Multiple sclerosis in southern Europe II: Prevalence in Malta in 1978

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SUMMARY After an intensive survey only 14 patients have been found with a diagnosis of probable multiple sclerosis (MS) in the islands of Malta. This is a low prevalence of 4.2 per 100 000. The low prevalence of MS is confirmed by the small number of deaths certified as due to MS—six in 11 years—and by the absence of Maltese MS patients resident in England among the MS patients admitted to hospital in Greater London and the West Midlands (1960–72). The low prevalence of MS found in Malta can be contrasted with the high prevalence found in Enna city in central Sicily. The genetic and environmental reasons for this difference in MS prevalence between the neighbouring islands of Sicily and Malta require further study.

The prevalence of multiple sclerosis (MS) in northern and central Europe is known to be high—approximately 50–60 per 100 000—and it is believed to be low on the African continent (McAlpine *et al.*, 1965).

In the islands of southern Europe, for example, in Sicily and Malta, placed between the areas of suspected high and low MS prevalence, important information could be found about the environmental and genetic factors responsible for the disease. Although the environment appears to be of major causative importance, genetic factors are probably associated with susceptibility to the disease, as shown by the increased frequency of certain histocompatibility antigens (HLA-A3, B7, and DW2) in patients with MS (Lancet, 1976). Genetic as well as environmental factors therefore need to be considered if any major differences in prevalence are found.

Among immigrants from Malta to England resident in Greater London and the West Midlands, no MS patients were admitted to hospital with the disease between 1960 and 1972, and 9.7 would have been the expected number if they had had the same admission rate as people born in the United Kingdom (Dean *et al.*, 1976; 1977). In contrast, among immigrants from the island of Cyprus there were 23 hospitalised MS patients and 39.3 would have been the expected number at the United Kingdom-born rates. The absence of patients with MS among the Maltese immigrants suggested the need to undertake a survey of the prevalence of the disease on the

islands of Malta in order to disprove or confirm that it was uncommon among the Maltese.

The population of the Maltese islands in 1975 was approximately 322 600 (297 600 in Malta and 25 000 in Gozo). The people of Malta speak an Arabic language and are largely of Semitic origin, although Malta, like Sicily, has been peopled in its time by Phoenicians, Carthaginians, Greeks, Romans, and Arabs.

For years Malta has had a good health service, largely state-supported, with a state teaching hospital and medical school. There has been a strong alliance between the Maltese and the British Medical Associations and medical professions, and many Maltese doctors have studied and practised in the United Kingdom.

Method

A search was made for all patients diagnosed as having possible or probable MS, or other conditions, such as encephalitis or retrobulbar neuritis, which might have masked MS. The maximum amount of help was received from the government, the medical profession, and the hospitals. Meetings were held with physicians and ophthalmologists, with general practitioners, and with medical officers of health. The records at the government and university hospital in Pieta were examined for patients diagnosed as having possible or probable MS or retrobulbar neuritis. We also collaborated with the medical and records staff of all the Maltese hospitals, including the naval

hospital at Mtarfa. The list of all those receiving disability benefits was checked for further cases of possible MS.

Because of the close collaboration between the Maltese and the British health services, patients are frequently sent at government expense for full investigation in London teaching hospitals; those with a neurological condition are most frequently referred to the National Hospital, Queen Square. Summaries were obtained of the investigations undertaken on patients who had been in London hospitals.

Professors of medicine in Malta, past and present, hospital and naval physicians, ophthalmologists, government and family doctors all collaborated in this study, and all patients who might possibly have MS were investigated.

Results

After an intensive search, only 14 patients with probable MS (eight men and six women), and three with possible MS, could be found resident in the islands on the chosen prevalence day—1 January 1978, and no patients were found with retrobulbar neuritis only. Of the 14 with probable MS, 11 were living in Malta and three in Gozo. Fourteen probable MS patients out of a population of 322 600 is a crude prevalence of 4.3 per 100 000 (5.2 male and 3.6 female per 100 000). Age-standardised for the population of England and Wales, the rate in Malta would be 4.2 per 100 000.

Among the 14 probable MS patients in Malta, paraesthesia was the first symptom in six, paraplegia in three, retrobulbar neuritis in three, and diplopia in two. The average age on prevalence day was 34.9 years (35.9 for men and 33.5 for women). The average age at onset was 28.3. All the patients had at least partial remission. One patient was diagnosed as having Devic's syndrome. Nine of the 14 patients had also been investigated at a London teaching hospital, seven of the nine at the National Hospital, where the diagnosis of MS had been confirmed. Two of the three patients with possible MS had also been investigated at the National Hospital. It is of great interest that no one was found with a history of retrobulbar neuritis only. None of the MS patients were related, as far as we could ascertain, and all were born in the islands of Malta, except one who was born in Italy.

Multiple sclerosis was recorded as a primary or contributory cause of death on only six death certificates in the Maltese islands between 1967 and 1976. In five of these the history and clinical findings confirm the diagnosis, and the sixth was probably incorrectly certified. The small number of death

certificates on which MS (or disseminated sclerosis) was mentioned confirms the finding of a small number of patients with MS among the living population.

Discussion

After three years' study in close collaboration with doctors, hospitals, and the health department in the islands of Malta, only 14 patients were found to have probable MS and one of these was diagnosed as having Devic's syndrome. It is possible that we may have overlooked some undiagnosed MS patients in Malta with complete remissions, or a very benign course, but they are likely to be few in view of the high level of investigation of neurological disorders that we found there.

The low prevalence of MS in Malta found in this study, 4.3 per 100 000, is in great contrast with the high prevalence in Enna city in Sicily, 53 per 100 000 (Dean *et al.*, 1979). The climate of Sicily is very similar to that of Malta, although the high land of central Sicily has a colder drier climate than the coast, or the islands of Malta. The standard of living and way of life of the people of Sicily and Malta are similar, but medical attention, with state health support, is perhaps more readily available in the islands of Malta.

There are, no doubt, some genetic differences between the populations of Sicily and Malta, with more people of Semitic origin in Malta; a comparison of the HLA distribution in the populations and in the MS patients will be important. It is also interesting that retrobulbar neuritis, which does not develop into MS, is also uncommon in Malta.

Studies in the islands of southern Europe, Sicily and Malta, and perhaps in Cyprus and on the north coast of Africa, should add significantly to our understanding of the aetiology of MS.

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