MULTIPLE SCLEROSIS PREVALENCE IN 2000 AND 2010 IN WESTERN FINLAND

Running title: Rising prevalence of MS in Western Finland

Annukka Murtonen, MD. Faculty of Medicine and Health Technology, Tampere University, 33014 Finland.

Marja-Liisa Sumelahti MD, PhD. Faculty of Medicine and Health Technology, Tampere University, 33014 Finland.

Corresponding author: Annukka Murtonen, MD. Faculty of Medicine and Health Technology, Tampere University, 33014 Finland. E-mail: annukka.murtonen@tuni.fi, tel. +358 40 056 6858

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Key words: Multiple sclerosis, epidemiology, prevalence, disease course, sex

ABSTRACT:

Objective:

To study ten year change in MS prevalence in Province of Western Finland in Tampere University Hospital District located in 62.7° N, 23.7° E.

Methods:

Age standardized prevalence/10^5 by using direct standardization in European Standard Population (ESP2013) and crude prevalence/10^5 with 95% confidence interval (95%CI) was assessed among resident MS cases fulfilling Poser criteria by sex and disease course in 31.12.2000 and 31.12.2010. MS related disability and disease modifying treatment (DMT) use were estimated in 31.12.2010.

Results:

Crude prevalence increased 49% from 129/10^5 (95% CI 121-137) in 2000 (N 1080) to 196/10^5 (187-203) in 2010 (N 1666). Age standardized prevalence increased 45% from 133/10^5 (127-140) to 192/10^5 (184-200) and peaked in 40-49 year age group. Age standardized prevalence increased 58% among women from 176/10^5 (171-176) to 277/10^5 (270-284) and 31% among men from 91/10^5 (87-95) to 119/10^5 (115-124). Increase in RRMS was 61% from 111/10^5 (105-117) to 179/10^5 (171-186) and decrease in PPMS was 14% from 21/10^5 (19-24) to 18/10^5 (15-21).

In 2010 among the 52% RRMS cases on DMT, MS related disability was mild in 50%. In total cohort disability was mild in 46%, moderate to severe in 47%, information was not available in 14%.

Conclusion:

A significant increase in prevalence was observed in Western Finland. Increase was higher among women and in relapsing-remitting onset MS. Disability showed age -and disease course specific variation.

INTRODUCTION

Epidemiological observations in multiple sclerosis (MS) have consistently pointed at globally increasing prevalence.[1,2] At the same time MS mortality has decreased and analyses on incidence have shown both stability and increase. [2-5] The highest age standardized estimates have been observed in northern latitudes where prevalence among women and in relapsing-remitting MS are high. The relationship between socioeconomic determinants and increase in MS occurrence is observed, occurrence being higher in areas of higher socioeconomic level.[6] The case ascertainment and diagnostic criteria used in contemporary cohorts are today fairly comparable, but differences in population composition and population ethnic background, data sources and follow-up times are among the causes that hamper the direct comparisons.

Finland is located between latitudes 60° and 70° N, and longitudes 20° and 32° E, and it is one of the world's northernmost countries. Epidemiological data updated in 2016 showed a high nationwide MS crude prevalence estimate of 180-200/10^5 and east-west gradient.[7,8] Incidence trends from 1981 to 2010 in Province of Western Finland in Tampere University Hospital District showed a significant increase among women and opposite trends in increasing relapsing-remitting onset MS (RRMS) and decreasing primary progressive (PPMS).[9] These trends differed from a tandem increase in RRMS and PPMS reported in a Finnish MS cohort from 1979 to 1993.[10]

We aim to study prevalence in 2000 and 2010 in Province of Western Finland in Tampere University Hospital District and evaluate the impact of the observed incidence trends. In order to understand the present and future health care needs in MS, we aim to focus on disease course and age-specific changes, disability status and disease modifying treatment (DMT) use in the prevalence cohort in 2010.

MATERIALS AND METHODS

After the National Institute for Health and Welfare and local ethical standards committee approval, a retrospective search from hospital administrative registries for diagnoses multiple sclerosis or morbus demyelinans and optic- or retrobulbar neuritis (340, 341, and 377 in the International Classification of Diseases, ICD versions 8 and 9, G35, G37, and H46 in ICD10) up to 31.12.2010 was

accomplished in three central hospital districts belonging to Tampere University Hospital District in the Province of Western Finland, shown in Figure 1. The catchment area located in 62.7° N, 23.7° E includes the high risk areas in coastal hospital districts of Vaasa and Seinäjoki, and the more centrally located Pirkanmaa. The genetic and socioeconomic background in the districts is similar both in rural areas of partially Swedish speaking Vaasa, Finnish-speaking Seinäjoki, and in the more urbanized Pirkanmaa.[11,12]

Altogether 2131 cases with searched ICD diagnoses were identified from 1950´s up to end of follow-up in 31.12.2010. Retrospective and longitudinal follow-up up to 31.12.2010 involved data collection from patient documents for time point of initial MS symptoms, symptoms and disability progression during the follow-up, diagnostic procedures including cerebrospinal fluid examination, evoked potential and magnetic resonance imaging (MRI) dates and results. Information was scrutinized from patient records from first and successive neurological hospital visits up to 31.12.2010 by authors and MD Markus Holmberg. Cases were reassessed by authors to meet the inclusion criteria for a confirmed diagnosis by Poser at prevalence dates 31.12.2000 and 31.12.2010, including laboratory-supported and clinically definite MS cases.[13] Disease course at onset was categorized into relapsing-remitting MS (RRMS), including later secondary progressive MS cases, and primary-progressive at onset (PPMS). The classification of disease course first done by a treating neurologist was re-evaluated by authors to meet the criteria by Lublin and Reingold.[14]

Inclusion criteria for prevalence assessments were residency in the study district and a confirmed MS diagnosis by definite Poser criteria[13] at prevalence dates in 31.12.2000 (N 1080) and 31.12.2010 (N 1666). Date of death and residency at prevalence dates were updated by personalized identification number at Finnish Population Register Centre.

Disability status in 31.12.2010 was evaluated. Assessment based on neurological examination at yearly clinical visits including visits in +/- one-year window. Disability categorization into mild, moderate or severe was based on given Expanded Disability Status Scale (EDSS)[15] value or description of disability in patient document based on status signs, patient reported symptoms and symptomatic treatment shown in the patient record. In case there was no description of handicap at any central nervous system level or any symptoms that needed treatment or rehabilitation, or when the described symptoms and signs could be graded as mild, we categorized patient into a mild

disability group, corresponding to EDSS grades < 3.0. Categorization to moderate disability group concerned cases with a reported handicap in several functions, corresponding EDSS grades 3.0-5.5. Severe disability group here included cases with a significant handicap, shortened walking distance and a regular use of a walking aid, corresponding EDSS 6.0 or greater.

In 2010 information on disability was available in 86%, 1432/1666. Among these, EDSS value was given in 61.2%, 876/1432 cases. In 556 cases disability assessment based on a detailed description in patient record. Altogether 234/1666 cases (14.4%) were lost from yearly hospital follow-up in 2010 and information on disability was not available, of them 47 were PPMS and 187 RRMS cases. Information was available in 94.6% for RRMS cases on active DMT (790/835) in 2010.

Use of disease modifying immunomodulatory treatments (DMT) was assessed in 31.12.2010 among RRMS cases and based on longitudinal information in patient record. We did not include information on earlier treatments or if treatment was stopped before 31.12.2010. In 2010 total of 835/1432 RRMS cases were actively using DMTs. Use of injectable DMTs started in 1990's in Finland and patients on any immunomodulatory medication are followed in hospital neurological clinics. Injectable treatments are reimbursed by Finnish Social Insurance Institution.

Age standardized total and sex specific prevalence per 10^5 with 95% confidence interval (95% CI) was calculated by using a direct method in European standard population in 2013 (ESP2013), where standard population is based on geographical area given in Eurostat report.[16] Population statistics from Statistics Finland (www.stat.fi) was used to study crude total, sex - and disease course specific prevalence per 10^5 with 95% CI. Demographic comparisons of cases in the 2000 and 2010 prevalence cohorts were calculated and the significance of each comparison was assessed with suitable statistical tests (e.g. Chi-square, One-way ANOVA, independent samples T-test) and significance was given by using p values <0.05. STROBE checklist was used. Statistical analyses were made with SPSS for Mac version 25.

RESULTS

The catchment area in the Tampere University Hospital District in Western Finland located 62.7° N and 23.7° E is shown in Figure 1.

In 31.12.2000 inclusion criteria for prevalence were met by a total of 1080 MS cases, 718 women and 362 men (F/M 2.0) in a population of 836 596. In 31.12.2010 a total of 1666 cases, 1150 women and 516 men (F/M 2.2) were included in a population of 875 875. The detailed demographics of cases in 2000 and 2010 are given in Table 1. Mean diagnostic delay (time to diagnosis from onset symptoms) remained stable ($p > 0.05$). Female vs. male ratio increased from 2.0 to 2.2. Mean age and disease duration were lower in RRMS group as compared to PPMS ($p<0.05$) at both time points.

Total age standardized prevalence (ESP2013) increased 44.5%, from 133.0/10^5 (95% CI 126.7-139.7) in 2000 (N 1080) to 192.2 (184.3-200.2) in 2010 (N 1666). Increase was 57.5% among women from 175.9 (170.6-175.9) to 277.0 (270.4-283.6) and 30.8%, from 91.0 (87.4-94.8) to 119.0 (114.6-123.5) among men. (Figure 2.) Total age standardized prevalence in 10-year age groups peaked in 50-59 years in 2000 and in 40-49 years in 2010, this was also true among men but the peak prevalence among women in age group 40-49 years remained unchanged (Figure 3.)
Total age standardized prevalence in RRMS increased 60.4% from 111.3(105.4-117.1) in 2000 (N 906) to 178.5(171.0-186.0) in 2010 (N 1490). In PPMS decrease was 15.9% from 21.4 (18.8-24.0) in 2000 (N 174) to 18.0 (15.4-20.6) in 2010 (N 176).

Crude prevalence increased 51.4% % from 129.1 (121.4-136.8) in 2000 to 195.5 (186.5-202.5) in 2010. The 66.3% increase among women from 156.1 (131.5- 180.7) to 259.6 (244.6-274.6) was greater than 50.5% increase among men from 79.2 (61.0 – 97.4) to 119.2 (108.9-129.5). Crude prevalence in RRMS increased 59.4% from 106.7 (99.7-113.7) to 170.1 (161.5-178.8) and differed from the trend (decrease 3.4%) in PPMS from 20.8 (17.7-23.9) to 20.1 (17.1-23.1). Age- and sex-specific prevalence estimates in 2000 and 2010 are presented as a supplementary file.

In 31.12.2010 number of resident MS cases in three hospital districts was 762 (47.5%) in Pirkanmaa (population 511 156), 560 cases (33.6%) in Seinäjoki (198 469) and 356 cases (21.4%) in Vaasa (166

250). The age standardized prevalence (ESP2013) was 275.6 (267.6-283.5) in Seinäjoki, 226.1 (202.1-250.2) in Vaasa and 149.3 (120.9-177.8) in Pirkanmaa.

In 2010 the mean and median calendar year of MS diagnoses were 1996 and 1999. Mean age at follow-up was 50.2 years and mean disease duration was 13.5 years. Mean age in PPMS cohort (N 176) was significantly higher ($p<0.001$) 62.4 years (SD 10.9) as compared to RRMS cohort (N 1490), 48.8 years (SD 13.8). Same was true for disease duration, 19.0 years (11.9) and 12.8 years (10.1), respectively ($p<0.001$).

Disability distribution in 31.12.2010 in total cohort showed a mild disability in 46% of cases, which was significantly higher percentage than the 16% in moderate, 23 % in severe and 14% with missing disability evaluation, $p<0.001$. Distribution by disease course is shown in Figure 4. Disease course specific distribution pointed at a mild disability among the majority of RRMS cases in 52% and severe disability among PPMS cases in 44%. Disability evaluation was not available in 14%, and these cases represented older age groups and a long disease duration: the mean age was 60.7 years (SD 11.9) in RRMS (N 187) and 66.6 years (11.0) in PPMS and the disease duration was 20.7 years (11.5) and 21.8 (13.6) years, respectively.

In 31.12.2010 a total of 835/1490 RRMS cases (56%) were actively using DMT, mainly injectable medications (51.6%). Treated RRMS patients showed a mild disability (corresponding to EDSS 0-2.5) in 50% (421/835) and mainly in the youngest age-group < 31 years, shown in Figure 5. DMTs were any subcutaneous or intramuscular injectable in 753/835 (90.2%), natalizumab in seven, other immunosuppressing medication in 17 case. Fifty-nine cases were participating in randomized clinical trials. EDSS value in 2010 was given in 94.6% and disability evaluation was missing 5.4% (45 cases). Disability increased in older age groups and moderate or severe disability was observed in 369/835 (45%). Disability distribution showed no sex difference (Chi-Square $p=0.58$).

DISCUSSION

The ten-year increase in MS age standardized prevalence in Western Finland showed a statistically significant 32% increase from 2000 to 2010. The $192/10^5$ age standardized prevalence in 2010 is high in global comparison and corresponds to prevalence in other Nordic areas and the recent

estimate in Finland.[2,8] Increase concerned both sexes, and the female versus male ratio varied only slightly from 2.0 to 2.2. The significant increase in RRMS prevalence contrasted the stable trend in PPMS. Prevalence increased in all age groups and peaked in age-group 40-49 years in 2010.

The relative effects of changes in MS survival and incidence are reflected in prevalence. As the recent incidence and sex difference seem to have stabilized[3] and the global trends in mortality have decreased[2], the general increase in prevalence is largely explained by increasing survival in MS population,[17] which may largely explain for the ten-year change also in our data. The incidence up to 2010 in the three hospital districts under study have earlier shown high female versus male ratios and both increase (in Pirkanmaa) and stability (in Seinäjoki and Vaasa) in total trends.[18] The earlier reported concurrent standardized mortality ratios up to 2006 in a Finnish cohort (including Seinäjoki, Vaasa and southern Uusimaa districts) diagnosed from 1964 to 1993 were shown to be higher among women as compared to men.[19] The relative impact of both sex specific incidence change and the sex specific mortality risk may be reflected in the age specific standardized prevalence change, where peak among women remained in the 40-49 year group, but moved from 50-59 years to 40-49 years among men.

In this study we examined demographic trends which may have impacted the prevalence proportions at two time points. Decrease in mean age at diagnosis was less than one year after an interval of 10 years. There was only a modest increase both in the mean disease duration from 12.6 to 13.5 years and in the mean age from 49.6 to 50.2 years, corresponding to the stability in age specific trend. The identified demographic differences in the two cohorts concerned the increased mean disease duration from 15.8 to 19 years and mean age from 56.6 to 62.3 years in PPMS. The respective change in RRMS group was smaller, duration from 11.7 to 12.8 years and mean age from 47.9 to 48.8 years. These demographic changes in disease course groups reflect the longevity effect. However, the impact of concurrent incidence changes from 1981 to 2010 in the same catchment area is to be considered, as we have reported a statistically significant increase in RRMS from 4.2 (95%CI 3.7–4.6) to 9.7 (8.9–10.5)/10^5 and a drop in PPMS from 1.2 (0.9–1.4) to 0.7 (0.5–0.7), which differences however stabilized during the last study decade.[9] These trends differed from the observation in a Finnish cohort diagnosed in 1979-1993, where a tandem increase in RRMS and PPMS was shown.[10] Differences between results in the two incidence studies may be explained by improvements in MS diagnostics, the common awareness and importance of early diagnosis and

treatment start. The resulting disease course specific prevalence trends in 2000 and 2010 differed, likely reflecting impact of both survival and incidence. The impact of factors related to case ascertainment and diagnostic accuracy seems to have stabilized recently, since there was no remarkable change in age at diagnosis or diagnostic delay in the 2000 and 2010 prevalence cohorts. The impact of longevity effect and incidence has resulted in a high mean age in PPMS, over 60 years, being 49 years in RRMS in 2010. MS related disease burden was higher in PPMS subgroups, based on a proportion of cases with a confirmed severe disability. The long follow-up from 1950´s to 2010 and inclusion of secondary progressive cases into relapsing remitting onset MS category are the likely factors explaining for the variability of disability distribution in RRMS. The highest proportion of cases with a low disability was observed among the youngest RRMS cases who were using disease modifying treatments in 2010.

Estimates for DMT use in MS cohorts are generally scarce. Injectable DMTs, available from 1990's, were used in more than half (52%) among the RRMS cases in our 2010 cohort. The 76% of all cases on current treatment were included in a mild disability group in age group < 31 years, which was significantly higher as compared to reported 51% in largest age group of 31-60 years, result concerning both sexes. However, altogether 45% of cases on treatment showed a moderate to severe disability and more so in older age groups. We did not include cases who had stopped medication before follow up in 2010 and the estimate for DMT use as given here is a rough point estimate and in dynamic change. The results on disability in our total and RRMS cohorts indicate both burden related to quality of life, long-term treatment costs and employment, as well as a need for rehabilitation services in a wide age group of MS patients. [20,21]

The limitation for comparability of data concerns the changing diagnostic criteria and diagnostic methods in long follow-up studies such as in our study. The first diagnosed cases in our data from 1950's to 1990's were diagnosed in the clinics mainly by using Schumacher criteria.[22] During the follow-up these criteria were substituted by Poser criteria[13] in 1990's and the McDonald criteria in 2000's.[23] Active cerebrospinal fluid sampling and examination using both IgG index and oligoclonal bands as well as active use of MRI, including gadolinium enhancement from 1990's, promoted the retrospective application of Poser criteria in our data. Cases in our study cohorts were re-evaluated to fulfil the laboratory supported or clinically definite MS by Poser criteria and this led to exclusion

of cases especially in older age groups where patient documents did not show sufficient evidence for a definite diagnosis.

By using the definite Poser inclusion criteria our effort was to control for the risk for diagnostic bias and ascertain for the validity of case ascertainment in this study cohort covering a long follow-up of cases from 1950's.

Another limitation in our inferences concerns the disability assessment. Today EDSS is implemented in MS follow-up information in neurological clinics and also in our data EDSS was given in a majority of cases on active follow-up. Disability assessment in almost quarter of cases was however based on status description and thus susceptible to biases, both in terms of the level of detail provided in the record and the authors' interpretation of this. We categorized disability in three severity categories, based on both given EDSS and descriptive assessment. Such categorization into mild, moderate and severe disability is also used elsewhere and we believe that it gives a clear enough perception of disability.[2] Disability information in 2010 was not available in 14%. In this group a progressed disability is likely, as a truly benign disease course is rare and patients are shown to live at an average almost 20 years with moderate and 30 years with severe disability, as was reported in a Swedish study.[24,25] In spite of the shortcoming, the convincing trend for progressive nature in MS by age was observed in RRMS group for cases on DMT, where disability information was available in 95%.

Strength in this population-based study is a confirmed diagnosis and a long follow-up in neurological clinics, and a stable ethnic and socioeconomic background[12] of the study population in a large population and catchment area. Data on death dates and residence are based on national data sources by using a personalized identity code given to Finnish residents. This information is reliable and it was available for all cases. MS patients in Finland in almost 100% are diagnosed and treated in publicly funded central or University Hospital neurological clinics. Comparable medical standards in the hospitals enables us to draw inferences on regional trend. Our data source is reliable and it is based on hospital discharge ICD-diagnoses. We were able to scrutinize information for neurological follow-up visits from patient records and evaluate the demographics, disease course and disease modifying treatment use. Description on patients' disability was available in a majority of cases. This and the follow-up in case of disease modifying treatment use is almost complete. Medication is

either payed by hospitals or reimbursed by Finnish Social Insurance Institution. Reimbursement is 100% in case of injectable DMTs, which were mainly used during the follow up here. Based on the availability of reimbursed treatments and the active follow up, the proportion of treated cases may be regarded reliable.

A special epidemiological feature in Finland observed already in 1970's concerns the regionally high MS prevalence in coastal parts of Western and South Western Finland.[26] The difference between South Western and Eastern Districts shown already in 1970's[26] prevailed in a study in 2016, where a 5-year follow up from 2012-2016 showed age-standardized rates 280/10^5 (95% CI 264-296) and 168/10^5 (95% CI 148-190) respectively.[7] Difference between coastal and inland districts was shown to prevail also in our data. These results point at regional high MS risk in the western coast of Finland. The rates in a large region in Western Finland as shown here in 2010 corroborate the concurrent rates in other Scandinavian countries, such as the nationwide prevalence 188.9/10^5 reported in 2008 in Sweden,[27]crude nationwide prevalence 208/10^5 in 2013 in Norway,[28] 154.5 /10^5 in 2005 in Denmark,[29] and 167.1/10^5 in 2007 in Iceland[30]. Although no exact nationwide prevalence estimation exists in Finland, results here and in a recent report based on a national register information point at a globally high nationwide prevalence of 180-200/105.8

Early observations in geographical variation in MS occurrence, such as has been observed in Finland and Scandinavian countries, suggests that local environmental risk factors could be related to dietary and life style factors.[31, 32]

Conclusion:

We report a high and increased MS prevalence from 2000 to 2010 in Western Finland in concordance with recent prevalence data concerning Finland and other high risk areas. A majority of cases in 2010 showed a relapsing–remitting onset course and a mild disability. Moderate to severe disability was high in older age-groups and in PPMS. Variable occupational and health care needs in MS population are expected to increase and this should be considered in social and health care resource planning.[33]

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The Authors declare that there is no conflict of interest.

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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Table 1. Demographic features in MS prevalence cohorts by disease course at end of follow up in 31.12.2000 and 31.12.2010.

	31.12.2000						31.12.2010					
	RRMS		PPMS		p	Total	RRMS		PPMS		p	Total
Total N, %	906	84 %	174	16 %		1080 100 %	1490	89 %	176	11 %		1666 100 %
Women	618	86 %	100	14 %		718 100 %	1046	91 %	104	9 %		1150 100 %
Men	288	80 %	74	20 %		362 100 %	444	86 %	72	14 %		516 100 %
F/M	2.2		1.3			2.0	2.4		1.4			2.2
Mean age (SD), years	48.0	(12.3)	56.6	(11.1)	<0.001	49.6 (12.6)	48.8	(13.8)	62.4	(10.9)	<0.001	50.2 (14.2)
Disease duration, mean (SD), years	11.7	(9.3)	15.8	(11.1)	<0.001	12.5 (9.8)	12.8	(10.1)	19.0	(11.9)	<0.001	13.5 (10.5)
Age at diagnosis, mean (SD), years	36.6	(10.1)	41.1	(9.6)	<0.001	37.3 (10.2)	35.9	(10.3)	43.4	(10.4)	<0.001	36.7 (10.5)
Diagnostic delay, mean (SD), years	4.5	(5.7)	4.0	(4.9)	0.2	4.4 (5.6)	3.9	(5.7)	4.1	(5.5)	0.7	3.9 (5.7)

RRMS = relapsing-remitting multiple sclerosis, PPMS = primary progressive multiple sclerosis

F/M = female to male ratio

Figure 1.

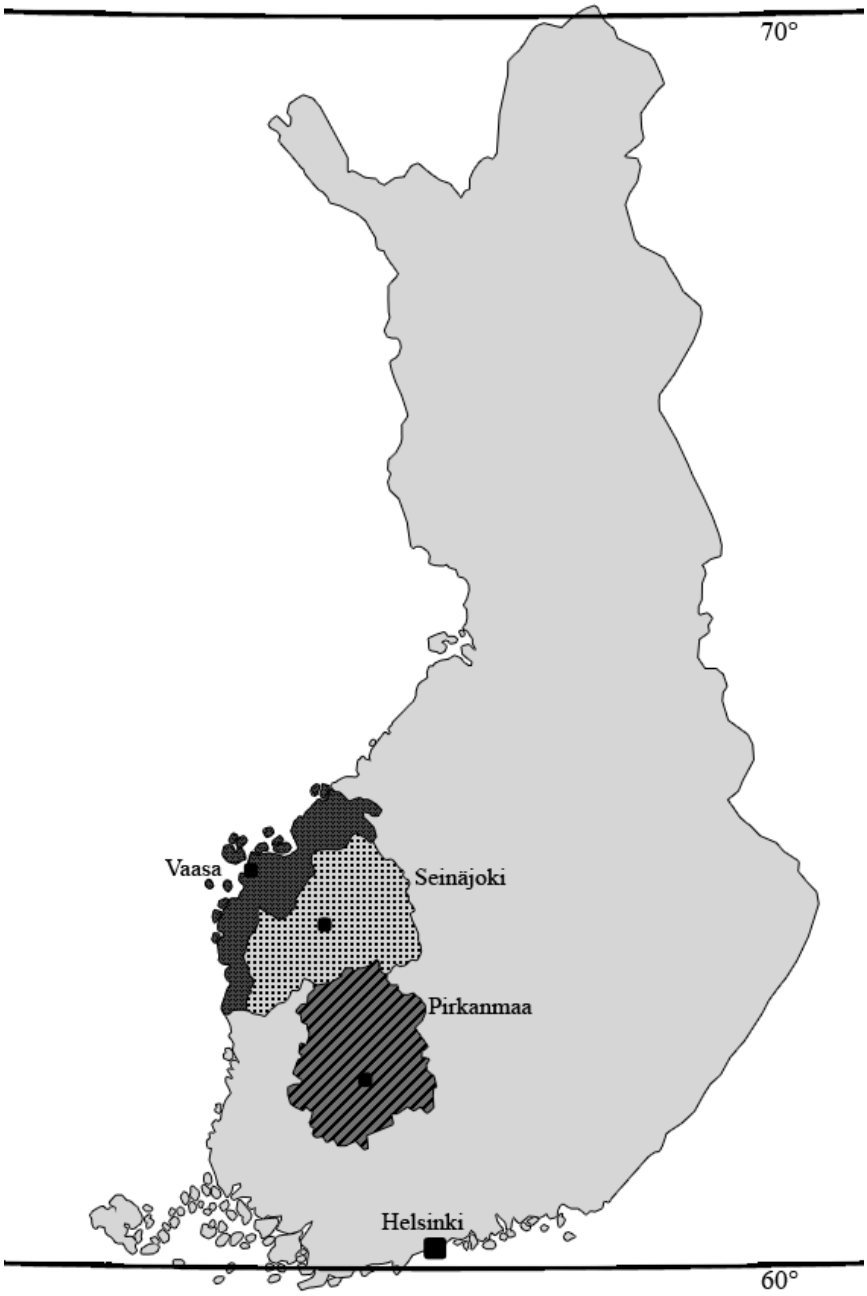

Figure 1. Map of Finland. Finland lies in Scandinavia, North Europe between latitudes 60-70°N. Gulf of Bothnia in northern most part of Baltic Sea limits the west coast. Western district locates in 62.7° N, 23.7° E and belong to Tampere University Hospital District. Location of three hospitals in Pirkanmaa (oblique lines), Seinäjoki (dots) and Vaasa (dark grey) are pointed in the map.

Figure 2.

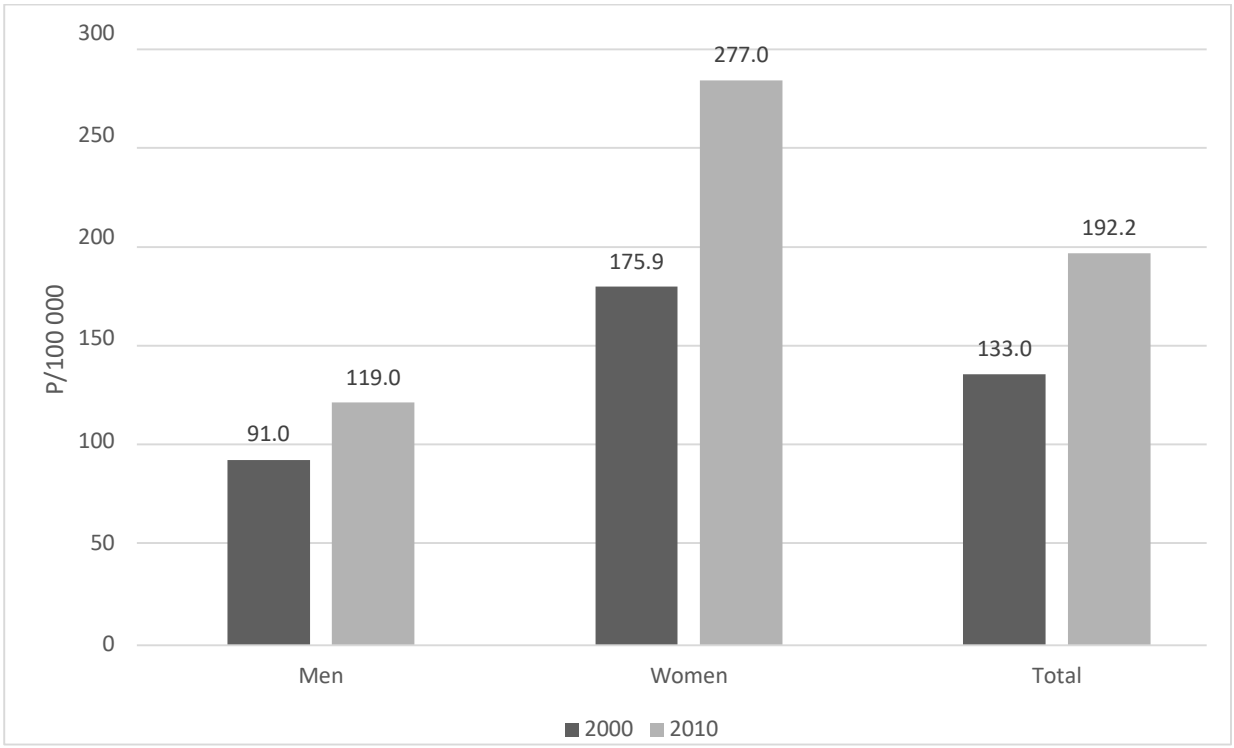

Figure 2. Total and sex-specific age standardized prevalence in 2000 and 2010.

Figure 3.

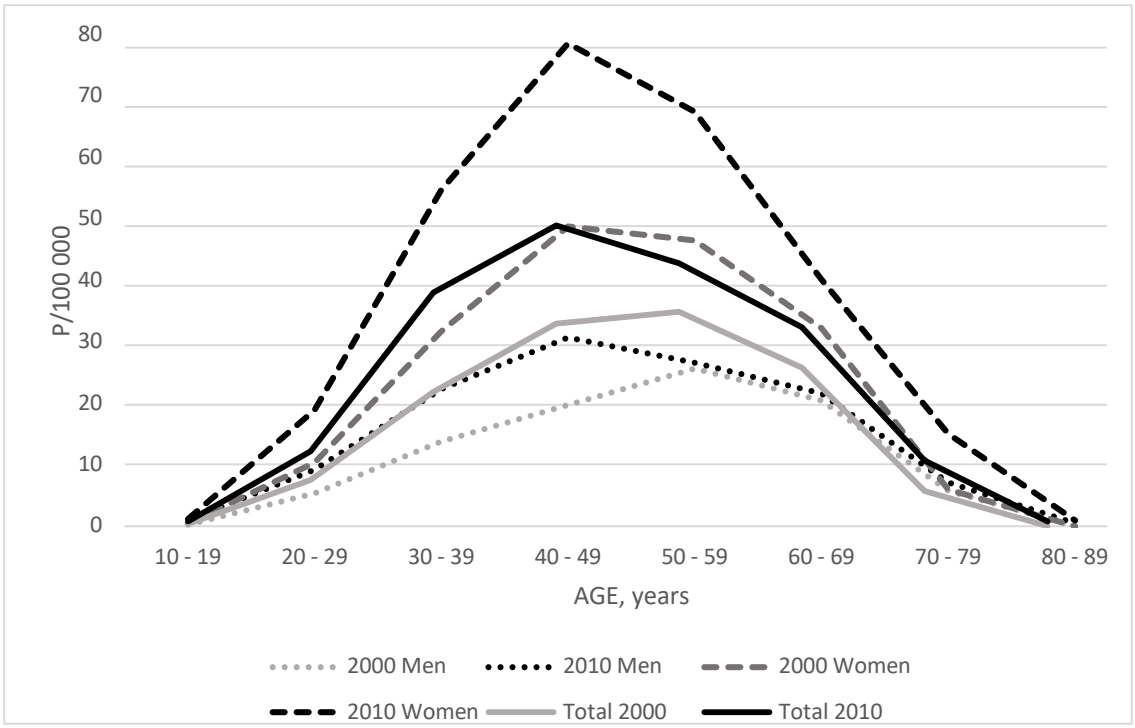

Figure 3. Age standardized prevalence in ten-year age groups in 2000 and 2010.

Figure 4.

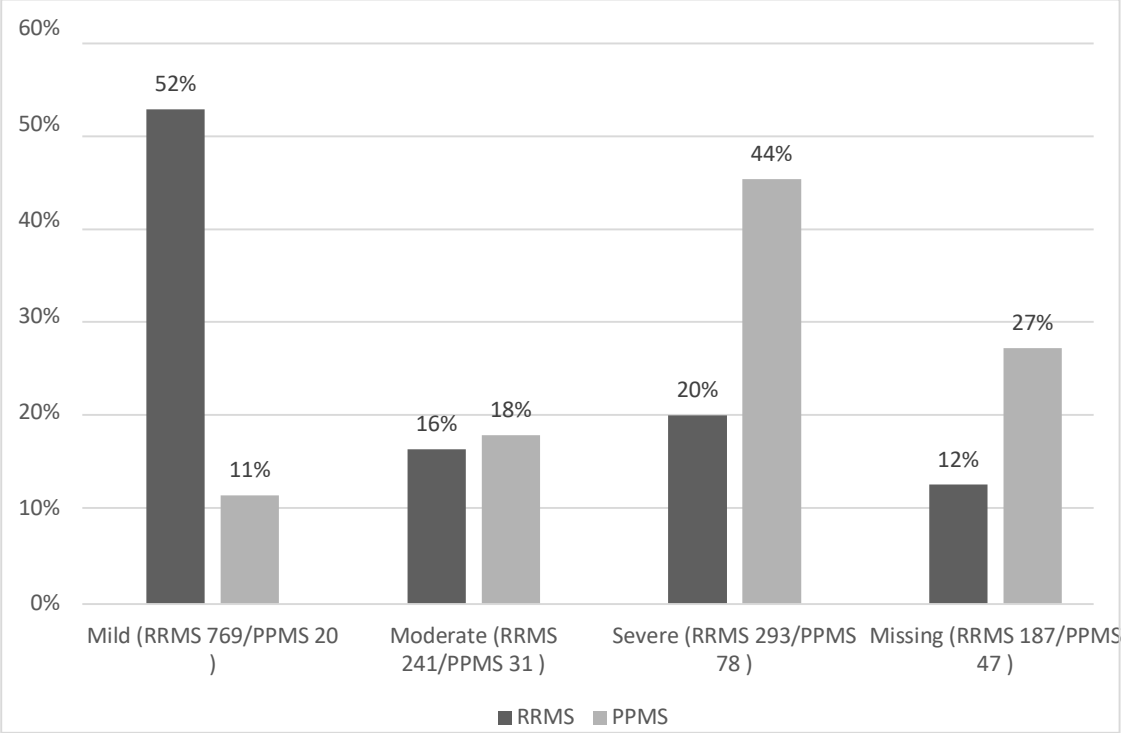

Figure 4. Number and distribution of RRMS (1490) and PPMS (176) cases by disability status in 2010.

Figure 5.

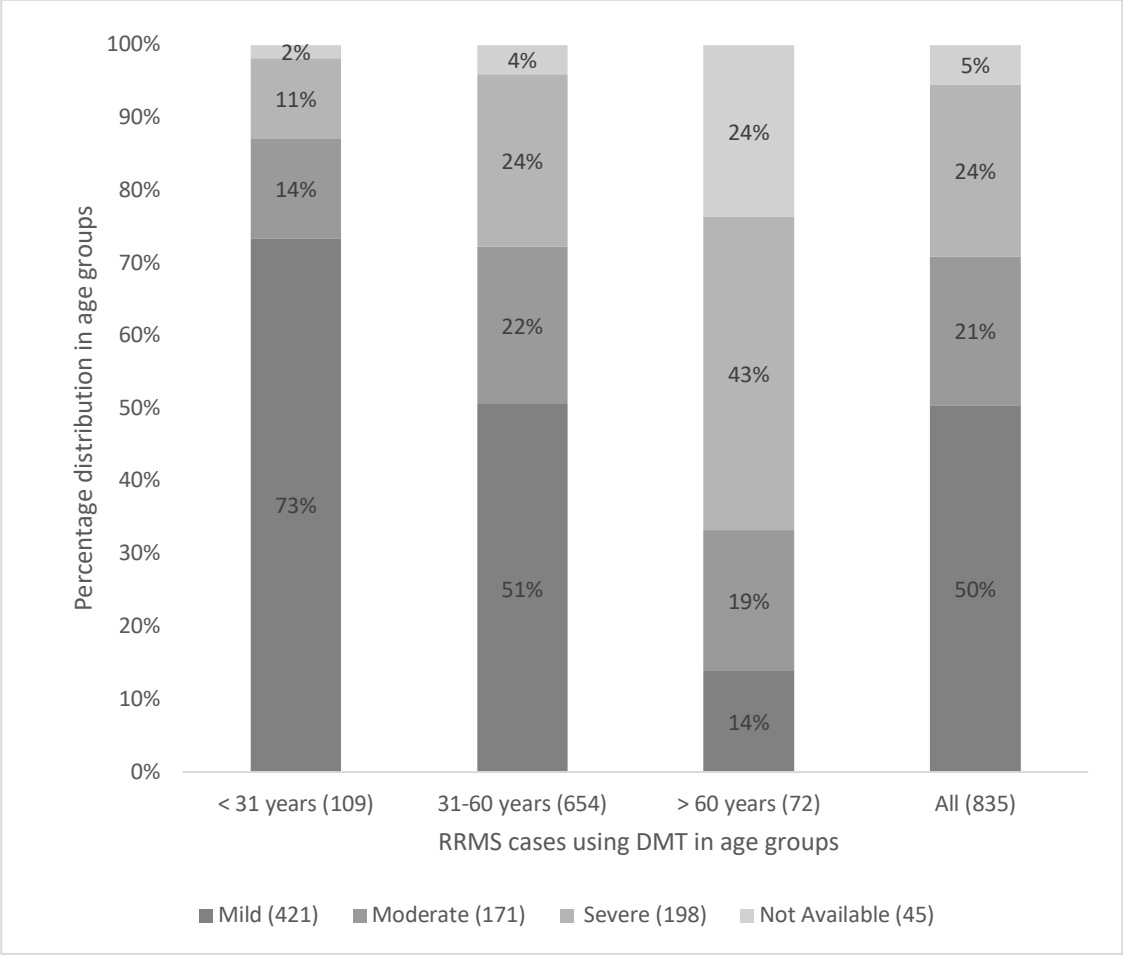

Figure 5. Distribution of cases in 2010 on active disease modifying treatment (DMT) in three age groups by disability status. Evaluation of disability was not available in 45 cases in 2010.

Supplementary file. Age- and sex-specific prevalences in 2000 and 2010.

	31.12.2000		31.12.2010	
10-year age-group	N	Prevalence/100 000	N	Prevalence/100 000
	Total	Total	Total	Total
- 9	0		0	
10 - 19	3	2.9	7	7.1
20 - 29	64	64.7	115	104.3
30 - 39	180	166.6	298	290.7
40 - 49	287	242.8	397	360.4
50 - 59	303	266.5	379	326.9
60 - 69	180	231.7	312	290.2
70 - 79	63	65.1	136	122.0
80 - 89	0		22	18.7
90 -	0		0	
	Men	Men	Men	Men
-9	0		0	
10 - 19	1	1.9	2	9.3
20 - 29	23	44.8	39	76.9
30 - 39	57	102.3	84	165.2
40 - 49	85	141.2	121	219.3
50 - 59	109	190.0	110	197.1
60 - 69	65	177.6	110	187.4
70 - 79	22	63.6	44	79.1
80 - 89	0		6	12.0
90 -	0		0	
	Women	Women	Women	Women
-9	0		0	
10 - 19	2	4.0	5	10.7
20 - 29	41	86.3	76	157.7
30 - 39	123	235.0	214	405.3
40 - 49	202	348.4	276	561.1
50 - 59	194	344.3	269	499.1
60 - 69	115	279.8	202	349.4
70 - 79	41	65.9	92	167.6
80 - 89	0		16	23.6
90 -	0		0	