

CONSIDERATIONS ON THE INCIDENCE AND WIDESPREADING OF DISSEMINATED SCLEROSIS IN THE DISTRICT OF VARNA

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It is a well known fact that multiple sclerosis is a comparatively frequently met with disease of the central nervous system. Insofar etiopathogenesis is concerned of this heavy condition, affecting the young and most productive age, the viewpoints are most conflicting. Some of the authors — A. Ferraro (13), D. McAlpine (17), L. Roisin and L. Kolb (23), E. Pette (20), V. Uchimura and H. Shiraki (26) abide to the allergic conception, whereas others — M. Margulis and co-workers (2) classify it under the heading of autoimmune diseases. Demyelination in multiple sclerosis is considered not as a result of the direct effect of any of the specific exogenous factors (virus, microbes and the like), but rather as a consequence of nerve tissue sensibilization to a variety of agents.

Owing to the great social impact of the disease, coordinated studies are carried out by investigators throughout the world to the end of clarifying the essence of the affection. Investigations in various directions, aimed at enriching the etiopathogenesis of the disease are under way but, as a matter of fact, the problem still awaits solution.

Publications on the incidence and widespreading of multiple sclerosis in the different continents and countries provide some idea about the influence of certain exogenous factors on its occurrence and development. In this respect, of particular interest are the works of Korin and co-workers (1), Alter (4), Kurtzke (14), McCall and co-workers (18), Leibowitz (16), Stazio and L. Kurland (24) and Upners (27). Baasch (8) emphasizes that in the past few years the number of patients with disseminated sclerosis in Europe and America showed a substantial increase. In Switzerland, out of a population of 6 millions, the cases registered amount to 3000, and in the USA, out of 195 millions — 100000 (see Table 2 — 6, 7, 9, 11, 14, 15, 19, 21, 22, 25).

Unfortunately, there is no sufficiently full information available, reflecting, at least approximately, the actual figures for this country. K. Pernov and co-workers (3) are the only ones who made an attempt in 1962 to describe the clinical forms and widespreading of disseminated sclerosis in Bulgaria, covering the period 1952 through 1959, but, it should be added right away that their work fails to record the incidence of the affection in the various districts and regions and, consequently, no analysis has been made of the latter.

We undertook the task to investigate the incidence and widespreading of multiple sclerosis in the district of Varna.

Table 1

**The Incidence of Disseminated Sclerosis in Some Larger
Cities of Europe and USA**
According to: R. Ch. Behrend, M. Chipman, S. F. Kurtzke

Name	Population	Incidence of D. S.	Northern latitude
1. Stockholm	502 200	18/100 000	59°
2. Malmö	510 700	24/100 000	56°
3. Copenhagen	762 300	51.4/100 000	56°
4. Hamburg	1 731 100	56.9/100 000	53°
5. Basel	217 400	105.8/100 000	47°
6. Zurich	876 200	59.2/100 000	47°
7. Bern	853 600	55.4/100 000	47°
8. Geneva	231 300	34.6/100 000	46°
9. Marseilles	661 500	14.4/100 000	43°
10. Boston	3 301 000	41/100 000	42°
11. Denver	1 083 000	38/100 000	40°
12. San Francisco	2 958 000	30/100 000	37°
13. Hueston	1 740 000	7.1/100 000	30°
14. New Orleans	1 044 000	6/100 000	30°

Table 2

The Incidence of Disseminated Sclerosis in Various Countries
According to: M. Alter and co-workers; J. S. Barlow; M. Bejsovec;
J. F. Kurtzke ;J. F. Kurtzke and co-workers; S. Okinaka
and co-workers; J. Presthus; U. K. Rinne and coworkers;
J. M. Sutherland and co-workers

Name	Year of investigation	Incidence	Northern latitude
1. Iceland	1946—1955	44/100 000	63—66°
	1966	71.6/100 000	63—66°
2. Norway	1935—1938	36.4/100 000	58—64°
	1966	25.7/100 000	62—63°
3. Northern Scotland	1951--1954	55/100 000	56—60°
4. Denmark	1921--1933	45/100 000	55—57°
	1921--1949	64/100 000	54—57°
5. Finland	1966	18.6/100 000	60—70°
6. Sweden	1925 -1934	22/100 000	58—64°
7. Northern Ireland	1948 -1951	50/100 000	54—55°
8. Switzerland	1918--1921	22.2/100 000	46—48°
	1956 -1957	51.4/100 000	46—48°
9. North Italy	1960	20/100 000	43—46°
10. South Italy	1960	12/100 000	38—41°
11. Czechoslovakia	1962	50—60/100 000	47—51°
12. South Corea	1968	2/100 000	34—37°
13. Mexico	1970	1.6/100 000	25—31°
14. Hawaii	1971	9.9/100 000	20
15. Japan	1966	2/100 000	33
	1966	4/100 000	38
16. Australia	1966	9/100 000	10—29° southern latitude

Material and Methods

Analysis is carried out of the case histories of 62 patients with disseminated sclerosis, admitted and treated at the clinic of nerve diseases and neurosurgery — Higher Medical Institute, Varna — over the period 1959—1969. Case histories of patients from Varna and its district only are investi-

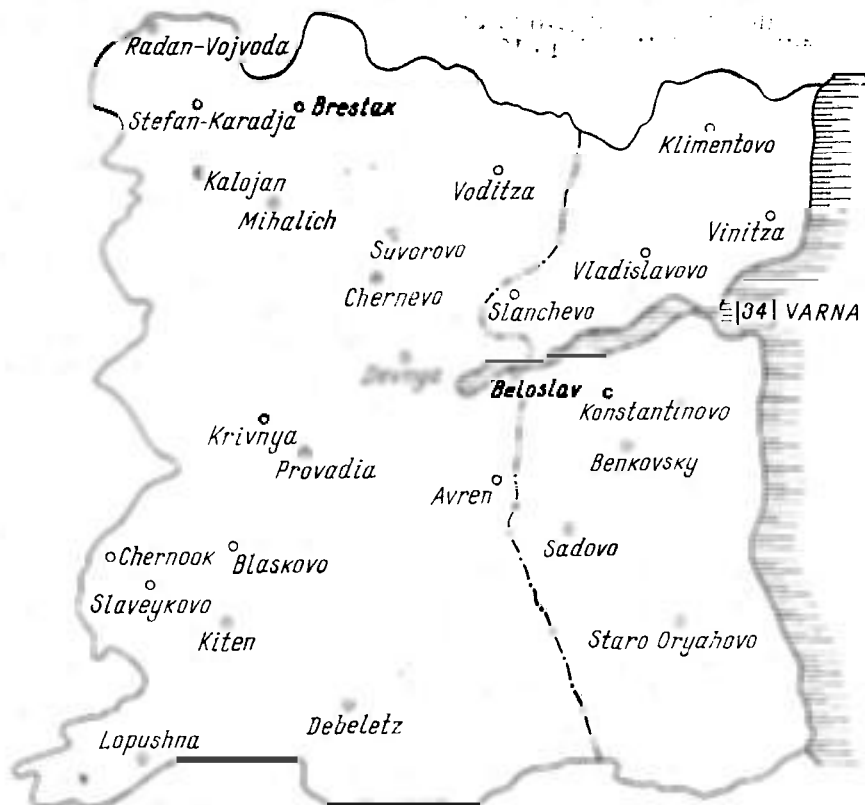


Fig. 1

gated. Bearing in mind that for the period under review there was only one neurological clinic — the one in the city of Varna — it is accepted that the entire contingent of patients with multiple sclerosis have been comprised in the study, since all of them have been referred to the clinic for treatment and have been repeatedly registered. Hence, it is assumed that the reliability of the diagnoses established and data recovered are quite close to the real ones.

Out of the total number of 62 patients with disseminated sclerosis from Varna and district of Varna, treated in the clinic, 36 are males and 26 —

females. With regard to the approximate onset of the affection, the highest number of patients are in the age ranging from 21 to 40 years (45 patients), whilst not a single case aged 11 to 15 years is recorded. The average age at the first attack is 33.01 years. In the entire district of Varna no cases with disseminated sclerosis, exceeding the 47-year age limit, are observed.

The permanent population in the city of Varna, according to data of the 1968 census, amounts to 206 297. Of them, 34 or 16.5 per 100 000 population are affected with multiple sclerosis. In the remaining part of the district, with population 181 410, the incidence established is 28 cases, or 15.4 per 100 000 of population. Sixty two patients are registered out of the total population of 387 707 in the entire Varna district, which makes 15.9 per 100 000. The mean duration of the follow-up period was as follows: from 10 to 11 years — in 12 patients, 7 to 9 years — 17, 4 to 6 years — 25 and 1 to 3 years — in eight. In the agricultural sea-side regions, comprising the land strip up to 20 km from the sea-coast line, 8 cases are registered among a population of 41 894, or 19 per 100 000. In the remaining part of the district, the incidence established is 20 patients over a population of 139 516, or 14.3 per 100 000. The clinical forms according to localization of the morbid process are the following: cerebrospinal — in 32, spinal — in 21, truncal — in 7 and opticomyelitic — in 2 patients. In all the patients the disease runs a chronic-remittent course.

Discussion

The data from the analysis of the case material with disseminated sclerosis, compared to those in the literature surveyed, show that the morbidity rate in the district of Varna is lower than in countries situated in more northern areas, such as Bielorussia, Litua, Latvia and others, where in some of the far northern regions, it reaches up to 46 per 100 000 of population (27). On the other hand, the morbidity rate of disseminated sclerosis is lower in Israel — 15 per 100 000 population, and in the North African countries (Marocco, Algeria, Syria, Libya and Egypt) — 6 per 100 000 (5). Such data, compared to the figures submitted by Korin and co-workers (1), Kurtzke (14), McCall and co-workers (18) and Upners (27), give us sufficient reason to accept that the climatic factor, respectively, the temperature, plays a definite role in the etiopathogenesis of the affection. On the other hand, compared to some of the larger cities in Europe, U. S. A. and West Australia: Washington (24), New York (24), Boston (12) — see also Table 1 (10, 12, 14) — the morbidity rate in the city of Varna is considerably lower. With a view to the comparatively higher difference in the number of population and incidence of the disease, it appears to be necessary to give due consideration also to the influence of the factors, related to larger cities, such as population density with ensuing greater contact, dust pollution, higher concentrations of carbon oxide and carbon dioxide in the air and of other poisonous gases as well, produced by motor cars and industrial enterprises and sun-light shortage in the homes of the large cities. The factors just listed and some others as well, create conditions favouring allergization

of the organism, respectively of the nervous system of the population in larger cities, with which we could explain also the higher morbidity rate of disseminated sclerosis among them. This is further corroborated by the higher rate of morbidity among the urban population, established herein: 16.5 against 15.4 per 100 000 of population from the rural areas of the Varna district.

Bearing in mind the fact that insofar this country is concerned, the food consumed is practically identical for the urban and rural populations, we could hardly accept that the factor alimentation has a definite practical bearing on the higher incidence established among the urban population.

The difference between the morbidity rate in the sea-side region, determined arbitrarily up to 20 km inland from the sea coast line, and in the remaining part of the district (19 compared to 14.3 per 100 000 of population) is probably due to the more humid climate, especially in the city of Varna, which, along with other factors, creates conditions for the allergization of one part of the population (see the map of the Varna district). Upners and co-workers (27) found out that the morbidity rate of disseminated sclerosis among the population of the Baltic regions is lower than that among the population in localities, distant from the sea, but nearby marsh lands with rather humid and cooler climate.

The results of the analysis reported would have been much more comprehensive if we have had the possibility to carry out a comparative study with other regions in this country. Nevertheless, they provide us with relatively reliable information and estimate of the incidence and widespreading of disseminated sclerosis in the city of Varna and district of Varna.

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О ЧАСТОТЕ И РАСПРОСТРАНЕНИИ ДИСSEМИНИРОВАННОГО СКЛЕРОЗА В ВАРНЕНСКОМ ОКРУГЕ

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РЕЗЮМЕ

Авторами было установлено, что заболеваемость диссемированным склерозом в Варненском округе за период с 1959 по 1969 г. составила 15,9 на 100 тыс. жителей: для г. Варны — 16,5, а для сельскохозяйственных районов — 15,4 на 100 тыс. Сопоставляя заболеваемость диссемированным склерозом в северных и в более южных странах с заболеваемостью в Варненском округе авторы считают, что климатические факторы имеют отношение к этиологии и патогенезу заболевания. По причине более высокой заболеваемости среди населения городского населения по сравнению с сельскохозяйственным они считают, что в городе существует больше факторов, создающих условия для аллергизации жителей больших городов. Установили, что в сельскохозяйственных районах, расположенных не далее 20 км от моря, заболеваемость выше по сравнению с районами вне влияния морского климата.