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MEDICAL UPDATE MEMO
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**MS SCIENTIFIC RESEARCH FOUNDATION FUNDED STUDY LOOKS
AT CANADIAN CHILDREN TO UNCOVER TRIGGERS OF MULTIPLE SCLEROSIS**

SUMMARY

The MS Scientific Research Foundation and the Multiple Sclerosis Society of Canada announced funding May 4, 2004 of a \$4.3 million, multi-centre study of children who have had an initial attack (clinically isolated syndrome or CIS). The five-year study will follow the children to find out which ones go on to experience a second attack and be considered to have clinically definite multiple sclerosis (MS). This study will have clinical applicability to children and adults with the disease. It may also identify the key triggers which cause multiple sclerosis.

DETAILS

The MS Scientific Research Foundation and the Multiple Sclerosis Society of Canada announced funding May 4, 2004 of a \$4.3 million, multi-centre study of children who have had an initial attack (clinically isolated syndrome or CIS). The five-year study will follow the children to find out which ones go on to experience a second attack and be considered to have clinically definite multiple sclerosis (MS).

MS is an unpredictable and often disabling disease of the brain and spinal cord. MS can occur at any age. While MS is usually diagnosed between the ages of 15 and 40, when people are finishing school, building careers and establishing families, it has been diagnosed in children as young as three. It is likely that MS is under-diagnosed in childhood. It is estimated that as many as 25% of adult MS patients feel that their disease started during their childhood or teenage years.

The principal investigators of the study are: Dr. Brenda Banwell, Hospital for Sick Children, Toronto; Dr. Amit Bar-Or, Montreal Neurological Institute; Dr. Douglas Arnold, Montreal Neurological Institute; and Dr. A. Dessa Sadovnick, University of British Columbia, Vancouver. The study is taking place at 22 Canadian hospitals in 17 cities across the country

Paediatric CIS has never before been examined in detail. This study is now possible by the development of the Paediatric Demyelinating Disease Network, a Canada-wide network of physicians and scientists located in Victoria, Vancouver, Edmonton, Calgary, Saskatoon, Winnipeg, London, Hamilton, Windsor, Toronto, Kingston, Ottawa, Sherbrooke, Montreal, Saint John, Halifax and St. John's.

Researchers will follow closely children who have had one attack suggestive of MS (CIS) to determine features associated with risk of a second (MS-defining) attack. Studying children from the time of the first attack allows researchers to explore the biological factors involved in the very beginning of the MS disease process. Researchers hope that these studies will identify the factors involved in the development of MS.

The three key components of the study are:

1) Clinical and genetic epidemiology

- The researchers will define the clinical features, demographics and genetic epidemiology of children with CIS and those children progressing to MS to identify predictors of the disease. Currently, there are no childhood predictors for MS.
- The results of the study will increase awareness of childhood-onset MS and will facilitate prompt diagnosis by identifying the features of MS in children, and characteristics predictive of MS risk following a first attack (CIS). This is important since it would help to determine whether a child is at high risk of developing MS and whether treatment with available drug therapies should begin.

2) Pathobiology

- By defining the earliest immunological events that occur at the time of the first attack (CIS), investigators will strive to identify both the triggers and initial targets of the immune cell response.
- In doing so, the study will define those immune responses associated with, or predictive of, the risk for further attacks leading to clinically definite MS.

3) Neuroimaging

- MRI (magnetic resonance imaging) is used to assist in MS diagnosis and in the prediction of MS risk following CIS in adults. By studying MRI characteristics in this paediatric study population, the researchers will:

- Create diagnostic MRI criteria for MS in children, which will facilitate diagnosis.
- Determine if particular MRI features are predictive of MS risk in children with CIS.
- Utilize newer MRI technologies to explore whether there are fundamental differences in the brain white matter (myelin) of children who develop clinically definite MS compared to who do not go on to develop MS..

Preliminary study enrolment is already underway at the Hospital for Sick Children, Toronto. The surveillance aspect (Canadian Paediatric Society Surveillance program) has already begun. The study will be formally launched at all sites on July 1, 2004. All Canadian health care providers will be asked to complete surveillance information (anonymous) on all children with CIS in order to understand the annual frequency of CIS in Canada. Health care providers will then inform parents and patients about the CIS study and enrolment will occur through contact with the nearest participating paediatric demyelinating study site.

Multiple Sclerosis Society of Canada and MS Scientific Research Foundation

The MS Society of Canada and the MS Scientific Research Foundation are the largest funders of MS research in Canada. The MS Society raises funds to support research and services almost entirely through individual and corporate donations and fund raising events across the country. The MS Scientific Research Foundation was established in 1973. It supports large cooperative multi-disciplinary research projects that are beyond the scope of the MS Society's regular granting program. . The MS Scientific Research Foundation receives almost all of its funding from the MS Society of Canada.

Besides funding MS research, the MS Society also provides services for people with MS, family members and caregivers. The MS Society also offers a unique support network for children and teenagers with MS and their parents.

Commenting on the study Alexander Aird said: "This is a very significant study for all those touched by the disease. The Foundation is proud to fund this ground-breaking research project." Mr. Aird is chair of the MS Scientific Research Foundation and former chair of the MS Society of Canada.

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