

References

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Family history of psoriasis and age at disease onset in Italian patients with psoriasis

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SIR, Familial occurrence of psoriasis has long been recognized. Frequencies of a family history of psoriasis range from 2.0% to 91.0%, with the variation probably due to differences in patient selection and methods used to assess the family history.^{1,2} A family history of psoriasis has been associated with early-onset psoriasis, the presence of HLA-Cw*0602 and a more unstable and severe clinical course compared with patients with late-onset psoriasis.^{3–5}

The aim of our study was to describe the distribution of frequency, by age groups, of familial occurrence of psoriasis in an Italian population and to analyse its relationship with age at disease onset.

From December 2004 to January 2006, 1420 patients with psoriasis, attending 21 Departments of Dermatology in northern, central and southern Italy, were invited to participate in this study. The estimate of sample size was performed using the following parameters: sample error $E = 0.026$, the event occurrence proportion $P = 0.5$ (in the case of maximum vari-

ability), probability $1 - \alpha = 0.95$. Approximately 3% of the subjects refused to be interviewed.

Patients were asked to complete a standardized questionnaire on demographic variables (gender, age, province of residence), age at onset of psoriasis (defined as age at the first visit to a dermatologist for psoriasis) and family history. The questionnaire was completed independently by the patients or by their parents, in the case of children.

The frequency of family history of psoriasis related to age at onset of the disease was evaluated using the Cochran–Mantel–Haenszel χ^2 trend test. Continuous variables were compared using Student's *t*-test. $P < 0.05$ was considered statistically significant. SAS software was used for the statistical analyses.⁶

The 1376 patients (692 males and 684 females; age range 1–85 years) recruited in the study completed all questionnaire items. Males had a mean \pm SD age of 47.0 ± 14.8 years and females 42.2 ± 15.0 years. The mean \pm SD age at disease onset was 33.6 ± 17.1 years for males and 33.4 ± 15.8 years for females.

A positive family history of psoriasis was reported by 632 patients (45.9%), with a 74.5% frequency in first-degree relatives. The distribution of frequency of family occurrence according to age group at disease onset is illustrated in Table 1. As the age at onset increased, the frequency of family history of psoriasis decreased ($P < 0.0001$).

Frequency of paternal family occurrence was higher in the group with age at disease onset < 20 years compared with the other age groups and decreased linearly with increasing age at disease onset ($P < 0.0001$). By contrast, maternal family occurrence was higher in the age group 20–29 years as compared with the other age groups, showing a decrease in older age groups ($P = 0.002$) (Table 1).

Patients were stratified into two groups based on age at disease onset: ≤ 30 years ($n = 676$) and > 30 years ($n = 700$). As shown in Table 2, paternal occurrence tended to have an effect on the age at disease onset for patients both with onset ≤ 30 years ($P = 0.008$) and with onset > 30 years ($P = 0.002$). No such influence was observed for maternal occurrence or for occurrence of psoriasis in second-degree relatives.

Three hundred and forty-one males and 335 females had disease onset at ≤ 30 years, with mean \pm SD ages of 20.6 ± 6.6 and 19.1 ± 8.7 years, respectively ($P = 0.01$). Patients with disease onset at > 30 years comprised 351 males,

Table 1 Relationship between age groups at onset of psoriasis and a family occurrence of the disease

| Family history | No. of cases (%) by age group (years) at disease onset | | | | | | χ^2 trend test P-value |
|----------------------------|--|------------|------------|-----------|-----------|-----------|--------------------------------|
| | < 20 | 20–29 | 30–39 | 40–49 | 50–59 | ≥ 60 | |
| Any relative | 168 (26.6) | 187 (29.6) | 127 (20.1) | 72 (11.4) | 56 (8.9) | 22 (3.4) | < 0.0001 |
| Father | 61 (31.3) | 56 (28.9) | 33 (17.1) | 24 (12.4) | 16 (8.2) | 4 (2.1) | < 0.0001 |
| Mother | 33 (27.7) | 37 (31.1) | 20 (16.8) | 17 (14.3) | 9 (7.6) | 3 (2.5) | 0.002 |
| Brother | 17 (17.9) | 31 (32.6) | 28 (29.5) | 6 (6.3) | 10 (10.5) | 3 (3.2) | 0.12 |
| Sister | 14 (22.2) | 10 (15.9) | 13 (20.6) | 9 (14.3) | 13 (20.6) | 4 (6.4) | 0.24 |
| Any first-degree relative | 125 (26.5) | 134 (28.4) | 94 (20.0) | 56 (11.9) | 48 (10.2) | 14 (3.0) | < 0.0001 |
| Any second-degree relative | 43 (26.7) | 53 (32.9) | 33 (20.5) | 16 (9.9) | 8 (5.0) | 8 (5.0) | < 0.0001 |

Table 2 Effect of family history of psoriasis on age at disease onset, stratified by age group

| Family occurrence | Age group (years) | Positive family history (n = 632) | | Negative family history (n = 744) | | t-test P-value |
|------------------------|-------------------|-----------------------------------|--------------------------------------|-----------------------------------|--------------------------------------|----------------|
| | | No. of cases | Age at disease onset (mean \pm SD) | No. of cases | Age at disease onset (mean \pm SD) | |
| Father | ≤ 30 | 121 | 18.6 \pm 10.8 | 555 | 20.3 \pm 6.8 | 0.008 |
| | > 30 | 73 | 43.0 \pm 9.6 | 627 | 46.7 \pm 11.8 | 0.002 |
| Mother | ≤ 30 | 71 | 19.5 \pm 6.2 | 605 | 20.0 \pm 7.1 | 0.58 |
| | > 30 | 48 | 44.0 \pm 9.8 | 652 | 46.7 \pm 11.9 | 0.06 |
| Second-degree relative | ≤ 30 | 101 | 20.4 \pm 7.1 | 575 | 19.7 \pm 7.8 | 0.40 |
| | > 30 | 60 | 44.0 \pm 11.5 | 640 | 46.8 \pm 11.8 | 0.08 |

with a mean \pm SD age at disease onset of 46.0 \pm 11.6 years, and 349 females, with a mean \pm SD age at disease onset of 47.1 \pm 11.9 years. The difference between males and females in age at disease onset was significant for patients with disease onset at ≤ 30 years ($P = 0.01$) with an earlier onset of psoriasis in females. No gender difference was observed for patients with disease onset at > 30 years.

In our study population, a family history of psoriasis was reported by 45.9% of patients, with the highest frequency in the group of patients with disease onset ≤ 30 years, consistent with previous reports.^{3,4} We also found the frequency of family history of psoriasis to be inversely related to age at onset, with a progressive decrease in frequency with increasing age at disease onset, as suggested in an earlier study.⁴

Diversity in the average age at onset of psoriasis has been reported, probably as a result of the different prevalences of genetic and environmental triggering factors.^{1,4,7-9} In our series, a significant gender difference in mean age at onset was found in patients with disease onset at ≤ 30 years, confirming previous studies that showed a significantly earlier age at onset for females.^{1,3,4}

In addition, our data strongly suggest that paternal occurrence of psoriasis tends to be associated with an earlier age at onset of psoriasis. This finding is in line with an earlier study showing a significant reduction in age at onset when the disease was inherited from the father.¹⁰

In conclusion, a family occurrence of psoriasis is more frequent in Italian patients with disease onset ≤ 30 years and a significantly earlier age at disease onset is detected when a history of paternal psoriasis is present.

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