Management of Erectile Dysfunction in General Practice

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ABSTRACT

Introduction. In recent years, the availability of effective oral pharmacological treatment for erectile dysfunction (ED) has revolutionized its management; however, it is still unclear how everyday clinical practice has changed in response to this evolving scenario.

Aim. The aim of this study is to describe general practitioners’ (GPs) beliefs and attitudes toward the management of ED.

Methods. Each GP was asked to recruit consecutive men aged ≥18 years and sexually active, with already known erectile problems or with newly diagnosed ED.

Main Outcomes Measures. A written questionnaire was used to investigate GPs’ sociodemographic characteristics and their beliefs toward the management of ED.

Results. Overall, 127 GPs (53.4%) returned the questionnaire and 124 enrolled patients for the study. Only 9.5% of the GPs reported routinely inquiring about ED of patients >40 years of age, whereas 45.7% did it only when the patient raised the problem. GPs’ gender and age were associated with their beliefs about ED treatment and referral to specialist care. Overall, 932 patients were enrolled, of whom 38% had newly diagnosed ED. The problem came to light for initiative of patient in 80% of cases, and 84.8% of men were prescribed a treatment. Patients who on their own initiative discussed of their condition had an almost 3-fold increased probability to be treated than those whose GP began the discussion about ED (odds ratio [OR] = 2.6, confidence interval [CI] 95% 1.5–4.5). Patients followed by female physicians were significantly more likely to be referred to a specialist than those followed by male physicians (OR = 3.3, CI 95% 1.4–5.0).


Key Words. Erectile Dysfunction; General Practice; Beliefs and Attitudes

Introduction

Erectile dysfunction (ED) is one of the most frequent chronic health conditions in men older than 40 years of age [1]. A study on over 2,000 individuals aged ≥18 years showed a prevalence of ED of 12.8% that reached 48.3% for men over 70 years [2]. ED may also act as a sentinel symptom for other important underlying diseases, first of all coronary heart disease and depression [3–6]. In recent years, the attention for ED has increased progressively, as proven by the large number of studies regarding this condition; however, it is still unclear how everyday clinical practice has changed in response to this evolving scenario.

The availability of effective oral pharmacological treatment for ED has revolutionized its management and determined a deep change in patient’s attitudes. Whereas in the past ED was considered a condition requiring specialist advice, the family physician is now considered as the ideal...
professional to whom to refer for handling the problem [7,8]. Nevertheless, significant barriers in patient–physician communication overstay despite the increasing awareness of the accessibility of effective treatments [9,10]. Furthermore, the fear of side effects or problems related to the costs of therapy may influence medical decision-making and limit the use of drugs. The evaluation of these aspects is particularly interesting in general practice as the population is less selected than in urologic units and more representative of the real needs of treatment for this condition.

The aim of the study was to describe general practitioners’ (GPs) beliefs and attitudes toward the management of patients with ED, the diagnostic and therapeutic strategies adopted, and the tendency to refer them to a specialist.

Methods

ED Evaluation Network (EDEN) is a prospective, observational study designed to assess GPs’ approach in the management of patients with ED and the effectiveness of ED treatment in routine clinical practice.

GPs in all Italian regions were identified through local health authorities and selected according to their willingness to participate in the project.

A written questionnaire was used to investigate GPs’ sociodemographic characteristics and their beliefs toward the management of ED. The questionnaire was sent by mail to all physicians participating in the project.

Each GP was asked to recruit consecutive men aged ≥18 years and sexually active, with already known or newly diagnosed ED, irrespective of ED duration and treatment. All patient care was at the discretion of the GP, and no changes to normal clinical practice were required specifically for the study.

In addition to clinical information, GPs were requested to report in ad hoc forms the severity, duration, and nature of ED, and whether a treatment was prescribed. Data were collected at baseline and 3-month intervals thereafter for 1 year. The present analysis refers to the data collected at baseline.

The study was approved by the ethics committees of all the local health districts involved.

Statistical Analysis

Patients’ characteristics are reported as mean and standard deviation (SD) for continuous variables and frequencies and percentages for categorical ones. Patients’ characteristics according to the severity of ED were compared with the $\chi^2$ test and Mann–Whitney U-test for categorical and continuous variables, respectively.

To account for the multilevel nature of the data (patients clustered within physician) and to control simultaneously for the possible confounding effects of the different variables, we utilized multivariate multilevel models (hierarchical models) [11,12] to investigate correlates of ED therapy prescription and referral to specialist care.

We considered as level-1 variables baseline patient characteristics, including age, known or newly diagnosed ED, severity of ED (moderate, mild, severe), etiology of ED (organic, psychogenic, mixed, of uncertain origin), previous myocardial infarction or cardiovascular disease, diabetes, person who on his own initiative discussed of ED (patient vs. physician), use of $\alpha$-blockers or nitrates, having visited the specialist.

Level-2 variables tested included: physician age and gender, number of years in practice, and physicians’ attitude to inquire about ED (ED investigated only in patients with identifiable risk factors, ED investigated only after the patient has raised the problem, ED usually investigated in all patients).

All the analyses were performed using SAS Statistical Package Version 9.1 (Cary, NC, USA) [13].

Results

Physician Beliefs

Of the 238 physicians initially identified, 127 (53.4%) returned the questionnaire while 124 eventually enrolled patients for the study. Eighty-seven percent of the respondents were men; the mean age was of 51 ± 4 years. Only 2% of the GPs had some further training in urology, 10% in general practice, 5% in endocrinology, 8% in cardiology, 66% in other specialties, while 9% had no further training. The mean practice time was of 25 ± 5 years.

Only 9.6% of the GPs reported routinely inquiring about ED of men older than 40 years of age, whereas 45.2% did investigate the presence of ED in patients with identifiable risk factors; finally, 45.2% of the respondents reported inquiring about ED only when the patient raised the problem.

Motivations of physicians that were not inclined to inquire about ED on their own initiative were investigated. Half of the respondents expected that
the patient would raise the problem, whereas 29% of them believed that patients are too embarrassed to discuss the subject. Finally, 15% declared that the main motivation was lack of time.

Most participants (73.3%) reported not being uncomfortable in diagnosing ED, and 83.9% of respondents believed that only selected patients required more extensive diagnostic evaluations. Blood glucose levels (97.6%), blood pressure measurement (93.6%), lipid profile (87.9%), urin testing (68.6%), and hormonal levels assessment (69.4%) were the most common tools used in ED diagnostic workup. Among instrumental examinations, a duplex ultrasound was habitually prescribed by 48.4% of the respondents and an echography of the genitourinary tract by 38.7%; nocturnal penile tumescence studies and intracavernous injections of prostaglandin E1 were used by 9.7% and 7.3% of the GPs, respectively.

Beliefs regarding the prescription of a pharmacologic therapy according to patients’ characteristics are reported in Table 1. GPs were reluctant to prescribe ED drugs to individuals with coronary heart disease, previous myocardial infarction, or with cardiovascular risk factors, to elderly men, and to those with low socioeconomical status.

Patterns of Care
Overall, 932 patients were enrolled. The mean age of the study population was of 59 ± 11 years. A total of 17% of the patients had ≤5 years of school education, 78% were married, and 23.2% were smokers.

ED was judged moderate by the GPs in 50.9% of the patients, mild in 35.2%, and severe in the remaining 13.9%. Table 2 shows clinical characteristics according to the severity of erectile problems. Age, history of cardiovascular disease, diabetes, prostatectomy, and depression were significantly related to the severity of ED. The use of diuretics, antiplatelets, statins, and antidepressants was also significantly associated with a higher likelihood of severe ED.

Overall, 38% of cases of ED were newly diagnosed. The problem came to light for initiative of the patient in 80% of cases and for initiative of the physician in 16.5%, while in the remainder 3.5% of cases the problem was raised by the partner. The cause of ED was organic in 22.6% of the patients, psychogenic in 22.9%, mixed in 34.9%, and uncertain in 19.5%. More than one-half of patients (58%) suffered from ED for at least 1 year; this percentage was also high for patients with newly diagnosed ED (22.5%).

Overall, 84.8% of patients were prescribed an ED treatment: 25.7% received sildenafil, 39.8% vardenafil, 17.8% tadalafil, 1.3% intracavernous injections, and 0.2% other treatments. Only one-third of patients were referred to medical specialist
care (31%), and urologists and andrologists accounted for the largest numbers (76.2% and 21.3%, respectively).

### Multilevel Analyses

Independent correlates of being treated for ED were investigated with a multilevel logistic regression (Figure 1). Patients with moderate ED, but not those with severe ED, were more likely to be treated than those suffering from mild ED. Men who on their own initiative discussed their condition with GPs had an almost 3-fold increased probability to be treated compared with those whose physician raised the subject on ED. As expected, patients with previous myocardial infarction or treated with nitrates had a markedly lower likelihood to receive an ED treatment.

Physicians’ beliefs also affected the probability to be treated, even if statistical significance was not reached; in particular, men cared for by physicians who inquired about ED only in patients with identifiable risk factors or only after patient initiative had a 60% lower probability to receive an ED treatment compared with individuals cared for by physicians who usually inquired about ED.

Finally, the probability to be referred to medical specialist care was investigated (Figure 2).

Among GPs’ characteristics, gender represented the only correlate of referring to specialist care. In fact, patients followed by female physicians showed a more than 3-fold higher probability to receive a specialist visit than those followed by male physicians.

Among patient characteristics, the likelihood to be referred to a specialist was two to three times higher in men with known ED, with longer duration of ED, and with organic or mixed ED. Individuals with mild or moderate ED were markedly

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mild ED</th>
<th>Moderate ED</th>
<th>Severe ED</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>57.1±10.4</td>
<td>60.1±10.8</td>
<td>62.1±10.4</td>
<td>&lt;0.0001</td>
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<tr>
<td>Hypertension</td>
<td>41.0%</td>
<td>46.5%</td>
<td>51.2%</td>
<td>0.10</td>
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<tr>
<td>Dyslipidemia</td>
<td>28.8%</td>
<td>32.6%</td>
<td>29.5%</td>
<td>0.49</td>
</tr>
<tr>
<td>Previous cardiovascular diseases</td>
<td>8.9%</td>
<td>13.1%</td>
<td>20.2%</td>
<td>0.004</td>
</tr>
<tr>
<td>Diabetes</td>
<td>14.4%</td>
<td>24.3%</td>
<td>30.2%</td>
<td>0.0001</td>
</tr>
<tr>
<td>Prostatectomy</td>
<td>0.9%</td>
<td>3.2%</td>
<td>17.8%</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Depression</td>
<td>8.0%</td>
<td>12.7%</td>
<td>14.7%</td>
<td>0.05</td>
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<tr>
<td>Concomitant medications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diuretics</td>
<td>14.7%</td>
<td>11.4%</td>
<td>22.5%</td>
<td>0.04</td>
</tr>
<tr>
<td>β-blockers</td>
<td>7.7%</td>
<td>9.7%</td>
<td>14.0%</td>
<td>0.12</td>
</tr>
<tr>
<td>ACE-Inhibitors</td>
<td>25.1%</td>
<td>26.0%</td>
<td>27.9%</td>
<td>0.82</td>
</tr>
<tr>
<td>Angiotensin receptor blockers</td>
<td>9.5%</td>
<td>15.0%</td>
<td>13.2%</td>
<td>0.07</td>
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<tr>
<td>Calcium antagonists</td>
<td>11.0%</td>
<td>13.7%</td>
<td>21.7%</td>
<td>0.01</td>
</tr>
<tr>
<td>Antiplatelets</td>
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<td>22.5%</td>
<td>0.02</td>
</tr>
<tr>
<td>Statins</td>
<td>11.6%</td>
<td>19.0%</td>
<td>19.4%</td>
<td>0.01</td>
</tr>
<tr>
<td>Antidepressants</td>
<td>4.6%</td>
<td>8.0%</td>
<td>11.6%</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Data are given as percentage of patients and mean ± SD. Percentages have been rounded and may not total 100.

ACE = angiotensin converting enzyme.
less likely to be referred to a specialist as compared with those with severe ED. Men with diabetes also showed a lower likelihood to be seen by a specialist.

Discussion

ED is a sensitive issue, and many men are unable to broach it out of embarrassment with their physician. A recent study found that of 218 men who admitted having ED, 74% were too embarrassed to discuss their problem with the urologist. In addition, 82% reported that they would have preferred their primary care physician to have taken an initiative to raise the subject on ED during their routine visits [14]. Men’s Attitudes to Life Events and Sexuality (MALES) data indicated that among men with ED, only 58% had actively sought medical attention for their condition [15].

In addition to patient difficulties in discussing about their private matters with a specialist, the process of care model for ED outlines a goal-oriented approach for the diagnosis and treatment of ED. This excludes specialized diagnostic testing in most patients and focuses on the identification of a suitable treatment [16].

General practice can thus represent an ideal setting for both the detection and treatment of the largest part of the cases of ED.

Our survey suggests that most GPs deal with the diagnosis and management of ED routinely and tend to refer only some of their patients to the urologist. In agreement with previous findings, female physicians appear less comfortable diagnosing ED and more inclined to refer their patients to specialist care [17]. Similarly, older physicians are more likely to refer their patients to a specialist and less prone to prescribe a therapy. Patients’ coexisting medical conditions, older age, and lower socioeconomic status are also considered by GPs as barriers to treatment of ED [13]. In particular, many GPs are still reluctant to address ED in the cardiac patient, based on the perceived cardiovascular risk associated with oral drugs, despite numerous studies that have proven their cardiovascular safety [18].

In our study we could match GPs’ beliefs about ED with their practice. From the analysis of 932 men with sexual problems, it emerged that many GPs tend to manage the condition in most of their patients. Nevertheless, despite many physicians had declared that they ask their patients about ED, from the analysis of the newly diagnosed cases it is clear that the initiative is still in the hands of patients in most of the instances. Furthermore, one in five men had been suffering from sexual problems for more than 1 year at time of diagnosis, thus suggesting that patients are still reluctant in initiating the discussion. Once the problem has come to light, GPs tend to prescribe an oral therapy in most of the circumstances. The probability of a drug prescription was substantially higher when the patient brought up the topic. Evidently, the availability of oral drugs and media publicity strongly motivates patients suffering from ED to seek treatment from their GPs. In this respect, men cared for by GPs who more reluctant to discuss sexual problems were also less likely to receive a drug prescription. These data do suggest that some family doctors tend to proactively investigate and treat ED while others assume a passive role when diagnosing and managing sexual problems.

Besides those with absolute contraindications, such as patients taking nitrates, also patients with previous myocardial infarction were less likely to receive a drug prescription, coherently with the picture emerged from physicians’ survey. Finally, GPs manifested a propensity to treat more often ED of moderate severity, while mild forms and more severe ones were less frequently treated for opposite reasons, oral treatment being probably considered not needed in the former and ineffective in the latter circumstances.

The analysis of correlates of referral to specialist care offers additional information of GPs’ attitudes. Of the patients enrolled, only one-third had been referred to a urologist or an endocrinologist. Female physicians confirmed to be particularly hesitant about managing male sexual problems.
Patients with more severe forms of ED, those with problems of organic or mixed nature, and those with ED of longer duration were also more likely to be referred to a specialist, probably as a consequence of unsuccessful trials with oral therapy. These data confirm previous findings documenting that referrals to urologists are made when GPs are no longer comfortable treating the problem [7]. On the other hand, men with newly diagnosed ED were significantly less likely to be referred to a urologist than those with known sexual problems: this finding further confirms that GPs tend to initially take charge of most of their patients with ED.

Finally, some of the potential limitations of our study must be considered. First, participating physicians were not randomly selected, and they could represent those clinicians more interested in ED issues, as suggested by the high use of special investigations reported in the questionnaire. Therefore, they might not reflect the general attitudes of Italian physicians, and the problems documented in our study could be underestimated. Second, only pharmacological treatment was investigated. Whether additional approaches such as education [19] or behavioral treatment were used was not investigated.

Finally, our analysis was cross-sectional in nature. The relationship between physicians’ beliefs, practice, and outcomes will be further explored during the longitudinal phase of this study.

Conclusions

With the advent of highly effective and widely available pharmacotherapy for ED, GPs are increasingly involved in the diagnosis and treatment of this important quality-of-life issue. For an effective management of ED in primary care, appropriate training is still needed to overcome the hindrances in inquiring and treating this condition.

List of Study Investigators

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Conflict of Interest: None declared.

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