Prevalence of Actinic Keratoses and Associated Factors in a Representative Sample of the Italian Adult Population

Results From the Prevalence of Actinic Keratoses Italian Study, 2003-2004

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Objective: The Prevalence of Actinic Keratoses Italian Study (PraKtis) was designed to estimate the point prevalence of actinic keratoses (AKs) and associated factors in a representative sample of the Italian adult population.

Design: A representative sample of people 45 years or older was selected from the electoral rolls according to a stratified random sampling design.

Setting: A total of 180 specifically trained interviewers contacted the sampled subjects and conducted face-to-face, computer-assisted interviews and skin assessments.

Participants: A total of 12,483 subjects contacted and interviewed from March 1, 2003, through April 30, 2004.

Main Outcome Measures: History of AKs and evidence of AKs at the interview.

Results: Overall, an estimated 34% of the Italian population reported ever having undergone a dermatological examination. A history of AKs was reported by 0.3% of the total sample. Topical therapy was the most popular treatment according to 39% of subjects, whereas 25% reported that they did not receive therapy. Based on the interviewer’s judgment, the point prevalence of AKs was 1.4% (95% confidence interval, 1.2%-1.8%). Forty-two percent of people with AKs were unaware of their condition. The prevalence was higher among men than women and increased steadily with age. The prevalence increased with lighter phenotype and with more severe facial wrinkling. It also increased with the reported number of hours spent in the sun during the week and on holidays. No clear variation was observed according to the reported use of sunscreens. Lesions were usually multiple (median number, 4). There was a strong association between a history of nonmelanoma skin cancers and the presence of AKs (odds ratio, 4.5; 95% confidence interval, 1.8-11.0).

Conclusions: The prevalence of AKs in our study was remarkably lower than expected based on data from the United States and Australia; in Italy, AKs seem to be underdiagnosed and undertreated.

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CTINIC KERATOSES (AKs) ARE skin lesions, especially common in fair-complexioned people living in sunny climates, which have been strongly associated with the risk of both basal cell carcinoma and squamous cell carcinoma and are considered to be precursors (or even an early form) of invasive squamous cell carcinoma. In spite of being common, only limited data on the epidemiology of AKs derived from country-based surveys are available. Moreover, most studies have been conducted in Australia or the United States, with scanty data from most European countries. The Prevalence of Actinic Keratoses Italian Study (PraKtis) was designed to estimate the point prevalence of AKs in the Italian adult population; assess variations according to age, sex, sociodemographic variables and environmental exposures; and describe treatment modalities.

METHODS

A representative sample of people 45 years or older was selected according to a stratified random sampling design. Subjects were subsequently visited at their homes, where a face-to-face, computer-assisted personal interview and skin examination were conducted.

SAMPLING PROCEDURE

The sampling procedure was envisaged in collaboration with Doxa, the Italian branch of the Gallup International Association. The universe, or statistical population, to which the survey refers to was made up of all Italian adults,
men and women 45 years or older. It was estimated that this universe was composed of about 24.8 million people (about 11.3 million men and 13.5 million women). The universe was subdivided into sections, or strata, according to 2 characteristics: region and size of community. The number of interviews to be carried out in each stratum was set in proportion to the distribution of the population of the strata in the area. Within each stratum the sampling units (communities, districts of communities, and individuals) were chosen in the following way:

Stage 1: The choice concerned the communities or municipalities (sampling points where the interviews were to be conducted).

Stage 2: In each municipality, an adequate number of electoral wards were extracted at random so that the various types of inhabited areas of the community were represented in the right proportions.

Stage 3: The names and addresses of the persons to be interviewed were extracted at random from the electoral lists of the wards selected in the second stage.

This method is known as a proportional stratified sample. We adopted a sampling with replacement procedure.

ASSESSMENT AND DATA COLLECTION

Specifically trained interviewers contacted the sampled subjects and, after obtaining informed consent, conducted a face-to-face interview at the subject's house using a computer-assisted personal interviewing technique. The following set of information was collected: age; sex; occupation; smoking habits; skin, hair, and eye colors; degree of facial wrinkling; number and distribution of suspected AKs on the face and upper limbs; previous diagnoses and/or treatment for AKs (with number, location, and modality of treatment); and previous diagnoses of selected dermatological diseases. Skin color was evaluated using a 3-grade scale (light, medium, and dark) based on the examiner’s judgment and comparison with representative sample photographs. Judgment on hair color was made on a photonumeric scale. A photonic scale was used to assess facial wrinkling, graded from 0 (none) to 8 (severe). Actinic keratoses were evaluated with the help of a photographic atlas after appropriate training (described in the next subsection). Photographs of suspicious lesions were taken for further review by an expert panel. To improve compliance, educational materials on skin care were offered.

INTERVIEWERS’ TRAINING SESSIONS

From February 1 through February 28, 2003, a total of 180 interviewers were trained. Training sessions were conducted in the 10 Italian dermatological (PraKits) centers collaborating in the study. A detailed presentation of the clinical features of AKs and other common discrete skin lesions (e.g., seborrheic keratoses and solar lentigo) were presented in a 2-hour teaching session. Using a specifically developed photographic atlas, interviewers also conducted practical exercises with a sample of subjects with and without selected AKs and other common discrete skin lesions (eg, seborrheic keratoses and solar lentigo) were presented in a 2-hour teaching session. Using a specifically developed photographic atlas, interviewers also conducted practical exercises with a sample of subjects with and without selected AKs and other common discrete skin lesions (eg, seborrheic keratoses and solar lentigo) were presented in a 2-hour teaching session.
4. A history of nonmelanoma skin cancers was reported by 0.6% of the whole sample. There was a strong association between such a history and the presence of AKs as judged by the interviewer; the age- and sex-adjusted odds ratio was 4.5 (95% CI, 1.8-11.0).

Our study provides information about the prevalence of AKs in Italy. The study involved a complex proportional stratified sampling design, and our estimates are deemed to be representative of the whole Italian adult population (≥45 years). The prevalence in our study was remarkably lower than estimates obtained in other countries, such as the United States and Australia.² It should be noted that most of the available studies covered limited areas. The only study that was countrywide and relied on a sampling design similar to ours is the NHANES I study conducted in the United States. The point prevalence for AKs in that study ranged from 15.9 per 1000 at ages 45 to 54 years to 65.1 per 1000 at ages 65 to 74 years.³ These figures are roughly 3 time higher than ours. To the best of our knowledge, only 3 studies provide estimates from European countries. In a study conducted in south Wales, involving 1034 subjects 60 years or older, the prevalence of AKs was 23% (95% CI, 19.5%-26.5%). In a study conducted in the Mersey region in northwest England of people older than 40 years (531 men and 437 women 45 years). The prevalence in our study was re-
women) treated at outpatient (nondermatology) clinics, the prevalence of AKs was 15.4% in men and 5.9% in women. In another study, conducted in the community of Freixo de Espada à Cinta in northeast Portugal, AKs were identified in 9.6% of subjects, and no relation was documented between skin phenotype and AKs. Interestingly, AKs were diagnosed in 3.6% of 190 adults treated at a cancer prevention program in Rome. There are many reasons for the discrepancies between our data and those obtained in other studies. The method used to collect information in our survey may be of concern because we relied on evaluations by interviewers who, even though they had been trained, may have missed or misclassified cases. However, in preliminary exercises, the performance of interviewers in correctly classifying cases of AKs they had been trained, may have missed or misclassified cases.

In conclusion, the prevalence of AKs in Italy was considerably lower than the prevalence in the United States and Australia. Age, skin phenotype, and sun exposure were strongly associated with the prevalence of these lesions; they seem to be underdiagnosed and undertreated in our population.

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References