ORIGINAL RESEARCH—ERECTILE DYSFUNCTION

One Patient Out of Four with Newly Diagnosed Erectile Dysfunction Is a Young Man—Worrisome Picture from the Everyday Clinical Practice

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ABSTRACT

Introduction. Erectile dysfunction (ED) is a common complaint in men over 40 years of age, and prevalence rates increase throughout the aging period. Prevalence and risk factors of ED among young men have been scantly analyzed.

Aim. Assessing sociodemographic and clinical characteristics of young men (defined as ≤40 years) seeking first medical help for new onset ED as their primary sexual disorder.

Methods. Complete sociodemographic and clinical data from 439 consecutive patients were analyzed. Health-significant comorbidities were scored with the Charlson Comorbidity Index (CCI). Patients completed the International Index of Erectile Function (IIEF).

Main Outcome Measure. Descriptive statistics tested sociodemographic and clinical differences between ED patients ≤40 years and >40 years.

Results. New onset ED as the primary disorder was found in 114 (26%) men ≤40 years (mean [standard deviation [SD]] age: 32.4 [6.0]; range: 17–40 years). Patients ≤40 years had a lower rate of comorbid conditions (CCI = 0 in 90.4% vs. 58.3%; χ^2, 39.12; $P < 0.001$), a lower mean body mass index value ($P = 0.005$), and a higher mean circulating total testosterone level ($P = 0.005$) as compared with those >40 years. Younger ED patients more frequently showed habit of cigarette smoking and use of illicit drug, as compared with older men (all $P \leq 0.02$). Premature ejaculation was more comorbid in younger men, whereas Peyronie's disease was prevalent in the older group (all $P = 0.03$). At IIEF, severe ED rates were found in 48.8% younger men and 40% older men, respectively ($P > 0.05$). Similarly, rates of mild, mild-to-moderate, and moderate ED were not significantly different between the two groups.

Conclusions. This exploratory analysis showed that one in four patients seeking first medical help for new onset ED was younger than 40 years. Almost half of the young men suffered from severe ED, with comparable rates in older patients. Overall, younger men differed from older individuals in terms of both clinical and sociodemographic parameters. **Capogrosso P, Colicchia M, Ventimiglia E, Castagna G, Clementi MC, Suardi N, Castiglione F, Briganti A, Cantiello F, Damiano R, Montorsi F, and Salonia A. One patient out of four with newly diagnosed erectile dysfunction is a young man—worrisome picture from the everyday clinical practice. J Sex Med 2013;10:1833–1841.**

Key Words. Erectile Dysfunction; Age; Young; Elderly; Risk Factors; International Index of Erectile Function; Comorbidities; Health Status; Clinical Practice

Introduction

Erectile dysfunction (ED) is a common complaint in men over 40 years of age, and prevalence rates increase throughout the aging period [1]. Most of the manuscripts on the subject of ED usually open with such a statement, irrespective of taking into account any population or race, of any scientific society the study/the researcher belongs to, and of any scientific journal where the manuscripts themselves have been published. In other terms, the older the men get, the more they start dealing with ED [2].

In parallel, ED has gradually acquired an important role as a mirror of men's overall health, assuming major relevance in the cardiovascular field [3–6]. Therefore, it is certain that ED has reached a considerable importance not only in the field of medicine, but even in the field of public health, due to its impact on social aspects of an individual's life. The growing interest for this topic led to the development of numerous surveys about the prevalence and risk factors of ED among different subsets of patients [7,8]; in this context, most of the published data refer to the middle-aged and elderly male population, and more specifically to men above 40 years of age [7–9]. Indeed, aging men, and certainly the elderly, more frequently suffer from comorbid conditions—such as diabetes, obesity, cardiovascular diseases (CVD), and lower urinary tract symptoms (LUTS)—all of which are well-established risk factors for ED [7–12].

Conversely, prevalence and risk factors of ED among young men have been scantly analyzed. Data on this subset of men showed prevalence rates of ED ranging between 2% and nearly 40% in individuals younger than 40 years old [13–16]. Overall, published data stressed the importance of ED in young men, although this specific subset of individuals did not seem to share the same medical risk factors of older men who complain of erectile function impairment [15,16], thus leading to believe that a psychogenic component is much more common in younger patients with disorders of erection or erectile function impairment-related distress [17].

As a whole, almost all studies report a prevalence of ED relative to the general population, and in this sense there is no practical data related to the everyday clinical practice; similarly, no data are clearly available regarding those young patients who actually seek medical help in the clinical setting for a problem related to the quality of their erection. In this direction, we sought to evaluate prevalence and predictors of ED in young men (arbitrarily defined ≤40 years of age) as a part of a cohort of consecutive Caucasian-European patients seeking first medical help for sexual dysfunction at a single academic institution.

Methods

Population

The analyses were based on a cohort of 790 consecutive Caucasian-European sexually active patients seeking first medical help for new onset sexual dysfunction between January 2010 and June 2012 at a single academic outpatient clinic. For the specific purpose of this exploratory study, only data from patients complaining of ED were considered. To this aim, ED was defined as the persistent inability to achieve or maintain an erection sufficient for satisfactory sexual performance [18].

Patients were comprehensively assessed with a detailed medical and sexual history, including sociodemographic data. Health-significant comorbidities were scored with the Charlson Comorbidity Index (CCI) [19] both as a continuous or a categorized variable (i.e., 0 vs. 1 vs. ≥2). We used the *International Classification of Diseases*, 9th revision, Clinical Modification. Measured body mass index (BMI), defined as weight in kilograms by height in square meters, was considered for each patient. For BMI, we used the cutoffs proposed by the National Institutes of Health [20]: normal weight (18.5–24.9), overweight (25.0–29.9), and class ≥1 obesity (≥30.0). Hypertension was defined when antihypertensive medication was taken and/or for high blood pressure (≥140 mm Hg systolic or ≥90 mm Hg diastolic). Hypercholesterolemia was defined when lipid-lowering therapy was taken and/or high-density lipoprotein cholesterol (HDL) cholesterol was <40 mg/dL. Similarly, hypertriglyceridemia was defined when plasma triglycerides were ≥150 mg/dL [21]. National Cholesterol Education Program—Adult Treatment Panel III [21] criteria were retrospectively used to define metabolic syndrome (MeTs) prevalence in the entire cohort of men with ED.

For the specific purpose of this study and to reflect common practice of a clinical biochemistry laboratory, we elected to measure circulating total testosterone (tT) levels by using commercially available analytic methods. Hypogonadism was defined as tT <3 ng/mL [22].

Patients were then stratified according to their relationship status (defined as "stable sexual

relationship" if the patients had had the same partner for six or more consecutive months; otherwise "no stable relationship" or widowhood). Likewise, patients were segregated according to their educational status into a low educational level group (i.e., elementary and secondary school education), a high school degree group, and in men with a high educational level (i.e., university/postgraduate degree).

Moreover, patients were requested to complete the International Index of Erectile Function (IIEF) [23]; to provide a frame of reference for objectively interpreting ED severity, we used the IIEF-erectile function domain classification as proposed by Cappelleri et al. [24].

Literacy problems as well as other reading and writing problems were excluded in all patients.

Data collection was done following the principles outlined in the Declaration of Helsinki; all patients signed an informed consent agreeing to deliver their own anonymous information for future studies.

Main Outcome Measures

The primary end point of the present study was to assess prevalence and predictors of new onset ED in young men seeking their first medical help in the everyday clinical setting, according to the widely used arbitrary cutoff of 40 years of age. The secondary end point was to assess whether overall sexual functioning, as scored with the various IIEF domains, was scored differently in men younger than 40 years of age as compared with older patients.

Statistical Analysis

For the specific purpose of this analysis, patients with new onset ED and seeking first medical help were respectively stratified into men ≤40 years old and individuals >40 years of age. Descriptive statistic was applied to compare clinical and sociodemographic characteristics of the two groups. Data are presented as mean (standard deviation [SD]). The statistical significance of differences in means and proportions were tested with two-tailed *t*-test and the chi-square (χ^2) tests, respectively. Statistical analyses were performed using version 13.0 (IBM Corp., Armonk, NY, USA). All tests were two sided, with a significance level set at 0.05.

Results

New onset ED as the primary disorder was found in 439 patients (55.6%) out of 790 patients. Of them, 114 (25.9%) were ≤40 years old. Table 1 details demographic characteristics and descriptive statistics of the whole cohort of patients with ED, as segregated according to the arbitrary age cutoff of 40 years. In this context, patients ≤40 years of age at the time of their first seeking medical help for ED showed a lower rate of comorbid conditions (as objectively scored with the CCI), a lower mean BMI value, a lower proportion of individuals with BMI suggesting overweight and class ≥1 obesity, a lower rate of hypertension and hypercholesterolemia, and a higher mean circulating tT level as compared with those older than 40 years (all $P \leq 0.02$). Conversely, no differences were observed between groups in terms of rates of hypertriglyceridemia, MetS, and hypogonadism (Table 1). Moreover, younger ED patients showed a higher rate of homosexual sexual orientation and a lower proportion of stable sexual relationships (all $P \leq 0.02$). No significant differences were observed according to the educational status between groups. A significantly higher rate of comorbid premature ejaculation (either lifelong or acquired) was observed in younger patients than in older individuals; conversely, Peyronie's disease was more present in the older group (all $P = 0.03$), while there were no differences in the prevalence of low sexual desire between the two groups (Table 1).

Table 2 lists the drugs taken by the patients of the two groups, segregated by family of drugs. Similarly, Table 2 also details the recreational products reported by patients and subdivided by age group. Older ED patients were more frequently taking antihypertensive medications for each family as well as thiazide diuretics and lipid-lowering drugs as compared with men ≤40 years (all $P \leq 0.02$). Likewise, older patients were more frequently taking also antidiabetics and uricosuric drugs, alpha-blockers for LUTS, and proton pump inhibitors compared with younger men (all $P \leq 0.03$).

No differences were found for any other family of drugs (Table 2).

Younger ED patients more frequently demonstrated a habit of cigarette smoking and use of illicit drugs (both cannabis/marijuana and cocaine) as compared with men older than 40 years (all $P \leq 0.02$). No differences were found in terms of alcohol intake between groups (Table 2).

Table 3 details mean (SD) scores for the five IIEF domains scores; no significant differences were observed for any IIEF domain between younger and older new onset ED patients.

Table 1 Descriptive statistics in ≤40 years old and >40 years old ED patients (No. = 439)

	Patients ≤40 years	Patients >40 years	*P* value*
No. of patients (%)	114 (25.9)	325 (74.1)	
Age (years; mean [SD])	32.4 (6.0)	57.1 (9.7)	<0.001
Range	17–40	41–77	
CCI (No. [%])			<0.001 (χ^2, 39.12)
0	103 (90.4)	189 (58.3)	
1	6 (5.3)	62 (19)	
2+	5 (4.4)	74 (22.7)	
BMI (kg/m^2; mean [SD])	25.1 (4.1)	26.4 (3.7)	0.005
BMI (NIH classification) (No. [%])			0.002 (χ^2, 15.20)
<18.5	1 (0.9)	0 (0)	
18.5–24.9	63 (56.5)	126 (38.7)	
25–29.9	34 (29.6)	157 (48.3)	
≥30	16 (13)	42 (13)	
Hypertension (No. [%])	6 (5.3)	122 (37.5)	<0.001 (χ^2, 42.40)
Hypercholesterolemia (No. [%])	4 (3.5)	38 (11.7)	0.02 (χ^2, 5.64)
Hypertriglyceridemia (No. [%])	0 (0.0)	10 (3.1)	0.12 (χ^2, 2.37)
MeTs (No. [%])	2 (1.8)	10 (3.1)	0.57 (χ^2, 0.74)
tT (ng/mL; mean [SD])	5.3 (2.0)	4.5 (1.8)	0.005
Hypogonadism (total <3 ng/mL) (No. [%])	12 (10.3)	54 (16.6)	0.14 (χ^2, 2.16)
Sexual orientation (No. [%])			0.02 (χ^2, 5.66)
Heterosexual	109 (95.6)	322 (99.1)	
Homosexual	5 (4.4)	3 (0.9)	
Relationship status (No. [%])			<0.001 (χ^2, 27.51)
Stable sexual relationship ≥6 months	81 (71.4)	303 (93.2)	
No stable sexual relationship	33 (28.6)	22 (6.8)	
Educational status (No. [%])			0.05 (χ^2, 9.30)
Elementary school	0 (0)	22 (6.8)	
Secondary school	20 (17.5)	64 (19.7)	
High school	51 (44.7)	141 (43.4)	
University degree	43 (37.7)	98 (30.2)	
Concomitant sexual complaints (No. [%])			
PE	14 (12.4)	20 (6.2)	0.03 (χ^2, 4.55)
Low libido	10 (8.8)	23 (7.1)	0.55 (χ^2, 0.35)
Peyronie's disease	5 (4.4)	37 (11.4)	0.03 (χ^2, 4.78)

Keys: SD = standard deviation; CCI = Charlson Comorbidity Index; BMI = body mass index; NIH = National Institutes of Health; MeTs = metabolic syndrome; tT = total testosterone; PE = premature ejaculation
*P value according to χ^2 test or two-tailed independent t-test, as indicated

Likewise, men ≤40 years of age showed a similar and considerable prevalence of severe ED as compared with older patients. Similarly, rates of mild, mild-to-moderate, and moderate ED were not significantly different between the two groups (Table 3).

Discussion

We retrospectively evaluated a cohort of consecutive Caucasian-European sexually active men seeking first medical help for new onset ED at a single academic outpatient service over a 30-month period in order to assess prevalence and characteristics of individuals ≤40 years old as compared with those of men older than 40 years at time of ED diagnosis. We found that one out of four men with ED was younger than 40 years. Moreover, a similar proportion of younger and older ED patients did complain of severe ED. Likewise, younger and older patients equally scored for each IIEF domain, thus including sexual desire, orgasmic function, and overall satisfaction. Therefore, the observation as a whole appeared to us as a worrisome picture from the everyday clinical practice.

ED is a condition with recognized medical and sociodemographic risk factors that were extensively evaluated in different studies [7–10,13,14,25]. Overall, age is considered the most influential one, with several studies showing a dramatic increase of ED with age [7,8,26]; for instance, data from the Massachusetts Male Aging study concluded that age was the variable most strongly associated with ED [7]. Besides age, numerous other medical conditions have been strongly associated with ED [7,10,12–14,26]. Across aging period, male individuals more frequently suffer from one or more of the above mentioned comorbid conditions and, not surprisingly, they often complain also of ED. For these reasons, most of the epidemiological studies dealing with

Table 2 Therapeutic drugs and recreational habits in ≤40 years old and >40 years old ED patients—(No. = 439)

	Patients ≤40 years	Patients >40 years	*P* value*
No. of patients (%)	114 (25.9)	325 (74.1)	
Antihypertensive drugs			
ACE-i	1 (0.9)	47 (14.5)	<0.001 (χ^2, 14.62)
Angiotensin-II receptor antagonists	2 (1.8)	41 (12.6)	0.002 (χ^2, 9.95)
Beta-1 blockers	2 (1.8)	44 (13.5)	0.0009 (χ^2, 11.12)
Calcium antagonists	0 (0.0)	39 (12.0)	0.002 (χ^2, 13.57)
Diuretics			
Loop diuretics	0 (0.0)	6 (1.8)	0.33 (χ^2, 0.94)
Thiazide diuretics	0 (0.0)	18 (5.5)	0.02 (χ^2, 5.20)
Other cardiovascular drugs			
Digoxin	0 (0.0)	7 (2.2)	0.24 (χ^2, 1.36)
Antiarrhythmic drugs	1 (0.9)	6 (1.8)	0.82 (χ^2, 0.05)
Anticoagulant drugs	1 (0.9)	10 (3.1)	0.35 (χ^2, 0.89)
Antiplatelet drugs	1 (0.9)	1 (1.8)	0.82 (χ^2, 0.06)
Lipid-lowering drugs (statins &/or fibrates)	0 (0.0)	43 (13.2)	0.0001 (χ^2, 15.21)
Central nervous system drugs			
Anticonvulsant drugs	1 (0.9)	6 (1.8)	0.82 (χ^2, 0.05)
Barbiturates	0 (0.0)	2 (0.6)	0.99 (χ^2, 0.00)
Benzodiazepine	2 (1.8)	15 (4.6)	0.29 (χ^2, 1.11)
Neuroleptics	2 (1.8)	3 (0.9)	0.79 (χ^2, 0.07)
Opioid drugs	0 (0.0)	2 (0.6)	0.99 (χ^2, 0.00)
SNRIs	1 (0.9)	1 (0.3)	0.99 (χ^2, 0.00)
SSRIs	8 (7.0)	8 (2.5)	0.06 (χ^2, 3.65)
Endocrinological drugs			
Antiandrogenic drugs	0 (0.0)	3 (0.9)	0.73 (χ^2, 0.12)
Antithyroid drugs	0 (0.0)	1 (0.3)	0.57 (χ^2, 0.33)
Thyroxin	2 (1.8)	17 (5.2)	0.20 (χ^2, 1.61)
Corticosteroids	3 (2.6)	12 (3.7)	0.80 (χ^2, 0.07)
Darbepoetin	0 (0.0)	1 (0.3)	0.57 (χ^2, 0.33)
Desmopressin	0 (0.0)	2 (0.6)	0.99 (χ^2, 0.00)
Dopamine agonists	2 (1.8)	4 (1.2)	1.00 (χ^2, 0.00)
Dopamine antagonists	4 (3.5)	3 (0.9)	0.14 (χ^2, 2.19)
Hypoglycemic drugs			
Antidiabetic drugs	3 (2.6)	32 (9.8)	0.02 (χ^2, 5.05)
Insulin	3 (2.6)	23 (7.1)	0.13 (χ^2, 2.31)
Respiratory system drugs			
Antihistamines	4 (3.5)	12 (3.7)	0.85 (χ^2, 0.04)
Beta2-agonist	1 (0.9)	3 (0.9)	0.56 (χ^2, 0.33)
BPH/LUTS-related drugs			
5-alpha reductase inhibitors	1 (0.9)	6 (1.9)	0.77 (χ^2, 0.09)
Alpha-blockers	1 (0.9)	41 (12.6)	0.0005 (χ^2, 12.04)
Other drugs			
Anticholinergic drugs	1 (0.9)	1 (0.3)	0.99 (χ^2, 0.00)
Immunomodulators/immunosuppressors	3 (2.6)	12 (3.7)	0.80 (χ^2, 0.07)
Proton pump inhibitors	2 (1.8)	33 (10.2)	0.008 (χ^2, 6.98)
Nonsteroidal anti-inflammatory drugs	7 (6.1)	14 (4.3)	0.60 (χ^2, 0.27)
Triptans	0 (0.0)	1 (0.3)	0.57 (χ^2, 0.33)
Vitamins	2 (1.8)	11 (3.4)	0.59 (χ^2, 0.30)
Uricosuric drugs	0 (0.0)	17 (5.2)	0.03 (χ^2, 4.84)
Cigarette smoking (No. [%])			0.02 (χ^2, 7.56)
Current smokers	43 (37.8)	80 (24.6)	
Previous smokers	1 (0.9)	7 (2.2)	
Never smoked	70 (61.3)	238 (73.2)	
Alcohol intake (any volume/week) (No. [%])			0.52 (χ^2, 0.41)
Regularly	88 (77.2)	262 (80.6)	0.16 (χ^2, 1.93)
Alcohol intake (1–2 L/week)	26 (22.8)	98 (30.2)	0.96 (χ^2, 0.00)
Alcohol intake (>2 L/week)	4 (3.6)	10 (3.1)	
Chronic illicit drugs (any type) (No. [%])	24 (20.9)	11 (3.4)	<0.001 (χ^2, 34.46)
Cannabis/marijuana	24 (20.9)	9 (2.8)	<0.001 (χ^2, 37.29)
Cocaine	4 (3.5)	0 (0.0)	0.005 (χ^2, 37.29)
Heroin	0 (0.0)	3 (0.9)	0.73 (χ^2, 7.92)

Keys: ACE-i = angiotensin-converting enzyme inhibitors; SNRIs = serotonin and noradrenail reuptake inhibitors; SSRIs = selective serotonin reuptake inhibitors; BPH = benign prostatic hyperplasia; LUTS = lower urinary tract symptoms
**P* value according to χ^2 test or two-tailed independent *t*-test, as indicated

Table 3 IIEF-domain scores and rates of ED severity in ≤40 years old and > years old ED patients (No. = 439)

IIEF-domains (mean [SD])	Patients ≤40 years	Patients >40 years	*P* value*
IIEF-EF	12.77 (8.7)	14.67 (8.4)	0.23
IIEF-IS	5.9 (4.2)	6.69 (4.1)	0.33
IIEF-OF	7.51 (3.2)	7.06 (3.5)	0.49
IIEF-SD	6.98 (2.3)	6.57 (2.1)	0.36
IIEF-OS	4.95 (2.6)	5.06 (2.5)	0.82
IIEF severity† (No [%])			
Normal EF	11 (9.3)	39 (11.9)	0.73 (χ^2, 2.01)
Mild ED	16 (14.0)	55 (16.8)	
Mild-to-moderate ED	10 (9.3)	51 (15.8)	
Moderate ED	21 (18.6)	48 (14.9)	
Severe ED	56 (48.8)	132 (40.6)	

Keys: IIEF = International Index of Erectile Function; EF = Erectile Function domain; IS = intercourse satisfaction domain; OF = orgasmic function domain; SD = sexual desire domain; OS: overall satisfaction domain; ED = erectile dysfunction

**P* value according to two-tailed Student's *t*-test or χ^2 test, as indicated

†ED severity was categorized according to the classification suggested by Cappelleri et al. [23].

ED prevalence and predictors are carried out in a population of men older than 40 years of age; conversely, only a few studies also include data from younger individuals [14–16,26,27]. Overall, data from these later studies showed that ED is not a rare condition even among younger men. Mialon et al., for instance, reported that the prevalence of ED was 29.9% in a cohort of Swiss young men [15]. Likewise, Ponholzer et al. [14] found similar rates of ED in a consecutive series of men aged 20–80 years participating in a health-screening project in the area of Vienna. Similarly, Martins and Abdo [16] used data from a cross-sectional study where 1,947 men aged 18–40 years old were contacted in public places of 18 major Brazilian cities and interviewed using an anonymous questionnaire; overall, 35% of those individuals have reported some grades of erectile difficulties.

A major strength of our analysis emerges from the fact that we precisely assessed prevalence and characteristics of ED in young men extrapolated from a cohort of patients who consecutively came to our outpatient clinic seeking first medical help for ED; in this context, we found that quarter of patients suffering from ED in the everyday clinical practice are men below the age of 40 years. This clearly confirms previous epidemiological data from population-based studies, thus outlining that ED is not only a disorder of the aging male and that erectile function impairment in young men should not be clinically underestimated. Our depiction of the everyday clinical scenario makes even more concerning considering the daily practice of many physicians who have no familiarity with male sexual health; indeed, given the relatively low rates of ED assessment by general practitioners in patients older than 40 years [28], we fear greatly that either ED or sexual functioning per se could be even less investigated in young men [29].

The findings of our analysis showed that younger patients were globally healthier as compared with men older than 40 years, showing lower CCI scores—together with a smaller number of medications, especially for CVDs, a lower mean BMI, and a lower prevalence of hypertension. Similarly, and not surprisingly, younger individuals had higher mean tT levels as compared with patients older than 40 years, thus corroborating most of the epidemiological surveys among European aging men [2]. As a whole, these clinical data confirm those retrieved from the Brazilian survey, which failed to find any significant association with confirmed organic risk factors for ED such as diabetes and CVDs in men aged 18–40 years old [16]. Overall, these differences were expected, giving the fact that ED in young men is usually linked to the multiple psychological and interpersonal factors that mostly constitute potential underlying causes [8,30,31]. In addition, Mialon et al. [15] showed that the main differences between younger and older ED men were mental health and attitude toward medications. In our cohort of ED patients, we found that younger men were more frequently addicted to cigarette smoking and illicit drugs (i.e., cannabis/marijuana and cocaine) than older patients. Previous data on chronic use of drugs—especially cannabis, opiates, and cocaine—have shown no unambiguous evidence of a link with ED [32–34], and certainly several observations suggested a causative role for chronic cigarette smoking in promoting erectile function impairment even in young individuals [7,34–37]. Due to the descriptive nature of our study, we are not able to assume if these latter lifestyle attitudes may clearly be associated with the onset of ED in young men, but it is certainly reasonable to hypothesize that they both could probably play a role together with other factors in promoting erectile function impairment. Conversely, this chronic addiction to recreational substances—which may also be potentially harmful not only for sexual health—further reinforces the concern of the framework derived from our observation, i.e., a quarter of the men who come to seek first help for ED is under 40 years, and frequently reports chronic use of harmful substances, often even illegal.

Finally, we psychometrically assessed rates of ED severity in both groups; comparable

proportions of ED severities were found between groups. Of major importance, almost half of the individuals below 40 years of age did suffer from severe ED according to Cappelleri et al. [24], being this rate absolutely comparable with that observed in older men. In our opinion, this finding would eventually suggest that the impairment of erection might be perceived as invalidating in younger patients as in older men, therefore supporting the fact that this sexual problem would deserve adequate attention in daily clinical practice at all ages. Likewise, we evaluated how younger and older ED patients scored in terms of overall sexual functioning, as defined using the different IIEF domains. Consistent with previous data showing that longitudinal changes in the five sexual function domains track together over time [38], we did not observe any significant difference in each IIEF domain between groups. In this sense, it would be possible to speculate that, even with different underlying causes for ED, the IIEF tool could not be able to discriminate precisely the pathophysiology behind ED. Indeed, although ED, as objectively interpreted with IIEF-erectile function domain, has been demonstrated to account for a higher CCI, which may be considered a reliable proxy of lower male general health status, regardless of the etiology of ED [3], Deveci et al. [39] previously failed to demonstrate that the IIEF may be able to discriminate between organic and psychogenic ED. However, it is certainly true that a number of studies suggested that ED could be a generalized manifestation of CVD events [40,41]. Among them, Chew et al. [41], for instance, investigated ED as a predictor of CVD events in a population of men with ED ranging between 20 and 89 years of age; these authors found a greater relative risk for CVD events in ED patients younger than 40 years. Conversely, a decreased predictive value of ED for CVD events was observed in the older population [41]. Overall, these previous results and our current findings may suggest that ED screening is a valuable means of identifying young and middle-aged men who are valuable candidates for cardiovascular risk assessment and subsequent medical intervention. Even if the majority of patients in this age group would probably suffer from a nonorganic ED, there could be a proportion of them complaining of organic ED of broad-spectrum etiologies, with ED being the only sentinel marker for an incipient deterioration of health (i.e., atherosclerosis). In this context, Kupelian et al., for instance, studying a population of 928 men without MeTs, showed that ED was predictive for subsequent developing MeTS in patients with normal BMI at baseline [42], thus stressing the value of ED as an issue to help motivate young men to have a long-term healthy lifestyle, which may modulate the risk of diseases like diabetes and CVD, among others.

Our study is not devoid of limitations. First, our relatively small cohort of men could limit the meaningfulness of our findings, while taking into account only those patients who were referred to a sexual medicine outpatient clinic may substantiate a selection bias in terms of severity of ED, thus leading to miss a number of individuals with mild ED and less motivated to seek medical help. However, we consider that this methodological flaw would be equally present in both age groups, thus not undermining the value of these findings. Second, we did not assess rates of depression or anxiety using validated psychometric instruments. In this context, the causal relationship between ED and either depression or anxiety, or both, is probably bidirectional; indeed, ED may be acquired after either depression or anxiety that, in turn, may be a consequence of any sexual dysfunction. Having a tool that can discriminate this condition could be of great clinical importance especially in the young population. Third, our analyses did not specifically assess patients' sexual history and sexuality over the adolescent period. In this regard, Martins and Abdo [16] showed how lack of information on sexuality in very young patients was associated with ED because of possible fear and doubts raised by taboos and unreal expectations. Patients with difficulties throughout the beginning of their sexual life showed higher occurrence of ED, probably generated by a cycle of anxiety and failures that eventually impair the individual's sexual performance [43]. Lastly, our analysis did not take into account the socioeconomic aspects of life; indeed, increased household income was demonstrated to be positively associated with treatment-seeking behavior, whereas financial disadvantage might ultimately represent a barrier [44]. We decided, however, not to request income information due to the low response rate to income questions that we usually obtain in real-life clinical practice during standard office visits.

Conclusions

In contrast to what has been reported by population studies of the prevalence of ED in young patients, our findings show that one out of four men seeking medical help for ED in the daily

clinical practice of an outpatient clinic is a young man below the age of 40 years. Moreover, almost half of the young men suffered from severe ED, being this proportion comparable with that observed in older individuals. Moving to the daily clinical practice, current findings prompt us to further outline the importance of taking a comprehensive medical and sexual history and performing a thorough physical examination in all men with ED, irrespective of their age. Likewise, given the low rate of seeking medical help for disorders related to sexual health, these results express even more the need that healthcare providers may proactively ask about potential sexual complaints, once more even in men younger than 40 years of age. Because the current sample size is limited, we probably cannot derive general conclusions; therefore, additional studies in larger population-based samples are needed to confirm these results and to further characterize the potential role of ED severity as a harbinger of medical disorders in men below the age of 40 years.

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