Multiple sclerosis: research in British Columbia

To the editor: In their article on multiple sclerosis (Can Med Assoc J 1982; 126: 377–382, 385) the most recent reference Warren and coworkers cite on familial predisposition to multiple sclerosis is 19 years old! This gives the false impression that no recent work has been done in this area. I would like to report some recent studies conducted in British Columbia on the genetic aspects of multiple sclerosis.

In one recent study pedigrees were obtained from 364 families having two or more siblings in which at least one sibling was considered to have "clinically definite" multiple sclerosis according to the Schumacher committee criteria. These data were tested for "goodness-of-fit" to the polygenic threshold model of inheritance. The conclusion was that a major gene could be responsible for at least a portion of the cases.

Warren and coworkers found that 22 of 100 case subjects reported a family history of multiple sclerosis, although the diagnostic criteria used for relatives of patients were not specified. To date in British Columbia genetic histories are available for 638 unrelated patients with "clinically definite" multiple sclerosis — 416 were ascertained as part of an earlier study and 222 were seen at the multiple sclerosis research clinic of the University of British Columbia. Of the 638 patients 106 (17%) reported at least one relative with "clinically definite" multiple sclerosis, and 31 (5%) had at least one relative with "possible" multiple sclerosis.

Warren and coworkers reported that 14 (1.3%) of 1088 first-degree relatives (parents, siblings or children) of their patients with multiple sclerosis also had the disorder. A preliminary report based on data from British Columbia gave empiric recurrence risk data for first-, second- and third-degree relatives of patients: in a group of parents and siblings of 416 unrelated patients with multiple sclerosis 52 of 2005 also had the disease, for a risk of 2.6 ± 0.6%. This calculation excludes children of index patients since most would still be young enough to be at risk of having multiple sclerosis develop. For this reason we are currently deriving age-specific empiric recurrence risks.

Accurate prevalence data are not yet available for British Columbia, but it is estimated that the prevalence of multiple sclerosis is at least 100/100,000 population. Our findings suggest that the risk of multiple sclerosis developing is at least 26 times greater for first-degree relatives (excluding children) of index patients than for the general population. The risk of 15 times cited by Warren and coworkers is probably low, since children of index patients were included in the calculations.

I wish to stress that work on familial aspects of this disease is continuing in British Columbia and other areas.

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References


“Swan–Ganz elbow”

To the editor: In view of the increasing awareness of occupational disease, we would like to report a condition restricted to persons using the Swan–Ganz catheter.

We recently began our rotation in an intensive care unit. After 2 to 3 weeks we all had pain over the medial epicondyle of the humerus in the nondominant arm. Supination of the forearm against resistance, a valgus stress applied to the elbow and direct palpation of the epicondyle all exacerbated the pain. Roentgenograms made of one of us revealed roughening of the periosteum over the epicondyle.

As part of our responsibilities in the intensive care unit we measure cardiac output in patients in whom Swan–Ganz catheters have been inserted. Accurate measurement requires rapid injection of 10 ml of iced saline through the proximal port of the catheter. For this maneuver to be performed adroitly the hub of the injection port must be stabilized. It is grasped in the nondominant hand, with the forearm in full supination. As the injection is delivered a valgus strain is applied to the nondominant elbow. Furthermore, the forearm undergoes resisted pronation. The mean of three determinations is used. When on call a resident performs an average of 12 measurements during one 24-hour period, although the number varies greatly (from 0 to 50).

We believe that “Swan–Ganz elbow” can be treated nonoperatively. To date we have encouraged removal of Swan–Ganz catheters from all patients in whom they are not absolutely necessary, reduced the frequency of cardiac output determinations and used anti-inflammatory medications orally.

We believe, however, that the definitive treatment for us will be successful completion of this rotation.

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Diagnosing and treating hypothermia

To the editor: We wish to congratulate Dr. John W. Martyn on his excellent review of accidental hypothermia (Can Med Assoc J 1981; 125: 1089–1096).

We found in our recent research on mild hypothermia (core temperature 35°C), induced in naval divers by cold water immersion, that optimal temperatures for a warm water bath used for rewarming should probably be as low as 37 to 38°C. Higher temperatures (near 40°C) caused the subjects discomfort, and many preferred to leave the warm water tubs within 10 to 20 minutes for subsequent rewarming by surface methods. High temperatures also caused vasodilation and hypotension in certain subjects, which could produce syncope or myocardial infarction in susceptible individuals.

Other navy divers had reported that when they had borderline hypothermia after in-water decompression they often rewarmed themselves by standing under hot showers with the water directed to the back of their necks. Subsequent experiments at our institute showed that this suspends shivering in certain subjects, perhaps because the rapidly warmed blood supply of this region overwhelms the shivering reflex. These divers often leave the shower early, thinking that they are normothermic, when in fact their internal temperature