MORBIDITY OF RHEUMATOID ARTHRITIS

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For many years primary rheumatoid arthritis has been considered a progressive lesion. More recent studies of treatment with ACTH and cortisone have increased the interest taken in this disease, which is sometimes known to stop spontaneously while in an early stage (Hench, 1949).

Hitherto it has not been practicable to establish the incidence of spontaneous arrest with any degree of certainty (Snorrason, 1950). In investigating the morbidity of the lesion, one of our chief difficulties has been to obtain a sufficiently large amount of patient material controlled by the same criteria (preferably by the same examiner) for a long period.

Various studies have been published already, but either the groups of patients were not homogeneous (Fletcher, 1947; Steinbrocker, 1942; Metropolitan, 1931), or the authors concentrated on the relationship between rheumatism and occupation without examining the morbidity of the primary rheumatoid arthritis (Edström, 1934; Snorrason, 1951).

In the Scandinavian countries, useful figures have been furnished by social institutions such as the Invalidity Court (Gram, 1942; Norgaard, 1946), and the National Health Service and practising physicians (Kalbak, 1947; Edström, 1944; Heidemann, 1932; Schelde-Møller and Sylvest, 1946; Snorrason, 1951). Gram (1942) published an account of 1,014 cases from the Invalidity Court, among which he found a

morbidity of 0.67 per thousand in the whole of Denmark for rheumatoid arthritis and chronic arthritis after rheumatic fever. Of these patients 866 were said to be suffering from rheumatoid arthritis, and the morbidity for this disease alone (Table I) was then 0.58 per thousand (corrected) Norgaard (1946), covering the patient material of the Invalidity Court for the year 1944 (a total of 1,932 applications for invalidity pension or sick benefit), found a morbidity of 0.30 per thousand (Table I). The Swedish Ministry of Social Affairs (Højer and others, 1945) gave the number of cases of rheumatoid arthritis notified by all the physicians in Sweden as 16,004. This total included all cases of "chronic peri-arthritis" and some cases of chronic arthritis after rheumatic fever. Thus the morbidity reached the strikingly high level of 2.4 per thousand (Table I).

Material

In the period 1943-1945 one of us (E.S.) had occasion to examine 533 rheumatoid arthritis patients who had been admitted in 1932-41 to the Medical Departments B. and C. of the Municipal Hospital of Bispebjerg (Snorrason, 1950). Morbidity among these recent cases from the entire city of Copenhagen amounted to 1.5 per thousand; of these cases only 0.5 per thousand had not been treated previously (Table I).

From July, 1947, to June 30, 1952, moreover, the same

TABLE I
MORBIDITY OF FIVE GROUPS OF RHEUMATOID ARTHRITIS PATIENTS

Author	Date	No. of Patients	Source of Material	Rate per Thousand					
				Male		Female		Total	
Gram	1942	866	Denmark Public Health Insurance. Members invalidity pensions	0.09		0.49		0.58	
Højer and others	1945	16,004	Population of Sweden (Swedish Ministry of Social Affairs)	1.6		3.3		2.4	
Norgaard.. ..	1945	1,932	Invalidity pensions in county population of Denmark	0.05		0.25		0.3	
Present Investigation ..	1932-41	533	Medical Departments B. and C. of Bispebjerg Hospital, Copenhagen	New	Total	New	Total	New	Total
				0.08	0.25	0.42	1.25	0.5	1.5
		124+54	Valdemarsgade Physiatric Clinic, Copenhagen. Public Health Insurance Members*	0.13	0.19	0.65	0.94	0.78	1.13

* See also Table II.

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TABLE II
NUMBER OF NEW AND OLD (=PREVIOUSLY DIAGNOSED) CASES OF RHEUMATOID ARTHRITIS
AMONG PUBLIC HEALTH INSURANCE PATIENTS

Period of Observation	No. of Health Insurance Members	Sex	Age at First Examination in Public Health Insurance Physiatrie Clinic (yrs)						
			20-29	30-39	40-49	50-59	60-69	70	Total
July 1 to December 31, 1947	29,649	New	M	—	1	—	—	—	1
			F	—	2	2	—	—	6
		Old	M	—	1	1	—	—	3
			F	1	—	—	5	2	8
1948	31,595	New	M	—	—	1	—	—	1
			F	2	2	7	4	2	18
		Old	M	—	—	1	—	—	1
			F	—	—	4	4	1	9
1949	31,595	New	M	—	1	1	—	1	3
			F	1	1	8	7	3	21
		Old	M	—	—	—	2	—	4
			F	1	1	1	2	4	9
1950	32,184	New	M	—	—	—	1	1	2
			F	4	2	6	1	3	17
		Old	M	—	1	1	—	—	2
			F	1	1	—	2	1	5
1951	32,631	New	M	3	—	1	—	—	6
			F	1	11	6	5	4	30
		Old	M	—	2	—	—	—	2
			F	—	—	—	2	4	7
January 1 to June 30, 1952	Not Available	New	M	—	—	—	3	—	3
			F	3	4	4	3	2	16
		Old	M	—	—	—	—	—	—
			F	—	1	—	1	1	4
Total for 5 years		New	M	3	2	3	4	2	16
			F	11	22	33	22	14	108
		Old	M	0	4	3	3	0	12
			F	3	3	5	16	13	42
		All Cases	M	3	6	6	7	2	28
			F	14	25	38	38	27	150

examiner personally investigated all ambulatory "new" (not previously diagnosed) cases referred to the Physiatrie Clinic from a total of about 32,000 Public Health Insurance members. All the physicians who were treating the Public Health Insurance members in this district (Vanløse, Valby, and south-western Copenhagen), knowing that this investigation was being carried out, sent to the clinic all those patients who came into this category, suspected as well as undoubted cases. The distribution of this material by years and age groups is shown in Table II. The morbidity for the early cases was 0.78 per thousand, and the total 1.13 per thousand, presumably because the more severe cases were admitted to hospital, being unsuitable for ambulatory treatment.

The annual incidence of the disease is far from constant, presumably because of variations in the interest with which individual physicians referred such patients to our clinic. This factor may also be responsible for the apparent rise in morbidity towards the end of the period, but may not prove significant on continued observation.

Results

The difference in the morbidity figures for the early diagnosed cases in the Valdemarsgade Clinic and those for the previously untreated cases in the Bispebjerg Hospital affords no actual picture of the "reversibility" of primary rheumatoid arthritis, but is strongly suggestive of the existence of such a phenomenon (Hench,

TABLE III
MORBIDITY FROM RHEUMATOID ARTHRITIS IN EIGHT HEALTH SERVICE DISTRICTS* OF COPENHAGEN
IN RELATION TO NUMBER OF INHABITANTS AND DENSITY OF POPULATION

District*	Population† excluding Children		Density per Hectare		Rheumatoid Arthritis Patients, 1932-41		Incidence of Rheumatoid Arthritis per Thousand	
	M	F	M	F	M	F	M	F
I	48,099	58,397	58	71	12	64	0.25	1.09
II	36,021	45,981	62	79	12	61	0.33	1.11
III	34,950	44,485	122	156	12	64	0.35	1.44
IV	26,867	30,584	99	113	10	51	0.39	1.66
V	34,690	38,473	99	109	10	51	0.26	1.39
VI	26,556	29,036	22	25	6	30	0.23	1.03
VII	51,854	55,769	24	26	18	91	0.35	1.69
VIII	49,322	33,887	76	88	7	34	0.14	0.63
Total	308,359	356,612	—	—	87	446	0.25	1.25

* Health Service districts in Copenhagen.

I: Inner City and Christianshavn;

II: Østerbro (Freeport quarter excluded);

III: Inner Nørrebro;

IV: Outer Nørrebro;

V: Vesterbro;

VI: Valby;

VII: Brønshøj;

VIII: Amagerbro and Sundby.

† On November 5, 1935.

1949; Snorrason, 1950). The idea finds support in an investigation of the distribution of the Bispebjerg patients in the eight health service districts of Copenhagen. Table III shows that during the period 1932-1941, altogether 533 patients suffering from rheumatoid arthritis were admitted to the Medical Departments B. and C. of the Bispebjerg Hospital. These 533 cases made up about one-fourth of the total number of cases of "polyarthritis" admitted to hospital in greater Copenhagen during this period. There is no relation between density of population and total morbidity rate.

It is also evident that the morbidity was equally distributed in all districts, and that the proportional figures for males and females were as generally stated: 1 : 5.

As the distribution of cases appears to be fairly uniform for the eight districts, it seems reasonable to calculate the morbidity on the basis of one Public Health Insurance district with about 32,000 members. This view is further corroborated by the fact that Gram (1942), Norgaard (1946), and Højer and others (1945) found that cases of rheumatoid arthritis were uniformly distributed in rural and urban districts.

Summary

The morbidity of rheumatoid arthritis may be reckoned as about 0.8 per thousand: that is, 3,000 to 4,000 of the 4 to 5 million inhabitants of Denmark are liable to be attacked by this disease each year.

Yet all these cases are progressive, necessitating hospitalization and social care (invalidity pension); in some cases the lesion appears to stop spontaneously. The number of such cases cannot be reckoned conclusively, but further control of the ambulatory patient material here reported (the Valdemarsgade patients) should make this possible. It is planned to re-examine the 124 early diagnosed cases after 5 years.

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Morbidity of the rheumatoid arthritis

RÉSUMÉ

On estime que la morbidité de l'arthrite rhumatoïdale s'élève à 0,8 par mille, c'est à dire que sur les 4.500.000 habitants du Danemark cette maladie en frappe 3 à 4 mille tous les ans.

Pas tous les cas sont évolutifs, impliquant l'hospitalisation et le secours social (pension d'invalidité). Il y en a chez qui la lésion semble se limiter spontanément. On ne peut pas encore présenter le chiffre exact de tels cas, mais on espère l'obtenir en suivant les malades externes mentionnés ici (malades de Valdemarsgade). Pour cela on anticipe le ré-examen au bout de 5 ans des 124 cas reconnus au début.

Morbidez de la artritis reumatoide

SUMARIO

La morbilidad de la artritis reumatoide puede estimarse a cerca de 0,8 por mil, lo que quiere decir que 3 a 4 mil de los 4.500.000 habitantes de Dinamarca contraen esta enfermedad cada año.

No todos los casos son progresivos, necesitando hospitalización y ayuda social (pensión de invalidez). En algunos la lesión parece limitarse espontáneamente. No se puede todavía presentar la cifra exacta de tales casos, pero se espera obtenerla después de seguir a los enfermos ambulatorios mencionados aquí (enfermos de Valdemarsgade). Con este objeto se anticipa el examen ulterior a cabo de 5 años de los 124 casos reconocidos temprano.