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Clinical Study of Sexual Dysfunction in Men with Type 2 Diabetes Mellitus

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ABSTRACT

Men with diabetes mellitus have a significantly higher prevalence of erectile dysfunction than the general population. This study is planned to assess the various aspects of sexual functions like libido, erectile function and ejaculatory function in male with type 2 diabetes mellitus. Fifty male type 2 diabetic patients were included. All the patients were interviewed and examination of external genitalia performed. Penile blood flow was assessed by compression method and nocturnal penile tumescence was assessed by "stamp test". Libido was normal in 40%, erection was present in 48% and ejaculation was present in 74% of the subjects. Retrograde ejaculation was reported from 4% of patients. Early morning erection was present in 50%, orgasm was attained by 50%. Testicular sensation was absent in 20% of patients. Penile blood flow was absent in 4%. Stamp test for nocturnal penile tumescence was positive in 40% of patients. Sexual dysfunction is common in diabetic males and may be associated with peripheral neuropathy and peripheral vascular disease. In our set up, sexual dysfunction alone does not bring the patient to physician. Sexual history is to be elicited in male type 2 diabetics. Simple test like stamp test can be useful in evaluating sexual dysfunction.

Keywords: Penile tumescence, stamp test, erection, ejaculation.

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INTRODUCTION

Sexual function is a complex blend of anatomic, neurologic, metabolic, endocrine and psychic factors more than any other human activity. Disorder of only one or combination of the above factors can result in sexual dysfunction. Though the exact prevalence of sexual dysfunction in general population is not known, all authorities agree that this problem is not uncommon in diabetic males. Men with diabetes mellitus have a significantly higher prevalence of erectile dysfunction than the general population ranging from 35% to 75% [1-3]. Impotence has been found to be an age dependent disorder that is accelerated in the diabetic men. Sexual dysfunction can occur at an early age in a diabetic and could be the presenting symptom of diabetes.

Since the sexual dysfunction is common in diabetic patients, this study was carried out to evaluate the various aspects of sexual dysfunction namely libido, erectile function and ejaculatory function in male type 2 diabetics in our set up.

MATERIALS AND METHODS

Subject selection

A total number of 50 diabetic male patients admitted to Government Wenlock Hospital, Mangalore and Kasturba Medical College & Hospital, Attavar, Mangalore were included in the study. The approval of the institutional review board was obtained prior to the study initiation. All the patients voluntarily signed the informed consent form. Inclusion criteria were any type 2 diabetic male patient of less than 65 years of age irrespective of the duration of diabetes. Patients married and living in a stable relationship with a female sexual partner for a period not less than one year was considered. Patients those who have not had even one coital experience in the preceding year, those who are not on hypoglycaemic drugs (i.e., the patients with diet control only) and patients with major psychopathology before the onset of sexual dysfunction or presence of any other major illness other than diabetes were excluded from the study.

All the patients were interviewed over two or three sessions in the hospital. A detailed history regarding sexual function such as libido, erection, ejaculation was taken which also included the use of drugs which can produce sexual dysfunction. After thorough systemic examination patients were examined for any abnormalities of external genitalia to rule out local causes. Testes were palpated for pain sensitivity. Testicular sensation and bulbocavernous reflex were checked. Tendon reflexes in lower limbs and vibration sensations were checked to rule out neuropathy. To rule out vascular disease, all the peripheral pulses in lower limbs were checked.

Penile blood flow was assessed by compression method which is simple and non-invasive test for grossly determining the blood flow to the penis. The corporal body is gently compressed and quickly released to observe how quickly the blood returns to penis.

Nocturnal penile tumescence was assessed by "stamp test" which is a simple test for assessing nocturnal erections. The patient is asked to stick a strip of postage stamps around the base of the penis overnight and asked to observe the snapping of the stamp strip the next day morning. Snap indicates presence of penile tumescence in the night and rules out organic cause.

The fasting blood sugar (FBS) levels were estimated to evaluate any relation between severity of impotence and level of diabetes control.

Statistical analysis

The acquired data was analyzed by using the SPSS statistical software 15. The prevalence of the study population was calculated as percentages. The association between potency and impotency with type 2 diabetes was assessed using chi-square tests. P value of <0.05 was considered statistically significant.

RESULTS

The following observations were made during the study regarding sexual function.

History

Sexual function was normal in 40% of men. Libido was normal in 40%, erection was present in 48% and ejaculation was present in 74% of the subjects. Retrograde ejaculation was reported by 4% of patients. Early morning erection was present in 50%, orgasm was attained by 50% and 80% of partners had desire to have sex. Previous sexual function was satisfactory to all patients and those with sexual dysfunction had the history of gradual onset of sexual dysfunction.

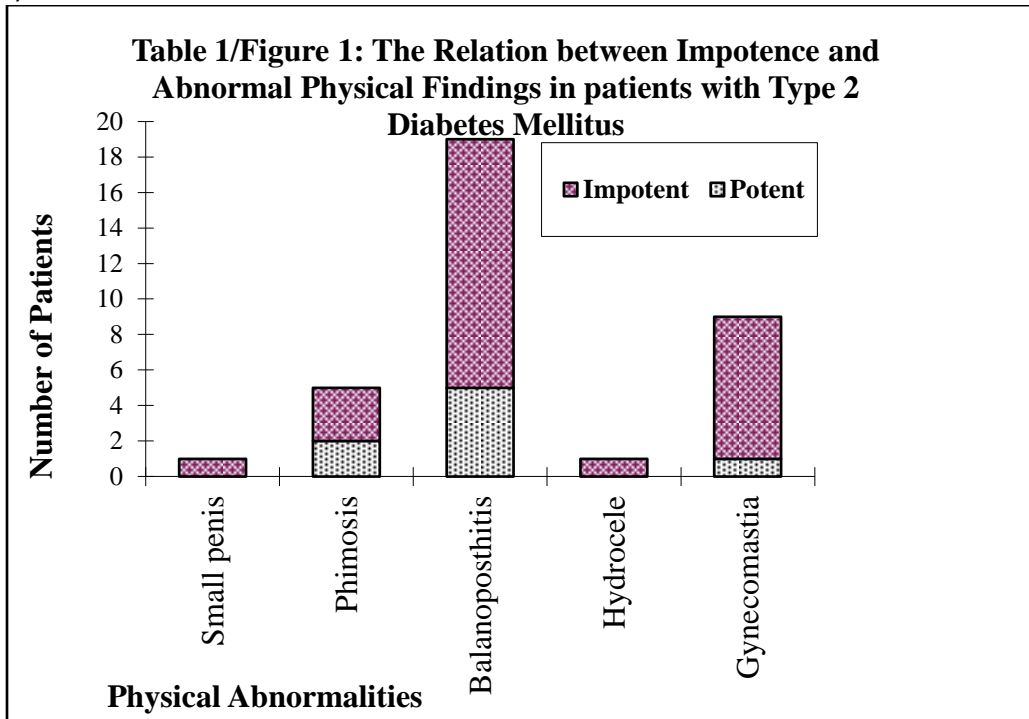
Out of the total number of patients, 13 (26%) were hypertensives on treatment with antihypertensives, out of which 69% were impotent. Nifedipine was prescribed to seven patients, three were on atenolol, one on lisinopril, one on amlodipine and one on a combination of amlodipine and lisinopril. Smoking habit was present in 70% of patients of which 63% were impotent. Alcohol consumption was reported by 46% of subjects out of which 74% were impotent.

Examination of external genitalia

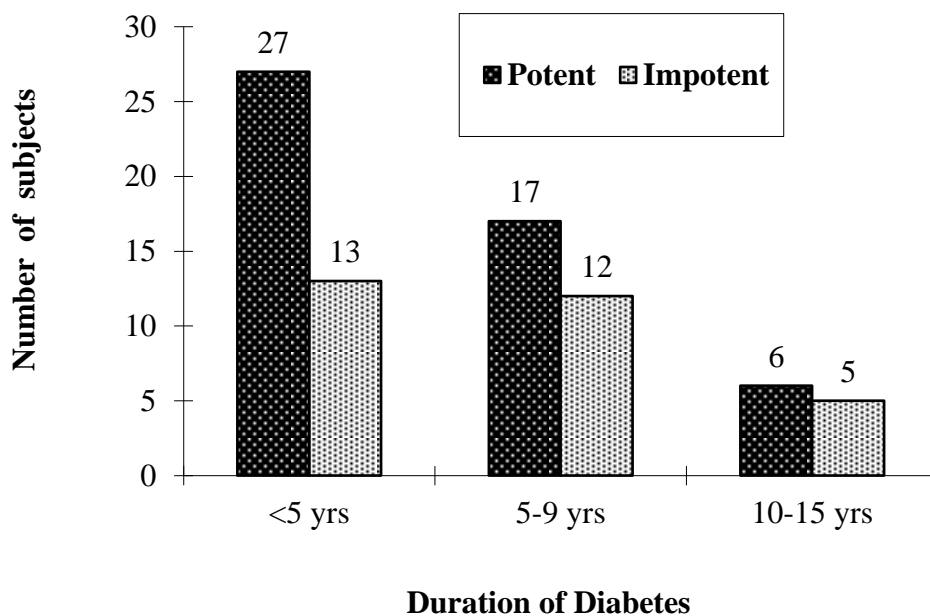
Abnormalities in external genitalia were seen in 50% of patients of which 76% had balanoposthitis, 20% had sever phimosis and 4% had small penis (< 5 cm). Testicular sensation was absent in 20% of patients. The bulbocavernous reflex in 8% of patients, vibration sensation in 30% of patients and ankle reflex in 34% of patients were absent (Table/Figure.1).

Penile blood flow was absent (by compression method) in two patients (4%). Peripheral pulses were absent in 10 patients (20%). Stamp test for nocturnal penile tumescence was

positive in 20 patients (40%) which show that 60% of the patients had erectile dysfunction ($P < 0.001$).



Table/Figure 2: Duration of Diabetes and Incidence of Sexual Dysfunction



Fasting blood sugars were abnormal in 64% of patients. Average duration of diabetes was seven years and average duration of sexual dysfunction was 6.5 years (Figure 2).

DISCUSSION

Sexual dysfunction occurs in both Type 1 and Type 2 diabetes mellitus. Impotence occurs in 40-50% of all long term diabetic men of all ages [1]. Erectile dysfunction in diabetes is caused by chronic complications like micro- or macroangiopathy or neuropathy and not primarily by a hormonal disorder. It increases with age and virtually present in all men suffering from autonomic neuropathy [4]. Inability to achieve and maintain an erection is the main and earliest abnormality [5]. Orgasmic sensation and libido remain, distinguishing between psychogenic and organic cause of impotence [6].

In our study, the incidence of erectile dysfunction is 60%. This corroborates with the findings of others wherein Schiavi *et al* [7] have showed 77.5%, Henis O. *et al* [2] have showed 73.5%, Sayuk GS. *et al* [3] have showed 71.1%, Lehman T. P. *et al* [8] have showed 70% of diabetic men have erectile dysfunction. This shows that significant proportion of men with diabetes mellitus have sexual problems. Most of the patients are hesitant to reveal this to the physician. Unless a leading question is asked regarding sexual problems, this may go totally undetected.

The results of this study indicate that as the age advances, the incidence erectile dysfunction also increases. This could be due to the factor that these patients may be having diabetes for a longer duration. It is clear from the study that as the duration of diabetes increases, the incidence of impotence increases. As the duration increases, chances of patient developing neurological or vascular complications increases and this could be the cause of increased incidence of impotence. The average duration of sexual problems in our study was 6.5 years. In a study by Fairburn C. G. *et al*, it was 4.4 years [9]. This may be due to the fact that our patients do not reveal the sexual problems at an earlier stage.

Since it is likely that the various etiologic factors interact, it is not surprising that no simple associations have emerged. It is probable that the erectile failure of many diabetic men is in fact the result of a progressive physical disorder such as autonomic neuropathy, superimposed upon this is the psychological reaction of the patient and his partner which may significantly worsen the problem [10]. The concept of diabetic impotence is oversimplified. In diabetic men physical factors will interact with the psychological factors to produce a variety of clinical pictures. If diabetic impotence is viewed in this way, it may be possible to improve the gloomy prognosis by using appropriate counselling to minimize the psychological reaction to sexual dysfunction.

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