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Erectile failure among medical clinic patients

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Summary

Erectile failure is commonly overlooked by most doctors while conducting clinical interviews. This is probably, in part, explained by the widespread belief within the medical profession that the disorder is mostly psychogenic and probably uncommon in a variety of patient populations. In order to define the frequency and pattern of this disorder in our local clinic population, the present study has determined the incidence of erectile failure in 227 adult male medical out-patients of the University of Nigeria Teaching Hospital, Enugu. Seventy-seven (34%) of the patients were impotent and the incidence increased progressively with age. Only 26% of the impotent patients volunteered information on the disorder without specific questioning. Diabetics had a significantly higher incidence of impotence than the non-diabetics (58% vs. 29%; $P < 0.0001$). Among the hypertensives, drug therapy increased the frequency from 8 to 61%. These data suggest that impotence is very common among our male medical out-patients, particularly the elderly and middle-aged, the hypertensives on drug therapy and the diabetics. The disorder should be actively sought out since most affected patients do not complain about it.

Résumé

L'impotence érectile est d'habitude négligée par la plupart de docteurs en faisant l'entrevue clinique. Cela est probablement, d'une part, expliqué par la croyance, répandue, que le désordre est plutôt psychogénique et probablement peu commun dans une variété des populations des patients. Pour définir la fréquence et le modèle de ce désordre dans notre population locale et clinique, l'étude du moment a déterminé l'incidence de l'échec érectile dans 227 adultes — mâles, des patients-sortis médicaux de l'Université du Nigéria Teaching Hospital d'Enugu. Soixante-dix-sept (34%) des patients étaient impotents et l'incidence augmentait progressivement avec l'âge. Seul 26% des patients impotents se plaignaient du désordre sans être questionné spécifiquement. Des diabètes avaient une plus haute incidence que des non-diabètes (58% vs. 29%). Parmi les hypertensives, les médicaments thérapiques augmentaient la fréquence de 8 à 61%. Ces données suggèrent que l'impotence est très commun parmi nos patients-sortis médicaux mâles, surtout les âgés et ceux d'âges moyens, les hypertensives recevant des médicaments thérapiques et les diabètes. Le désordre devrait être recherché activement, sans délai, car la plupart des patients affectés ne se plaignent pas de ça.

Introduction

Erectile failure is one of the most common forms of sexual dysfunction in man [1,2]. In spite of this, the disorder is often neglected by most doctors during the clinical evaluation of their patients who present with a variety of medical problems [3]. Several reasons probably account for this indifference. First, sexuality and its problems have not been adequately emphasized in most medical curricula [4] and as such, most doctors are uncomfortable when handling sexual problems [5]. Secondly, it is still generally accepted that most cases of impotence are psychogenic in origin [6], despite the results of a number of recent investigations to the contrary [7–10]. In addition, most doctors probably assume that the disorder is very rare in their patients because there are only a few published studies on the prevalence and pattern of sexual dysfunction in medical clinic patients [9,11]. Clinic patients would

appear to be particularly at risk for impotence because many disorders, some iatrogenic, known to cause the disorder are common among them [6–9,12].

Several uncontrolled studies have shown that a high percentage of diabetic patients have abnormalities of sexual function, impotence being reported in 35–59% [13–16]. The significance of these rates has been questioned by Lester *et al.* [11] who studied diabetic and non-diabetic out-patients attending different clinics. They found that the incidence of erectile failure was similar in both populations, and suggested that impotence may not be a specific complication of the disease, a conclusion that is at variance with most views on the subject [14,17].

In order to look further into these issues, the present study has surveyed adult male medical out-patients at the University of Nigeria Teaching Hospital, to define the incidence and pattern of erectile failure in this clinic population. The impact of diabetes mellitus and hypertension on the incidence was also assessed.

Subjects and methods

Consecutive male patients, 20 years old or more, seen at a medical out-patient clinic of the University of Nigeria Teaching Hospital, Enugu, were studied. In addition to a complete history and physical examination, each patient was questioned about his sexual function. Specifically, they provided information about their libido; the presence, frequency, and duration of erectile impotence; the rapidity of the development of the impotence; and the presence or absence of spontaneous or morning erections. Only patients who were judged to be able to undertake their normal activities of daily living were included in the survey.

The hospital charts were reviewed for the documentation of the underlying medical problems and drug histories. Blood pressure was determined either in the sitting or supine position, using a mercury manometer. Hypertension was diagnosed if repeated determinations, obtained on at least three occasions gave an average reading equal to or greater than 160 mmHg systolic or 95 mmHg diastolic. Those patients who were already on antihypertensive therapy were classified as being hypertensive if they met these criteria prior to drug treatment.

A diagnosis of diabetes mellitus was based on a combination of appropriate clinical features and blood glucose estimation (fasting blood sugar $\geq$ 140 mg per 100 ml or a random or postprandial blood sugar $\geq$ 200 mg per 100 ml). Patients who already had a diagnosis of diabetes mellitus were accepted as diabetics if they met these criteria when the diagnosis was made. Using the criteria of Masters and Johnson [18], impotence was defined as the failure to obtain or maintain a penile erection of sufficient tumescence to permit coitus to orgasm or ejaculation in at least 25% of opportunities. Patients with only premature ejaculation were not accepted as impotent.

The following laboratory investigations were routinely carried out in each patient on enrolment into the present study: full blood count; fasting and 2-hour postprandial blood sugar; serum electrolytes, urea, creatinine, albumin, globulin, alanine and aspartate aminotransferases, bilirubin and alkaline phosphatase; urinalysis; and a chest X-ray. Further studies were done as necessary.

Statistical analysis was performed either by the two-tailed Student's *t*-test or the chi-square test as applicable. Results are presented as the mean $\pm$ standard deviation (s.d.).

Results

The study population comprised 227 male patients aged 21–84 years. Eighty had hypertension, 38 were diabetic and eight had both conditions.

Seventy-seven patients (33.9%) were impotent. All reported failure rates of 70% or more during attempted sexual intercourse. They had been symptomatic from 4 months to over 10 years. These patients were older than those without impotence (52.8 $\pm$ 13.1 years vs. 41.8 $\pm$ 13.1 years; $P < 0.005$). There was a statistically significant correlation between age and the frequency of impotence ($r = 0.99$; $P < 0.001$), with the frequency of impotence increasing progressively from 17% in those 30–39 years of age to 75% in those 70 years or older (Fig. 1). The pattern of the medical problems present in the impotent patients is shown in Table 1. Hypertension, diabetes mellitus or a combination of both were the most common

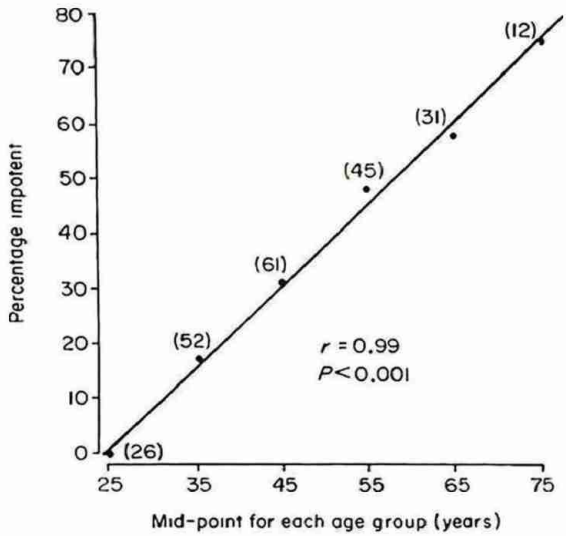

Fig. 1. The incidence of impotence in the different age groups. The numbers in parentheses refer to the total number of patients in each age group.

Table 1. Diagnoses made in the 77 impotent clinic patients

Diagnosis	Number of patients
Hypertension	35
Diabetes mellitus	22
Chronic lung disease	3
Chronic liver disease	2
Thyrotoxicosis	2
Peptic ulcer disease	2
Prostatectomy	1
Dysautonomia	1
Phenothiazine therapy	1
Alcoholism	1
Undetermined*	11

Some patients had more than one diagnosis.
*After history, physical examination and the routine laboratory investigations.

diagnoses. In 11 patients (14.3%) no specific organic factor to account for the impotence was evident after the initial evaluation and simple routine investigations.

Thirteen patients presented to the clinic only because of impotence. These patients were younger than the rest of the impotent patients (45.0 ± 7.2 years vs. 56.7 ± 12.7 years; $P < 0.001$). A clinical diagnosis, based solely on the history, physical examination and the routine laboratory investigations was possible in only 15% of these patients, while a diagnosis was made in more than 96% of the other 64 impotent patients. Only 20 (26%) of all the impotent patients complained about the disorder without direct questioning or had previously sought help for it.

Diabetes and impotence

Thirty-eight patients had clinical diabetes mellitus of 1 month to 13 years duration. Two of them were treated with diet alone, three with insulin injections and the rest were on oral hypoglycaemic drugs. Twelve had peripheral neuropathy manifested by paraesthesia, absent deep tendon reflexes and diminished or absent sensation in the feet and legs. No patient had significant proteinuria or raised blood urea.

Twenty-two (58%) of the diabetic patients and 55 (29%) of the 189 non-diabetic patients were impotent, a statistically significant difference ($P < 0.0001$). The incidence of impotence increased progressively with age in both the diabetic and non-diabetic patients and, except for those under 30 years of age, and 70 years or

older, the incidence was higher among the diabetics than among the non-diabetics for all the age groups evaluated (Fig. 2). Impotence was also found more frequently in those diabetics with clinically detectable peripheral neuropathy. While nine (75%) of the 12 diabetics with peripheral neuropathy were impotent, only 13 (50%) of 26 of those without any clinical evidence of peripheral neuropathy were affected. This difference is, however, not statistically significant. The design of the present study and the small number of diabetic patients in this group of clinic patients precluded an adequate statistical analysis, to determine any clinically significant contribution of the duration and type of diabetes, form of treatment, and the level of control of diabetes, on the incidence of impotence in these diabetic patients.

Hypertension and impotence

Fifty-four of the 80 hypertensives were on drug therapy at the time of evaluation. The drugs, which were generally used in combination, included the thiazides, reserpine, α-methyldopa, hydralazine, propranolol, atenolol, furosemide and nifedipine. Thirty-three (61%) of the treated hypertensives but only two (8%) of the untreated patients, were impotent ($P < 0.0001$). The relative contribution of each drug to the rate observed in the treated patients could not be estimated since most were on multiple anti-hypertensive drugs. Impotence resolved in several patients when their anti-hypertensive drugs were changed.

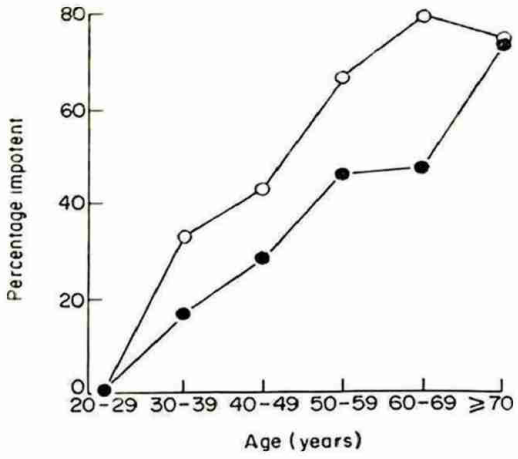

Fig. 2. The effect of age on the incidence of impotence in diabetic (○) and non-diabetic (●) clinic patients.

Discussion

The present study has found that about 34% of the active, ambulant male patients attending our medical out-patient clinic are impotent. This figure is similar to the results of workers from other parts of the world [9,11]. Unfortunately, no report on sexual dysfunction in any other African population was found for comparison.

Ageing was a very important and statistically significant factor on the observed frequency of impotence. The incidence increased progressively with age in these clinic patients. Kinsey *et al.* [1] have also reported a similar increase in the incidence of impotence in the general population, rising from 0.8% at 30 years to 75% at 80 years. Although some investigators have documented a significant decrease of mean circulating testosterone and free testosterone by the age of 30 years with a progressive decline thereafter [19], others have not confirmed similar changes when only healthy men were studied [20]. It would appear rather, that the chronic illnesses that are common in the elderly are probably the most important factors responsible for both the impotence and low serum testosterone seen in them [21].

Drugs, diabetes mellitus, thyrotoxicosis, prostatic surgery, dysautonomia, alcohol use, and liver diseases were implicated as possible causes in 77% of the impotence cases seen in the present series. This finding is similar to the results of other studies which document that organic or pharmacological causes of impotence can be easily identified in 34–80% of impotent clinic patients [7–9]. The discrepancy between the earlier reports and the more recent findings on this topic could probably be explained by the fact that the observed incidence of the different causes of impotence in any group of patients is dependent on the general characteristics of the patient population, the local referral pattern,

the type of clinic in which the patients are seen, and the nature of evaluation received [22]. In effect, the clinic setting is an important determinant of the observed spectrum of the various causes of impotence.

The widely accepted idea that over 90% of impotence is purely psychological appears to have originated from the largely unsubstantiated 1950 report of Straus [23] from a psychiatric clinic. Patients seen in such specialty units are probably less representative of the impotent population than those attending general medical clinics. In any case, when patients who are suspected to have psychogenic impotence have been evaluated in detail, organic problems were found in a large proportion [8].

Furthermore, it is easy for one to conclude erroneously that most impotence is psychogenic if only those patients who come to the medical clinic with a chief complaint of impotence are evaluated. This could happen because, as documented in the present study, such patients differ substantially from the other patients with impotence who have sought medical attention because of other reasons. They are younger and tend to have more subtle and less readily apparent medical problems. In view of the adverse psychological impact of impotence on those affected, it is understandable that such patients could erroneously be presumed to have psychogenic impotence if more sophisticated investigations are not included as a part of their evaluation [24]. Spark *et al.* [8] have reported that a detailed endocrine evaluation of such a group of patients revealed that 35% had a disorder of the hypothalamic–pituitary–gonadal axis. Also, we have documented hyperprolactinaemia in over 25% of our impotent clinic patients who had none of the common organic or pharmacological causes of impotence on initial evaluation [25]. These facts suggest that while psychological factors constitute an important cause of impotence, organic problems are common and should always be excluded in all affected individuals. This is particularly essential because impotence may also be multifactorial in some patients [26].

The frequency of impotence of 58% found among the diabetics in this series is similar to the results of other studies [13–16]. The incidence increased progressively with age and, except for those over 70 years old, was higher in all groups than the incidence in the non-diabetics (Fig. 2). This result is in conflict with the report of Lester *et al.* [11] who found that the incidence of impotence was similar in diabetic and non-diabetic out-patients. The reason for this difference is not obvious. Perhaps, the method of patient selection, the age composition, the pattern of illnesses, and the therapeutic regimens are the variables.

Eight per cent of the untreated hypertensives had impotence. The contribution of hypertension alone to this rate is not known because there is no published report on the frequency of impotence in normotensive, healthy Nigerians. Bulpitt *et al.* [27] have suggested that hypertension can cause impotence because of their findings that, while 17% of untreated hypertensive patients were impotent, only 7% of the normal population of a comparable age were similarly affected. The possible mechanism involved is presently unknown. Sixty-one per cent of the hypertensive patients on drug therapy in this series were impotent. Modification of the drug regimen in some of them provided relief from impotence. These results indicate that although hypertension may cause impotence, anti-hypertensive therapy increases the frequency greatly.

Over 70% of the impotent males in this survey failed to provide any information about the presence of impotence until they were directly questioned on the subject. It is therefore necessary to include a sexual history as a part of the general medical evaluation of all male medical clinic patients if this large group of affected individuals is to be discovered. Despite the fact that most doctors and patients are usually apprehensive about confronting the problem of sexual dysfunction, such uneasiness appears unnecessary. Thus, Ende *et al.* [28] have found that over 90% of their patients considered it appropriate for their physicians to ask them about their sexual problems. It seems clear then that, when patients are approached with skill and compassion, most are willing to provide the necessary information about impotence. Physicians should therefore learn the art of sexual history-taking [29] and make it a point to question their patients directly about the presence of impotence since the disorder is very common and under-reported, potentially reversible in a large number of patients, and treatable in many others [30].

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References

1. Kinsey AC, Pomeroy WB, Martin CE. Sexual Function in the Human Male. Philadelphia: WB Saunders, 1948:218–62.
2. Frank E, Anderson C, Rubinstein D. Frequency of sexual dysfunction in normal couples. N Engl J Med 1978;299:11–5.
3. Lanier DC, Graveson RG. Detection of sexual problems by family education program. J Sex Educ Ther 1982;8:21–4.
4. Kaplan HS. Sexual medicine: a progress report. Arch Intern Med 1980;140:1575–6.
5. Burnap D, Golden JJ. Sexual problems in medical practice. In: Vincent C, ed. Human Sexuality in Medical Education and Practice. Springfield: Charles C Thomas, 1968:47–59.
6. Walsh PC, Wilson JD. Disturbances in sexual function and reproduction in men. In: Isselbacher KJ, Adams RD, Braunwald E, Petersdorf RG, Wilson JD, eds. Harrison's Principles of Internal Medicine, 9th edn. New York: McGraw-Hill Book Company, 1980:229–32.
7. Montague DK, James RE, DeWolfe VG, Martin LM. Diagnostic evaluation, classification, and treatment of men with sexual dysfunction. Urology 1979;14:545–8.
8. Spark RF, White RA, Connolly PB. Impotence is not always psychogenic: newer insights into hypothalamic-pituitary-gonadal dysfunction. J Am Med Assoc 1980;243:750–5.
9. Slag MF, Morley JE, Elson MK. Impotence in medical clinic outpatients. 1983;249:1736–40.
10. Davis SS, Viosca SP, Guralnik M, *et al*. Evaluation of impotence in older men. West J Med 1985;142:499–505.
11. Lester E, Grant AJ, Woodroffe FJ. Impotence in diabetic and non-diabetic out-patients. Br Med J 1980;281:354–5.
12. Beeky L. Drug-induced sexual dysfunction and infertility. Adv Drug React Ac Pois Rev 1984;3:23–42.
13. Schoffling K, Federlin K, Ditschuneit H, Pfeiffer EF. Disorders of sexual function in male diabetics. Diabetes 1963;12:513–27.
14. Ellenberg M. Impotence in diabetics: the neurologic factor. Ann Intern Med 1971;75:213–19.
15. Kolodny RC, Kahn CB, Goldstein HH, Barnett DM. Sexual dysfunction in diabetic men. Diabetes 1974;23:306–9.
16. McCuloch DK, Campbell IW, Wu FC, Prescott RJ, Clarke BF. The prevalence of diabetic impotence. Diabetologia 1982;18:279–83.
17. Ewing DJ, Campbell IW, Clarke BF. The natural history of diabetic autonomic neuropathy. Q J Med 1980;193:95–108.
18. Masters WH, Johnson VE. Human Sexual Inadequacy. Boston: Little Brown and Company, 1970:157–92.
19. Stearns EL, MacDonald JA, Kaufman BJ, Lucman TS, Winter JS, Fauman C. Declining testicular function with age: hormonal and clinical correlates. Am J Med 1974;57:761–6.
20. Harman SM, Tsitouras PD. Reproductive hormones in aging men. I. Measurement of sex steroids, basal luteinising hormone, and leydig-cell response to human chorionic gonadotropin. J Clin Endocrinol Metab 1980;51:35–40.
21. Semple GG, Gray CE, Beastall GH. Male hypogonadism: a non-specific consequence of illness. Q J Med 1987;64:601–7.
22. Seagraves RT, Schoenberg HW, Zarins CW. Characteristics of erectile dysfunction as a function of medical care system entry point. Psychosom Med 1981;43:1354–6.
23. Straus EB. Impotence from a psychiatric standpoint. Br Med J 1950;1:697–9.
24. Bancroft J. Erectile impotence — psyche or soma? Int J Androl 1982;5:353–5.
25. Modebe O. Serum prolactin concentration in impotent African males. Andrologia 1989;21:42–7.
26. Collins WE, McKendry JBR, Silverman M, Krul LE, Collins JP, Irvine AH. Multi-disciplinary survey of erectile impotence. Can Med Assoc J 1983;128:1393–9.
27. Bulpitt CJ, Dollery CT, Carne S. A symptom questionnaire for hypertensive patients. J Chronic Dis 1974;27:309–23.
28. Ende J, Rockwell S, Glasgow M. The sexual history in general medical practice. Arch Intern Med 1984;144:558–61.
29. Stevenson RWD, Szasz G, Maurice WL, Miles JE. How to become comfortable talking about sex to your patients. Can Med Assoc J 1983;128:797–800.
30. Federman DD. Impotence: etiology and management. Hosp Pract 1982;17:155–9.

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