (cytomegalovirus) may lower MS susceptibility. HSV-1 remote infection does not increase odds of MS but it has a strong interaction with HLA-DRB1 in predicting MS. (Waubant E et al. **Neurology** 2011;76(23):1989-1995).

## OPTIC NEURITIS, ABNORMAL MRI AND OUTCOME

Researchers at Birmingham Children's Hospital, and Great Ormond Street and Evelina Children's Hospitals, London, UK followed 44 children (female/male ratio 1.8; median age 10.9 years) with a first-episode optic neuritis for a median of 1 year (mean, 1 year 10 months). Maximal visual deficit was severe (<6/60) in 77%. Recovery was complete in 70%. At follow-up, 32% were diagnosed with MS (11/44) or neuromyelitis optica (NMO) (3/44). Cumulative probability of developing MS or NMO by 2 years after optic neuritis onset was 0.45. Gender, age, unilateral/bilateral optic neuritis, visual acuity severity, and CSF oligoclonal bands were non-predictive. Strong predictors of MS or NMO were relapsing optic neuritis ( $p<0.001$ ) and an initial abnormal MRI ( $>1$  brain T2 hyperintense lesion)( $p<0.001$ ). (Absoud M, Cummins C, Desai N, et al. Childhood optic neuritis clinical features and outcome. **Arch Dis Child** Sept 2011;96:860-862). (Respond: Dr Michael Absoud, Clinical Research Fellow, Institute of Child Health, Birmingham Children's Hospital, Steelhouse Lane, Birmingham B4 6NH. E-mail: [michaelabsoud@childdemyelination.org.uk](mailto:michaelabsoud@childdemyelination.org.uk)).

COMMENT. Pediatric acute onset optic neuritis has a good initial prognosis. An abnormal initial MRI or relapsing optic neuritis is predictive of MS or NMO.

## LANGUAGE DISORDERS

### PRENATAL FOLIC ACID SUPPLEMENTS AND REDUCED RISK OF SEVERE LANGUAGE DELAY

The prospective Norwegian Mother and Child Cohort Study of pregnant women between 1999 and 2008 was used by researchers at the Norwegian Institute of Public Health, Oslo to examine the association between mothers' use of prenatal folic acid supplements and risk of severe language delay in the children at age 3 years. Language development assessment was based on follow-up questionnaires returned by 61% of mothers in 2010. Children with only 1-word or unintelligible utterances were rated as having severe language delay. Children who could only produce 2- to 3-word phrases