Multiple sclerosis and risk-taking

Sir,

Multiple sclerosis (MS) is thought to be a multifactorial disease, and a plethora of putative environmental risk factors have been studied, with inconsistent results. Hawkes takes a novel approach to this question, proposing risk-taking behaviour as a unifying theme capable of linking together several potential risk factors for multiple sclerosis. However, this ‘hypothesis’ paper illustrates many of the difficulties inherent in studying risk factors for a chronic disease with a long latency between exposure and detection of clinical onset. Among these are potential selection and ascertainment biases, difficulty of establishing temporality, consistency of data and biological plausibility.

Of the guidelines for judging causality in observational studies, establishment of temporality is the most critical. Several studies cited to support an association between alcohol abuse and increased risk of MS lack control groups, and temporality is lacking. Sero-epidemiological studies document evidence of prior infection, but cannot establish when an infection occurred, its severity, or even whether it was clinically symptomatic or asymptomatic. EBV is not generally regarded as a sexually transmitted disease, and more than 90% of the adult population has antibodies to EBV.

Ascertainment bias is a common issue in observational studies. It is a major concern with questionnaire-based studies of diet due to intra-individual variations in diet. In particular, current diet affects the ability to recall past diet accurately. Observed differences in disease prevalence between members of different ethnic groups or societies may reflect variations in the populations compared (with respect to their population substructure), differences in the completeness of case ascertainment, or variability in the diagnostic criteria used. Isolated populations may also differ in their underlying genetic susceptibility to disease.

Consistency of experimental data is also important. Patients with MS report less sunlight exposure and reduced risks of skin cancer, and this argues against MS patients as risk-seekers. As discussed in the paper, oral contraceptive use would be regarded by many individuals as risk-averse behaviour, because pregnancy is avoided.

It is commendable to try to link the disparate risk factors studied in MS in a rational manner, and to consider novel viewpoints, but the data available are inadequate to support the hypothesis that multiple sclerosis is associated with risk-seeking behaviour.

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References


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