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ORIGINAL RESEARCH

Drug Treatment for Androgenetic Alopecia: First Italian Questionnaire Survey on What Dermatologists Think about Finasteride

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ABSTRACT

Introduction: Treatment with finasteride 1 mg/day represents the therapy of choice for androgenetic alopecia (AGA). We investigated how Italian dermatologists approach use of finasteride for treatment of AGA and common side effects reported by patients.
Methods: A tablet-based survey was conducted from February 2017 to January 2018 in Italy to investigating use of 1 mg/day finasteride in the treatment of AGA. Approximately 1153 Italian dermatologists were surveyed about prescription frequency, therapy duration, treatment practices, and side effects eventually reported.
Results: Dermatologists considered treatment with 1 mg/day finasteride to be the most efficacious treatment for AGA, as reflecting by its long-term (5 years) prescription. Data on sexual side effects from our survey are in line with previous scientific evidence, especially regarding loss of libido, erectile dysfunction, and problems with ejaculation, but also in the psychological sphere and regarding physical impairments such as myalgia and loss of muscle tone.
Conclusions: This is the first preliminary observational study on how Italian dermatologists approach use of finasteride to treat AGA. Although side effects have been reported, especially in the sexual sphere, lack of alternative treatments with the same efficacy leads dermatologists to prescribe 1 mg/day finasteride with a tendency to prolong therapy in the long term.
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Keywords: Androgenetic alopecia; Finasteride; Male pattern baldness; Physical impairment; Psychological-sphere side effects; Sexual side effects

INTRODUCTION

Androgenetic alopecia (AGA) is the most common form of hair loss, affecting both men and women. It is also known as male pattern baldness [1–4] and is considered to be a multifactorial disorder related to both genetic and environmental factors [5].

AGA incidence and prevalence are strictly related to age and sex. Authors reported prevalence of up to 30% in 30-year-old White men, up to 50% in 50 year olds, and 80 and 53% in men and women over 70 years of age [6–9]. Caucasians are the most affected population [10]. AGA typically manifests as progressive

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miniaturization of hair follicles, evolving into conversion of scalp terminal hairs into vellus [11]. This process starts under the androgenic stimulus, especially by dihydrotestosterone (DHT). 5α-Reductase is the enzyme responsible for conversion of the androgen testosterone into the five times more potent androgen, 5α-dihydrotestosterone. Following binding to the receptor, DHT leads to miniaturization and in general a reduction of hair growth rate [12].

Despite the availability of a large number of drug therapies for hair loss, finasteride and minoxidil are currently the only drugs approved by the Food and Drug Administration (FDA). Oral finasteride is a well-studied and widely used inhibitor of 5α-reductase, in particular, the type II isoform that (of the two) is present in the hair follicle [13, 14].

Several published clinical trials have reported efficacy of daily use of oral finasteride at optimal dosage of 1 mg/day for treatment of AGA in male pattern baldness [15–17]. Treatment with finasteride showed greater efficacy in the vertex area, but good results were also found in the frontal and mid-scalp region [18, 19]. Better improvement was noted in patients over 30 years of age or affected by severe-grade AGA, and efficacy is widely sustained during long-term use [20]. Side effects of long-term use of finasteride have also been reported, but in a low percentage (2%) [21–25]. The most common side effects are related to sexual function, such as erectile dysfunction, loss of libido or ejaculation [26, 27]. Some other side effects are related to the psychological sphere and physical impairments [28–30].

We report herein the results of a 1-year open questionnaire-based research study on dermatologists prescribing 1 mg/day finasteride to treat AGA. We based the survey on the guidelines for the management of androgenetic alopecia [31].

The present work aimed to investigate how Italian dermatologists approach use of finasteride for treatment of AGA and common side effects reported by patients.

METHODS

A tablet-based survey was conducted from February 2017 to January 2018 in Italy to investigate how dermatologists approach use of 1 mg/day finasteride in the treatment of AGA.

The survey items were developed in collaboration with a group of dermatologists, urologists, and psychiatrists expert in management of AGA patients and according to the guidelines for the management of androgenetic alopecia edited by the Guidelines Planning Committee for the Management of Androgenetic Alopecia [31]. Approximately 1200 Italian dermatologists were surveyed.

Six questions covering prescription frequency, therapy duration, treatment practices, and side effects eventually reported were asked.

This article does not contain studies with human participants or animals performed by any of the authors.

RESULTS

A total of 1153 dermatologists completed the survey, of whom 51.7% were from Northern Italy and 48.83% were from Central–Southern Italy.

Question 1: In your opinion, is finasteride the most effective oral therapy for treatment of androgenetic alopecia?

Finasteride is the first approved oral pharmacologic therapy for treatment of men with AGA. Several multicenter clinical trials have been conducted in the last 20 years, establishing finasteride as the main and most effective treatment for men with disorders linked to androgen, including AGA.

Ninety-one percent of dermatologists responded “Yes” that they considered 1 mg/day finasteride to be the most effective oral therapy for AGA (Fig. 1). Only 9% of dermatologists responded negatively to the above question, without indicating underlying reasons.

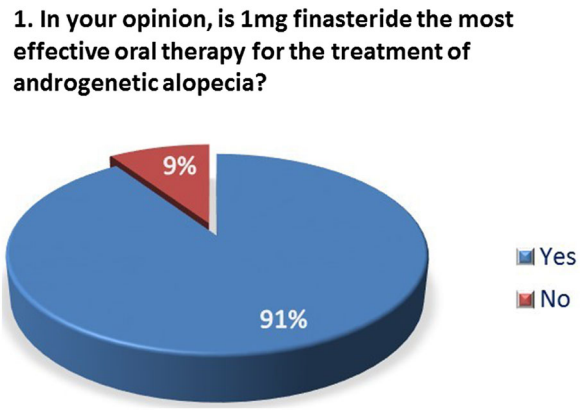

Fig. 1 Survey report on use of 1 mg/day finasteride as main oral treatment in patients affected by AGA

Question 2: Do you commonly prescribe 1 mg finasteride in indicated cases of androgenetic alopecia?

Sixty-nine percent of surveyed dermatologists prescribed 1 mg finasteride to patients affected by AGA (Fig. 2). The dermatologists who replied negatively (31%) (Fig. 2a) were further surveyed about reasons for their negative answer. Of negative answers, 69% were linked to possible occurrence of side effects deriving from finasteride use (Fig. 2b). Nineteen percent of negative answers were linked to considerations about the cost of the treatment, which is considered too high, whereas only 12% of dermatologists did not usually prescribe it because of lack of confidence regarding its efficacy (Fig. 2b).

Question 3: For how long do you consecutively advise your patients to take 1 mg/day finasteride for AGA?

The dermatologists were also asked how long they consecutively recommend taking 1 mg/day finasteride. Possible answers were 6 months, 1 year, 2 years, and 5 years. Thirty-three percent of surveyed dermatologists agreed with long-term (5 years) treatment (Fig. 3). Twenty-seven percent of dermatologist usually prescribed 1 mg/day finasteride for 1 year, consecutively. Twenty-five percent commonly prescribed 1 mg finasteride for 6 months, and only 15% of surveyed dermatologists prescribed 2 years of treatment (Fig. 3).

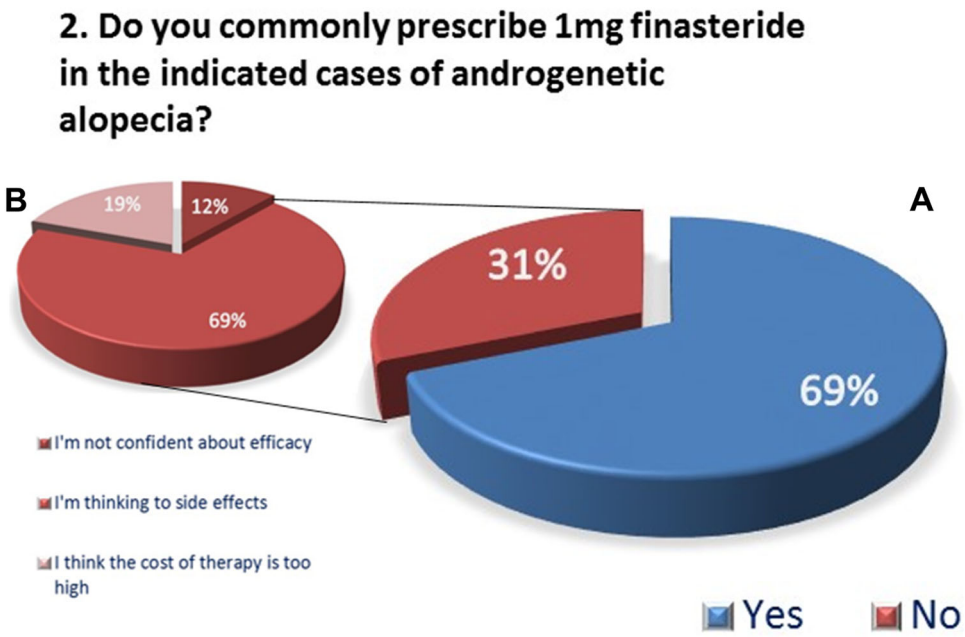

Fig. 2 Survey report on **a** percentage of 1 mg finasteride prescription in patients affected by AGA and **b** explanations behind lack of prescription ("I'm not confident about efficacy," "I'm thinking about side effects," "I think the cost of therapy is too high")

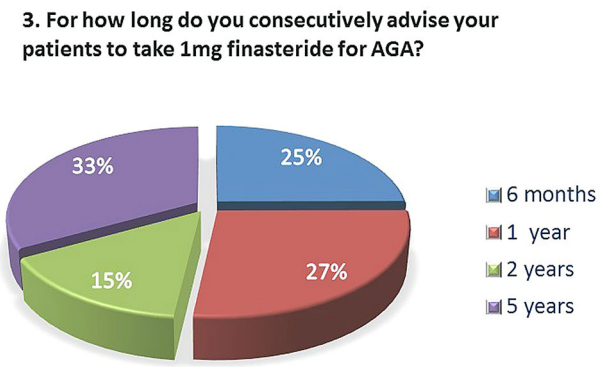

Fig. 3 Survey report about how long dermatologists advise AGA patients to take 1 mg finasteride ("6 months," "1 year," "2 years," "5 years")

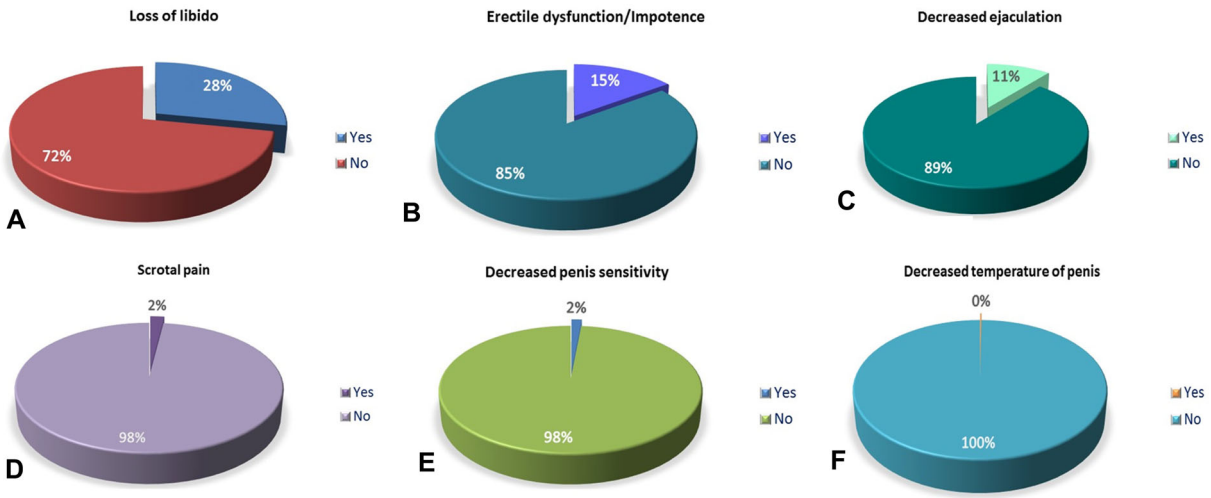

Fig. 4 Survey results regarding reported sexual side effects: **a** loss of libido, **b** erectile dysfunction/impotence, **c** decreased ejaculation, **d** scrotal pain, **e** decreased penis sensitivity, and **f** decreased penis temperature

Question 4: Among patient-reported sexual side effects, to what degree do patients report the following?

Dermatologists were asked to report patient feedback about sexual side effects following treatment with 1 mg/day finasteride. Regarding loss of libido (Fig. 4a), dermatologists reported that 28% of patients reporting sexual side effects reported this side effect. A rather high percentage (15%) of patients also reported erectile dysfunction and, most commonly, impotence (Fig. 4b). Eleven percent of patients also noticed problems with ejaculation (Fig. 4c). Only two percent of patients reporting sexual side effects noticed decreased penis sensitivity (Fig. 4d) or scrotal pain (Fig. 4e). None of the patients reported lower penis temperature (Fig. 4f).

Question 5: Do patients treated with 1 mg/day finasteride report side effects related to the psychological sphere?

Other side effects reported following treatment with finasteride are linked to the psychological sphere, even if there is a lack of published data and evidence is mostly related to self-reports by patients [32]. Only 2% of patients treated by the surveyed dermatologists reported diminished quality of life, and eventually anhedonia (Fig. 5a).

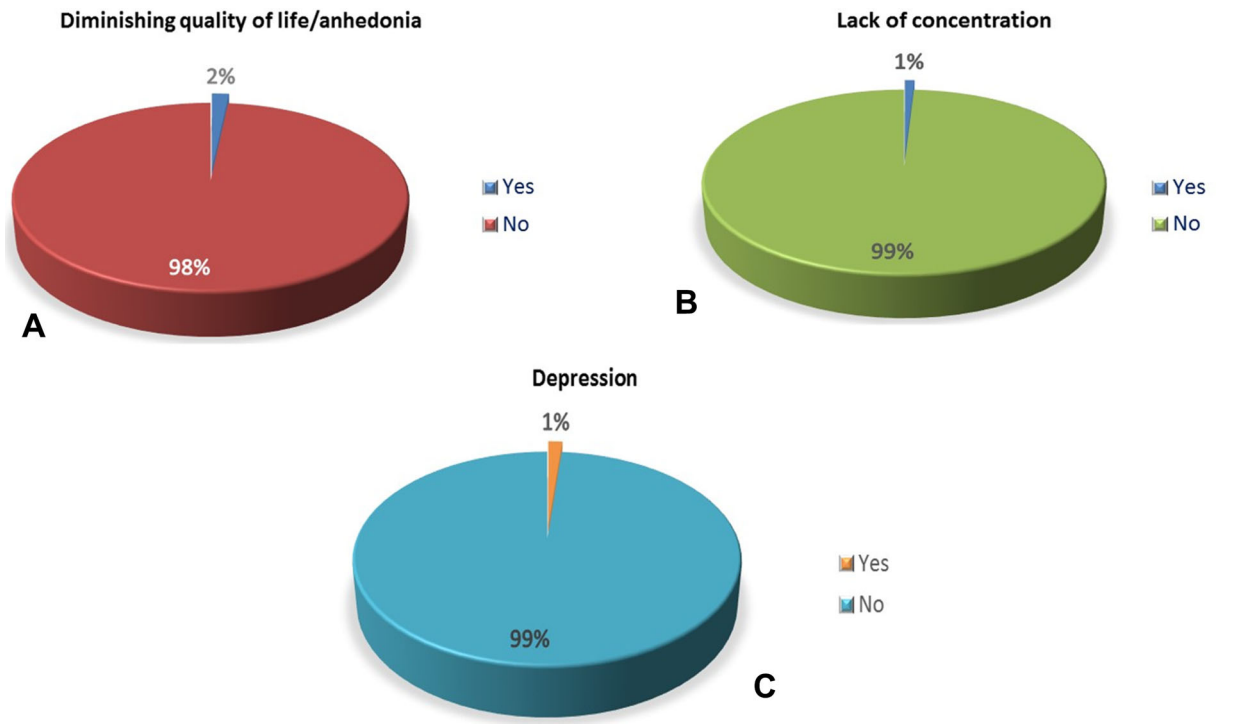

Fig. 5 Survey results regarding side effects reported in the psychological sphere: **a** diminished quality of life, **b** lack of concentration, and **c** depression

Regarding lack of concentration, the surveyed dermatologists reported that only 1% of patients treated with 1 mg/day finasteride reported this side effect (Fig. 5b). Interestingly, only 1% of patients reported depression to their dermatologist as a consequence of finasteride treatment, and in no cases did this result in a tendency to suicide (Fig. 5c).

Question 6: Do patients treated with 1 mg/day finasteride report physical impairments (myalgia and loss of muscle tone)?

Myalgia and loss of muscle tone are other reported side effects [28–30]. These effects are mostly related to long-term use of 1 mg/day finasteride. In accordance with this evidence, surveyed dermatologists were asked about myalgia or eventual loss of muscle tone reported by their patients. Only 1% of them reported myalgia after finasteride treatment (Fig. 6a). Most interestingly, none of the patients reported loss of muscle tone (Fig. 6b).

DISCUSSION

Finasteride is a synthetic 4-azasteroid which acts as a specific competitive inhibitor of 5α-reductase, an intracellular enzyme present in hair follicles with activity strictly related to AGA [33]. It acts by converting testosterone into DHT, leading to hair follicle miniaturization and eventually a reduction of hair growth rate [12], being the typical manifestation of AGA.

Treatment with finasteride 1 mg/day represents the therapy of choice for AGA. Dermatologists surveyed in the present study corroborated this evidence, with 91% answering question 1 affirmatively. These data are very interesting considering that about 1200 Italian dermatologists were surveyed in this study. Therefore, dermatologists' recognition of finasteride as the most efficacious therapy for AGA patients is reflected by its prescription by more than two-thirds of the surveyed dermatologists. The survey results highlight that nonprescription is mostly related to expected side effects,

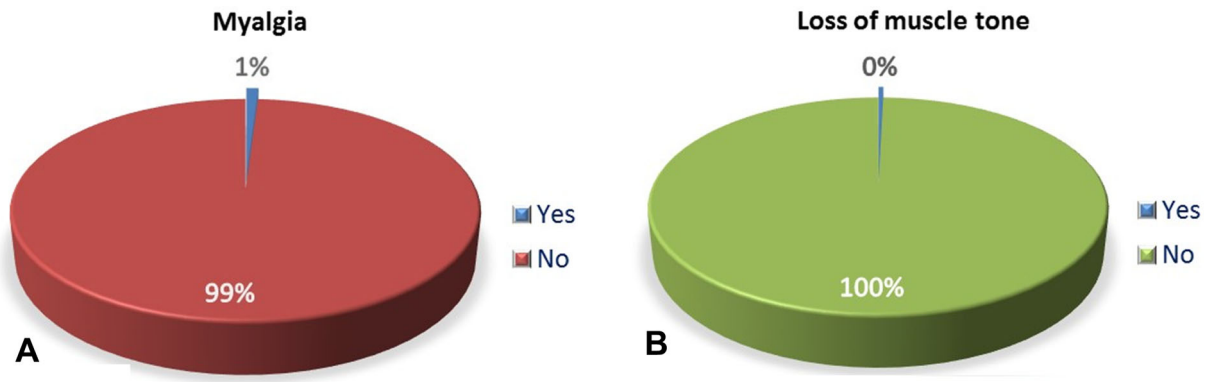

Fig. 6 Survey results regarding physical impairments: **a** myalgia and **b** loss of muscle tone

while treatment cost and doubt regarding its efficacy have a definitely lower impact.

Regarding its prescription, data from the present survey are in line with published evidence reporting that high efficacy is obtained within 6 months and maintained until 5 years [34–36]. The results of the present survey highlight that one-third of Italian dermatologists prescribing 1 mg/day finasteride for AGA are confident regarding long-term (5 years) therapy. More than 50% of dermatologists use finasteride for less than 1 year; probably, long-term adverse effects are a fundamental concern for dermatologists. The results indicate that 2 years of treatment was the least prescribed. Probably, once reaching 2 years of treatment, dermatologists prefer to extend treatment further.

As a 5α-reductase inhibitor, finasteride reduces conversion of testosterone to DHT. The latter is the male sex hormone that regulates sexual development and is also implicated in muscle and brain functions [37, 38].

Theoretically, treatment with finasteride should not be related to sexual health, since its activity will not affect testosterone levels. However, many clinical trials and observational studies have reported some evidence of sexual side effects, mainly in less than 2% of the tested population [26–30]. Since 2011, several, mainly independent studies describing sexual side effects in patients taking finasteride for AGA have been reported [39–47]. In most cases, these were found to be reversible. Also, a nocebo effect regarding causation of ejaculation dysfunction has been reported [48]. Indeed, a large prospective study aimed at investigating the efficacy and side effects of 5 mg finasteride in prostate cancer found only slight, and mainly reversible, induction of sexual dysfunction [25]. Even if data from the above studies are in some cases conflicting, in April 2012, the FDA extended the list of sexual side effects to be reported on the label of finasteride-based drugs.

The data on sexual side effects from our survey are in line with previous scientific evidence, especially regarding the loss of libido, erectile dysfunction, and problems with ejaculation.

This is also true regarding physical impairments such as myalgia and loss of muscle tone. As reported by other authors [28–30] and confirmed by our data, the incidence of these side effects is below 2%.

Most interestingly, our survey highlighted that reported side effects involving the psychological sphere are characterized by low and relatively nonsignificant percentage values. This is very interesting and mostly encouraging evidence, considering that, in 2017, the national agencies for drug safety in France, UK, Germany, Belgium, Denmark, South Korea, and Argentina introduced warnings regarding induced depression and suicidal ideation on finasteride use.

Despite this, in our survey, depression was reported in only 1% of patients treated by the surveyed dermatologists.

Notwithstanding the above-reported and published evidence, the benefits derived from finasteride use in treatment of AGA make the side effects, especially in the sexual sphere, a risk worth taking.

CONCLUSIONS

The survey results confirmed finasteride as the most efficacious treatment for AGA. Italian dermatologists are rather confident regarding use of finasteride, as reflected in its prescription. Even if side effects, especially in the sexual sphere, are reported, due to a lack of alternative treatments with the same efficacy, this does not significantly impact on dermatologists' decisions to prescribe finasteride, with a tendency to prolong therapy in the long term, unless symptoms became incompatible with patient quality of life.

This represents the first preliminary observational study investigating how a significant number of Italian dermatologists approach use of finasteride to treat AGA. More detailed studies are encouraged, including both a larger set of questions, specification of concomitant therapies and comorbidities, and stratification of side effects according to specific variables (e.g., therapy duration).

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Authorship. All named authors meet the International Committee of Medical Journal Editors (ICMJE) criteria for authorship for this manuscript, take responsibility for the integrity of the work as a whole, and have given final approval for the version to be published.

Disclosures. Elisabetta Sorbellini, Daniela Pinto, Barbara Marzani, and Fabio Rinaldi have nothing to disclose.

Compliance with Ethics Guidelines. This article does not contain any studies with human participants or animals performed by any of the authors.

Data Availability. The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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