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An Epidemiological Survey of Psoriasis in the Greater Helsinki Area

By

M. KÖNÖNEN,[1] J. TORPPA[2] and A. LASSUS[3]

[1]Department of Prosthetic Dentistry, University of Helsinki, and [2]Department of Epidemiology, National Public Health Institute and [3]Department of Dermatology, Helsinki University Central Hospital, Finland

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M. Könönen, Department of Prosthetic Dentistry, University of Helsinki,
Mannerheimintie 172, SF-00280 Helsinki, Finland.

Abstract

A questionnaire survey of all members of the Psoriasis Society of the Greater Helsinki area was carried out during March and April 1984 in order to determine the course of psoriasis. 1517 (85.4%) of the members responded; 1050 of them had psoriasis with skin symptoms only (psoriasis; P) and 400 had also joint symptoms (psoriatic arthritis; PA). In two thirds, the psoriasis had started before the age of 30 years. Skin lesions were more frequent in the PA-group than in the P-group, and more severe in men than in women in both groups. Of the 400 with PA, about 70% had moderate to very severe discomfort in their joints. Most of the patients had experienced their first joint symptoms at the age of 20 to 49 years. In the majority of the patients with PA the skin symptoms begun before the joint symptoms; in 7% the joint symptoms had preceded the skin symptoms; and in 10% both symptoms had begun simultaneously. *Key words: psoriatic arthritis; questionnaire; occurrence.*

Introduction

Psoriasis is one of the most common skin diseases worldwide. There are variations in its prevalence between different races and geographic regions (1). The frequency of psoriasis is estimated to be two percent in the Nordic countries (2, 3), i.e. in Finland the estimated number of psoriatics is about 100000. However, there have been few large population studies regarding the prevalence of psoriasis. Two population studies (2, 4) and one comprehensive questionnaire/clinical investigation (3) have been conducted in Scandinavia. Two extensive questionnaire surveys have been carried out in the United States (5, 6). However, there is still a lack of information on the course of psoriasis (1). The present study is the first epidemiological survey of psoriasis in Finland.

The aim of the present study was to assess with the aid of a questionnaire the course of the disease in a psoriasis population in the Greater Helsinki area in relation to sex, age and seasonal variations.

Material and Methods

The investigation was carried out during March and April 1984 on all members of the Psoriasis Society of the Greater Helsinki area (1863 members in 1983). The Society is active in 9 towns and 11 rural communities. The population of these is about 20% of the total population of Finland.

A questionnaire was sent to each member together with a request that within a week it be completed and returned in a stamped and addressed envelope enclosed with the questionnaire. Those who did not return the questionnaire within three weeks were sent a letter of reminder. After six weeks, a reminding letter and a new questionnaire were sent to all those who had not returned the questionnaire and also to those who had not

completed it properly. The questionnaire which was answered by encircling the most suitable alternative (most of the questions) or by placing x:s in the appropriate spaces (some of the questions), included demographic questions and questions regarding the course of psoriasis, with special reference to symptoms and signs of arthritis. Special care was taken to formulate the questions so as to be easily understood by the laymen. After rejection of those who, one reason or another, were deemed not to belong in the sample (76 supporting members, 4 members abroad and 7 dead) 1 776 patients remained. 1 517 of these (85.4%) responded. The reasons for lack of response were as follows: in 29 cases (1.6%) the address was unknown, 5 (0.3%) persons were very ill, and in 13 cases (0.7%) the questionnaire was inadequately filled out. In 212 cases (12%) it was not possible to trace the reason for lack of response. The first and second reminding letters produced 142 and 288 replies, respectively. The distribution and representation of the sample, compared with the total population, are shown in Table I.

Since we were interested both in psoriatics with skin symptoms only (P) and in psoriatics with both skin and joint symptoms (PA), those who replied that they had joint symptoms not caused by psoriasis were excluded. The final survey groups, P (n=1 050) and PA (n=400), are presented in Table II.

The estimation of the severity of skin symptoms was based on the sites of the skin lesions. The scale used was: Mild = lesions in head and extremities; Moderate = lesions in head, extremities and trunk; and Severe = lesions in head, extremities, trunk, hands and feet.

Table I. *Distribution of the sample and the population in the Greater Helsinki area with regard to background variables (1983 sample: n=1 517; 1983 population: n=1 033 400)*

	% sample 1983	% population 1983
Sex		
Men	43	47
Women	57	53
Age (years)		
–14	2	19
15–24	6	14
25–34	21	19
35–49	33	23
50–64	25	14
65–	13	11
Domicile		
Rural area	9	14
Towns <100 000	8	11
Towns >100 000	83	75
Socio-economic status		
Employers and self-employed	2	4
Upper- and lower-level employed	53	41
Workers	23	27
Pensioners	13	15
Students	5	7
Not known	4	5
Education		
Elementary school	52	64
Secondary school	23	19
Matriculation examination	25	17

The significance of the differences between different groups was analyzed using the chi-square test. The levels of statistical significance used were: *** $p<0.001$; ** $0.001<p<0.01$; * $0.01<p\leq0.05$; NS = not significant $p>0.5$.

Results

Forty-three percent of the total sample were men and 57% were women. There was no statistically significant difference in the sex distribution between the P-group and the PA-group (Table II).

Patients with P were younger (the mean age of the men was 44.5 and of the women 41.9 years) than patients with PA (the mean age of the men was 48.6 and of the women 51.4 years) (Table III).

The mean age at onset of the skin disease was 25.5 years for patients with P and 28.4 years for patients with PA. In both the P-group and the PA-group women had an earlier onset ($p<0.001$ and $p<0.001$, respectively; Fig. 1). In about 70% of the patients with P and in about 60% of patients with PA the skin symptoms had started before the age of 30 years. The duration of psoriasis had been longer in the PA-group (mean 21.8 years) than in the P-group (mean 17.2 years).

The sites of the skin lesions and their severity at the time of the investigation as related

Table II. *Percentage distribution of sex, civil and socio-economic status, domicile and education in the psoriasis (P) group and the psoriatic arthritis (PA) group*

	P ($n=1\,050$)	PA ($n=400$)	Total ($n=1\,450$)	p
Sex				NS
Men	45	40	44	
Women	55	60	56	
Civil status				**
Unmarried	21	13	19	
Married	62	63	62	
Divorced	11	15	13	
Widow or widower	6	9	6	
Domicile				NS
Rural area	9	8	9	
Towns <100 000	9	8	8	
Towns >100 000	82	84	83	
Socio-economic status				***
Employers and self-employed	2	2	2	
Upper-level employees	20	15	19	
Lower-level employees	36	33	35	
Workers	23	22	23	
Pensioners	11	21	13	
Students	5	2	4	
Not known	3	5	4	
Education				**
Elementary school	49	56	51	
Secondary school	22	25	23	
Matriculation examination	29	19	25	

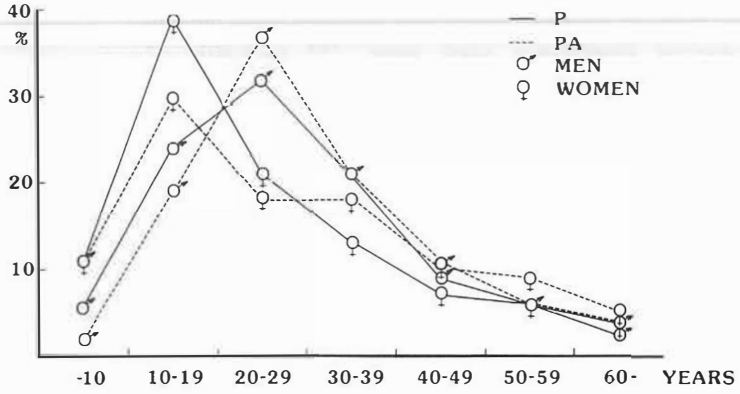


Fig. 1. Age at onset of skin symptoms in the P-group (n=1 050) and the PA-group (n=400) according to sex. Significant difference between men and women in both the P-group ($p<0.001$) and the PA-group ($p<0.001$).

to sex are shown in Table IV and Fig. 2, respectively. All six sites seemed to be more frequently and more severely affected in patients with PA. In both groups, as reported by the patient all six sites were significantly more frequently affected and the lesions were more severe in men than in women. In both groups, the scalp was the most frequently affected site, followed by the upper and the lower extremities and the trunk. Hands and feet were involved to a lesser extent (Table IV). Sixty percent of the patients with PA and 40% of the patients with P had nail disorders. This difference was statistically significant, as was the difference of the frequency of nail changes between men and women in both groups. Only 2% of the patients with P and 1% of the patients with PA reported having neither skin disorders nor nail disorders at the time of the study.

Skin symptoms were reported to be most severe during winter (54% in the P-group and 52% in the PA-group) and spring (18% in the P-group and 17% in the PA-group). Sixteen percent of the patients with P and 23% of the patients with PA reported that skin lesions were most severe during two or more seasons. Only a minority (2% in the P-group and 1% in the PA-group) reported that the summer season was the worst period of the year.

The great majority of the patients, 82% in the P-group and 84% in the PA-group, had never experienced any remission of all the skin symptoms, or had experienced remission for only half a year or less. Seven percent in each group reported a remission of half a year to two years, 2% a remission of two to five years and 2% over five years.

Table III. *Percentage distribution of age in the psoriasis (P) group and the psoriatic arthritis (PA) group according to sex*

Age group	P[a] (n=1 050)			PA[b] (n=400)		
	Men	Women	Total	Men	Women	Total
–14	3	2	2	1	0	0
15–24	4	10	7	1	2	2
25–34	19	28	24	14	15	15
35–49	38	32	35	35	27	30
50–64	25	17	21	38	33	35
65–	11	11	11	11	23	18

[a] Significant difference between men and women ($p<0.001$).
[b] Significant difference between men and women ($p<0.05$).

Table IV. *Skin symptoms and nail disorders in the psoriasis (P) group and psoriatic arthritis (PA) group*
Percentage distribution according to sex

Sites of psoriasis	P (n=1 050)				PA (n=400)				P/PA
	Men	Women	Total	p	Men	Women	Total	p	p
Head	86	75	80	***	89	81	84	*	NS
Trunk	72	51	60	***	78	64	69	**	**
Upper extremities	79	74	76	NS	82	75	78	NS	NS
Lower extremities	72	64	68	**	78	64	70	**	NS
Hands	40	24	32	***	49	34	40	**	**
Feet	31	20	25	***	37	30	33	NS	**
Nails	47	34	40	***	67	55	60	*	***
No skin or nail disorders	1	2	2	NS	1	2	1	NS	NS

Joints affected by PA are shown i Table V. The joints most frequently affected were the interphalangeal joints of the fingers (71%), followed by the joints of knees, wrists and ankles and the interphalangeal joints of the toes. In addition, neck, shoulders and hips, spine, elbows, and jaw were affected in descending order. The jaw joint was involved in 21% of the patients. No differences between the sexes were found in the involvement of joints, except for the hips. The numbers of joints involved were 1–2, 3–4, 5–6, 7–8 and over 8 in 34%, 26%, 20%, 10% and 9%, respectively. Approximately 45% of the patients had moderate, 20% had slight and 20% had severe discomfort caused by the joint disease (Fig. 3). There were no significant differences between men and women as regards the time of onset of the joint symptoms. Most of the patients (68%) had experienced their first joint symptoms at age 20 to 49 years. The mean duration of the joint symptoms in the PA-group was 10.8 years for the whole group, 10.0 years for men and 11.4 years for women. Joint symptoms were most severe during the winter period (48%), followed by the autumn (12%) and the spring (8%). Sixty-eight percent of the patients had never experienced a

Table V. *The joints affected by psoriatic arthritis (PA, n=400) according to patient's own opinion*
Percentage distribution according to sex

Joints affected	Men	Women	Total	p
Fingers	66	74	71	NS
Toes	37	39	38	NS
Wrists	45	44	44	NS
Ankles	35	41	38	NS
Elbows	20	26	23	NS
Knees	50	57	54	NS
Shoulders	24	32	29	NS
Neck	28	37	33	NS
Spine	22	30	27	NS
Hips	23	33	29	*
Jaw	22	20	21	NS
Others	6	5	6	NS

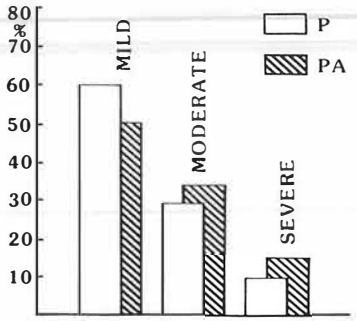


Fig. 2. Percentage distribution of the patients in the P-group (n=1 050) and the PA-group (n=400), according to the severity of psoriatic skin lesions. Scale used: Mild = lesions in the head and extremities; Moderate = lesions in the head, extremities and the trunk; Severe = lesions in the head, extremities, the trunk, hands and feet. Significant difference between the P-group and the PA-group (p<0.001).

remission of the joint symptoms or, reported a remission of less than half a year. Twelve percent of the patients had had a remission of one half to two years, 4% of two to five years and 2% of more than five years. No significant differences between the sexes could be found in the remission rates.

In the majority (83%) of cases the skin symptoms had begun before the joint symptoms, in about 7% the joint symptoms had preceded the skin symptoms and in 10% the skin and joint symptoms had begun simultaneously (Fig. 4).

Discussion

The benefits and limitations of a questionnaire survey are well known. The method is accepted as being suitable for collecting large amounts of standardized data.

As the proportions of the demographic variables in the sample were roughly equal to the corresponding proportions in the general population, the sample is likely to represent psoriatics in the whole population. However, one weakness of the series is its selectivity, since patients with a more severe disease are more prone to join patients' associations. Patients who regarded their joint disease as being caused by osteoarthrosis or rheumatoid arthritis were excluded from the sample. However, it is evident that not all of those who reported that their joint symptoms were associated with psoriasis actually had psoriatic arthritis. Because psoriasis usually causes no diagnostic problems and because the patients of the present series had joined the Society after consulting a dermatologist, there is



Fig. 3. The severity of joint symptoms in psoriatic arthritis (PA, n=400) according to patient's own estimation. Percentage distribution according to sex. Scale used: 1. None or minimal discomfort; 2. Slight discomfort; 3. Moderate discomfort; 4. Severe discomfort; 5. Very severe discomfort. No significant difference between men and women.

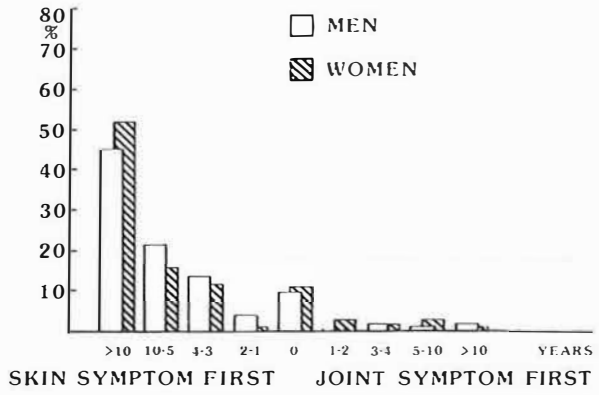


Fig. 4. The onset of skin symptoms in relation to the onset of joint symptoms in psoriatic arthritis (PA). Percentage distribution according to sex. Simultaneous onset is indicated by 0.

good reason to believe that those who reported that they had psoriasis really had the disease.

In order to minimize the effect of seasonal variations on the results, the survey was conducted during two late winter months. Considering the shortness of the survey period, the response rate of 85.4% can be regarded as very satisfactory. The response rate was similar to the corresponding rates in other questionnaire surveys of psoriasis, for example in Molin's study (1973) the rate was 81%. Regarding the majority of those, as often men as women, who did not respond the reason could not be traced, but more than one third were about the age of 65, as often men as women, living in towns of over 100 000 inhabitants. It is a well-known fact that people in the Greater Helsinki area, especially in large cities, are more reluctant to take part in investigations than are people in other parts of Finland (7). There may also have been several other, incidental reasons, why some of the patients did not respond. The sex distribution of the patients corroborates the current opinion that psoriasis affects men and women equally often (1). The patients' age at the time of the study was higher in the PA-group than in the P-group; this is natural, because the joint involvement in most cases begins later than the skin symptoms. The age also reflected the small differences found in the distribution of demographic variables between the P-group and the PA-group. Only the sites of skin lesions at the time of the study were asked about. As a rule there is a change during the course of the disease towards a higher frequency of psoriatic lesions on the lower extremities, upper extremities, and trunk, there being fewer lesions on the scalp and elbows, and fewest on the knees and face (1). This finding also made in the present study, but the scalp was the most frequently involved site both in patients with P (80%) and in those with PA (84%). In the present study all skin sites were involved more frequently than in several other studies (1, 4, 5, 6), which may indicate that the patients had joined the Society because they had a more severe form of the disease. This presumption is further supported by the fact that only 2% reported being in complete remission at the time of the study. However, the most important reason for the high number of sites involved may be the season of the study, i.e. about 70% of the patients in both groups reported that their skin symptoms were most severe at this time of the year. That cold weather aggravates and warm weather alleviates psoriasis applies to the present series, but the relatively high number of those for whom the season was irrelevant further indicates that the members of the Psoriasis Society had quite severe psoriasis. Furthermore, 82% of the P-group and 84% of the PA-group had experienced no complete remission, or a remission of only less than half a year, and only 2% reported symptomfree periods exceeding five years.

One fourth of the patients had joint symptoms; this is in agreement with the figures reported by Farber et al. (1968). The sex ratio (1 : 1.5) was also equal in the two studies. The proportion of arthritis patients was largest (35 %) in the 50 to 64 age group, whereas in the survey made by Farber et al. (1968) 32 % were 50 to 59 years old. The majority (83 %) of the patients in the PA-group were 35 years old or older and it should be borne in mind that the most common type of arthritis in individuals over 40 years of age is osteoarthrosis. On the other hand, 68 % of the patients reported that their joint symptoms had begun at an age between 20 and 49 years. As a rule, psoriatic arthritis is not so severe as rheumatoid arthritis (8), and as shown in Fig. 2, the majority of the patients (65 %) felt that their joint symptoms were slight or moderate. It is noteworthy that one fifth had had remission of the joint symptoms, but only 6 % for a period longer than two years.

As regards simultaneous onset of skin and joint symptoms in patients with PA, the results in the present study were roughly the same as in earlier studies, but in the present study the skin symptoms started more often prior to the joint symptoms (5).

The results of this Finnish survey are comparable with those of similar studies carried out in Scandinavia and elsewhere. However, climatic and racial factors, which significantly influence the course of the disease, are of great importance in the comparison of epidemiological findings in studies carried out in different regions of the world. In this sense, the present study is in fact closely comparable only with studies performed in Scandinavia.

Acknowledgement

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