SEXUAL DYSFUNCTION IN YOUNG MEN: PART 2

In the second part of our series on sexual dysfunction, the authors look at erectile dysfunction, Peyronie's disease and hypoactive desire disorder.

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In this second part of the series, we will explore the other common sexual dysfunctions.This includes erectile dysfunction (ED), Peyronie's disease and hypoactive desire disorder.

Erectile dysfunction

ED is defined as the persistent inability to attain and/or maintain erection sufficient for satisfactory sexual performance.[1] The Massachusetts Male Aging Study (MMAS) was one of the first studies to estimate the incidence of ED.[1] It reported an annual incidence per 1,000 of 12.4 in men aged 40-49 and 25.9 in men aged 40-69. A more contemporary study found that one in four newly diagnosed cases of ED was in men aged 40 years or less.[2] In addition, young men had significantly lower rates of co-morbidities, lower BMI but more frequently reported smoking and illicit drug use[2]. The rates of severe ED were 48.8% versus 40% in older men.

Severe ED was defined using the International Index of Erectile Function (IIEF) questionnaire. This validated questionnaire consists of 15 questions which assess the five domains of sexual function. Severe ED is a score of ten or less with a score of 26-30 indicating normal erectile function. ED is significantly associated with diabetes, heart disease, hypertension, smoking and obesity. The correction of risk factors has been shown in multiple studies to improve erectile function. The presence of ED in a young man should always alert the physician to the possibility of future risk of cardiovascular disease (CVD). ED may precede clinically overt CVD by two-five years, therefore offering a window of opportunity for early risk modification.[3]

TABLE 1: CAUSES OF ED

Causes (impotence)	Conditions
Inflammatory	Prostatitis
Mechanical	Peyronie's
Psychological	Depression, anxiety, stress, relationship problems
Occlusive	Arteriogenic: hypertension, smoking, hyperlipidaemia, diabetes, vascular disease Venogenic: impaired veno-occlusive disease
Trauma	Pelvic fracture, spinal cord injury, penile trauma
Extra factors	Iatrogenic: pelvic surgery, radiotherapy Other: priapism, renal failure
Neurogenic	Spinal cord: spina bifida, multiple sclerosis, tumour Peripheral neuropathy: diabetes, alcohol excess
Chemical	Antidepressants, anti-anxiolytics, anticonvulsants,
Endocrine	Hypogonadism, thyroid dysfunction, hyperprolactinaemia

Assessment

History

- Presenting complaint:
  - Clarify nature of problem
  - Duration: lifelong vs new
  - Onset: gradual vs sudden
  - Organic vs psychogenic (see table 2)
  - Severity (consider IIEF-questionnaire [www.baus.org.uk/Resources/BAUS/Documents/.../iief.pdf])
  - Precipitating or exacerbating factors
  - Relationship problems
  - Any associated sexual problems
- Drug history: illicit or prescription drugs
- Psycho-social history
- Co-morbidities
- Underlying condition (see above)
  - Exclude hypogonadism.

TABLE 2: DIFFERENCES BETWEEN PSYCHOGENIC AND ORGANIC ED[4]

Characteristic	Psychogenic	Organic
Onset	Acute	Gradual
Circumstances	Situational	Global
Course	Intermittent	Constant
Non-coital erection (erections not associated with Sexual intercourse)	Rigid	Poor
Physiological erections (e.g. morning or nocturnal erections)	Normal	Inconsistent
Psychosexual problems	Long history	2° ED
Partner problems	At onset	2° ED
Anxiety/fear	Primary	2° ED

The examination should be focused on identifying any organic causes of ED, but most will reveal very little. It is important to measure BMI and blood pressure.

TABLE 3

Investigations
Glucose-lipid profile
Early morning testosterone (repeat if abnormal)
LH/FSH (if abnormal testosterone)
ECG

Treatment

Treatment may be divided into three:

- Psychosexual counselling
- Correction of risk factors
- Oral medications.

Psychosexual counselling

This should be provided by a specialist in psychosexual therapy. However, when counselling young men it is vitally important to explain that erections occur with relaxation and that anxiety or high stress levels are physiologically inhibitory to normal erectile function.

Correction of risk factors

There is now extensive evidence to support the beneficial effects of smoking cessation, exercise and weight loss on erectile function.[5,6,7] In one study, a BMI above 28.7 was associated with a 30% higher risk of ED than a BMI of 25 or less.[5] The control of diabetes and hypertension are also beneficial.[8] A detailed review of current medication should be performed to change or stop drugs with known negative effects on erectile function especially diuretics and beta-blockers. These should be replaced with angiotensin receptor blockers where possible. Opiates, antipsychotics and antidepressants may also affect erectile function.

Oral medications

The mainstay of oral medications is the use of phosphodiesterase-5 inhibitors (PDE-5i). The three most commonly used PDE-5is are sildenafil, tadalafil and vardenafil. They each have different pharmacokinetic and side effect profiles. It is important prior to starting them to counsel the patient about their appropriate usage, side effects and interactions with fatty meals. The PDE-5i chosen should be patient dependant; for example those who desire spontaneity may be best managed with tadalafil with its long duration of action while sildenafil is associated with the hardest erections. We recommend using the maximum dose on commencement of treatment and trialling more than one PDE-5i before labelling the patient as a non-responder. Non-surgical options include a vacuum device and the administration of alprostadil. The vacuum device provides negative pressure to the penis to produce an artificial erection. The efficacy is estimated to be 90% although men may complain of a cold erection, penile pain or numbness. Alprostadil is synthetic prostaglandin E which may be administered intracavernosally or intraurethrally. Men will need to be taught how to administer the drug and warned of potential adverse events. The efficacy of intraurethral injection is estimated to be 85%.

TABLE 4: ORAL MEDICATION

Parameter	Sildenafil	Tadalafil	Vardenafil
Onset	30mins	30mins	30mins
Tmax	1 hour	2 hours	4.5hours
$T_{1/2}$	3.8hours	17.5 hours	3.9hours
Interaction With fatty meal	Impairs action	No effect	Impairs action
Duration	12 hours	36 hours	12 hours
Doses	25, 50, 100mg	10, 20mg	5, 10, 20mg
Specific side effects	Visual disturbance	Myalgia, back pain	Visual disturbance

The indications for the provision of PDE-5i on the NHS include distress caused by ED, pelvic surgery, diabetes, renal dialysis and neurological disease.

Hypoactive sexual desire disorder (HSDD)

This is defined as the persistent or recurrent absence or deficit of sexual fantasies and desire for sexual

activity which causes distress.[9] It may be situational, general, lifelong or acquired. This is a difficult condition which may have both biological and psychological causes which interact to create the final sexual dysfunctional picture. It has an estimated incidence of up to 39.9% in some series although it is probably under-reported.[9,10] It may commonly occur in association with other sexual dysfunctions or be mistakenly diagnosed as erectile dysfunction.[9,10] A study by Carvalhelra *et al* found the odds of reporting distressing lack of interest in sex was significantly associated with intrapersonal and interpersonal factors.[10] Lack of interest in sex was more likely to be reported by men with low self-confidence in their erectile function (4.9 times), men who considered their partner "neither attractive nor unattractive" (2.7 times), and men in relationships lasting five years or longer (1.5 times).[10] A self-assessment test found the most common reasons to be tiredness, work stresses and relationship problems (passive partner, conflicts and communication issues).[10]

HSDD is the most common sexual dysfunction experienced by psychiatric outpatients.[9] Schizophrenia, depression and their drug treatments may all be associated with HSDD. The drugs which may adversely affect desire include tricyclic antidepressants (TCA) and selective serotonin uptake inhibitors (SSRIs). HSDD may result in non-compliance which may subsequently lead to relapse of the man's psychiatric condition. It is therefore vitally important that sexual function is assessed at baseline and during treatment.[9]

TABLE 5: ASSESSMENT AND MANAGEMENT OF HSDD[9,10,11]

Psychological
Stressors: work, finance, relationship, health
Fatigue: long/irregular working hours
Lack of psychological well-being: depression, anxiety, low self-esteem
Relationship problems: conflict, poor intimacy, sexual incompatibility
Medical
Biological: DM, thyroid disorders, hypogonadism
Iatrogenic: SSRI, anti-psychotics, ß-blockers, monoamine oxidase inhibitors
Lifestyle: excess alcohol intake
Chronic conditions: renal failure and dialysis, heart failure, HIV
Management
Correct underlying medical causes
Review medications
Relationship counselling
Psychotherapy

HSDD may also be associated with chronic conditions and endocrinopathies i.e. diabetes mellitus, thyroid disorders and hypogonadism.[11]

Hypogonadism

This is a clinical syndrome caused by androgen deficiency. This may adversely affect multiple organs but particularly the development and maintenance of normal reproductive and sexual function. Sexual dysfunction is one of the main reasons for these men seeking medical help.[12]

Men with untreated hypogonadism are at greater risk of:

- Osteoporosis
- Diabetes mellitus
- Dyslipidaemia
- Obesity
- Cardiovascular morbidity and mortality.[12]

TABLE 6: SAFETY MONITORING ON TRT

Baseline
Testosterone
LH/FSH/Prolactin
FBC: Hb, haematocrit
PSA (if >45 yrs.)
DRE
Uroflowmetry: to exclude significant bladder outlet obstruction
Bone densitometry scan
LFTs, fasting lipid profile
3-6 months
Testosterone
DRE
PSA
FBC
Response to TRT
1 year
FBC
Lipid profile
DRE
Subsequent screening
Testosterone: 6-12 monthly
FBC: 6-12 monthly
Lipid profile: annual
PSA: 6-12 monthly
DRE: annual
Bone densitometry scan: 24 months

Hypogonadism may be primary or secondary. It is important to repeat the early morning testosterone measurement if the initial result is abnormal (<8nmol/L) or falls within the equivocal range (8-12nmol/L). In addition, the measurement of luteinising hormone (LH) and prolactin may be useful in excluding underlying pathologies. A low testosterone and raised LH indicates primary hypogonadism while a low testosterone and normal or low LH may indicate a pituitary tumour even with a normal prolactin.[12] There is no role for testosterone supplementation in eugonadal men with sexual dysfunction.[12] Men with sexual dysfunction and hypogonadism should receive testosterone replacement therapy (TRT) after appropriate counselling and baseline investigations (see Table 6). The treatment modality may be oral, intramuscular, topical, sublingual or via a subdermal implant.

Peyronie's disease (PD)

This is a benign condition with a poorly understood aetiology. However, it is postulated to be due to an abnormality of the tunica albuginea whereby repetitive microvascular or traumatic injury results in the formation of fibrotic plaques.[13] The underlying corpora cavernosus is unable to fully lengthen during erection producing curvature of the penis. The degree of curvature may prevent vaginal penetration. The prevalence is estimated to be 0.4-9.0%.[13] The condition has two distinct phases:

- Acute inflammatory
- Quiescent chronic fibrotic

The acute phase is associated with painful erections, evolving penile deformity and a soft nodule/plaque.[13] This phase lasts for between six and12 months. Pain may present in 35-45% of cases, although 90% of cases resolve within the first12 months.[13]

The chronic phase is associated with absence of pain, stabilisation of penile deformity and hard palpable nodules.[13] This phase usually lasts nine-12 months. The natural history is that 30-50% of men worsen, 47-67% stabilise and three-13% improve.[13]

Management

The management of PD is divided into surgical and non-surgical treatment. Non-surgical treatment is aimed at the early stages of the disease. The various agents work by reducing pain, improving curvature and reducing plaque size.[13,14] However, the evidence base is controversial and weak. Surgical treatment usually involves tunical lengthening or shortening procedures or the insertion of a penile prosthesis in severe cases. The indications for these procedures are inability to have penetrative sexual intercourse or erectile dysfunction. Men must be in the chronic phase of the condition. It is important for them to be counselled that all surgical procedures may be associated with penile shortening or erectile dysfunction of variable degrees.

Assessment

TABLE 8: ASSESSMENT[13]

History
■ Sexual history: ED, ability to have penetrative intercourse, history of penile trauma
■ Disease phase: acute vs. chronic, duration, bother
■ Associated co-morbidities: DM, Dupuytren's contracture, heart disease
Examination
■ Palpable nodule: position, tenderness, size
■ Penile deformity: degree and direction of curvature, penile length

Conclusion

Sexual dysfunction is a difficult problem which requires time and an in-depth conversation with the man and his partner. Although not covered in this article, it is important to ensure that sexual orientation is discussed as well as including discussions about sexual intimacy. Sexual dysfunction is often an embarrassing topic for men to discuss, especially in a world which often depicts all men as being heterosexual and always willing and able to engage in sexual intercourse. This is obviously untrue although it may lead to guilt and a reduction of self-esteem and sense of masculinity. Sexual function may be affected by a range of physical, emotional and relationship dysfunctions.

Men should ideally be reviewed both on their own and with their partner to determine and manage any relationship problems and psychological or psychiatric ill health. Sexual dysfunction may be the presenting symptom of serious underlying conditions such as diabetes, hypogonadism or major depression. It may also be taken as an early warning of future ill health in the form of the metabolic syndrome and cardiac disease. This may allow the opportunity to modify and reduce risk factors to lower future disease possibly with early referral to cardiology. It also provides an opportunity for reassurance regarding what is normal and that sexual function varies over time. The clinician should use unambiguous questions covering desire, spontaneous and stimulated erections, ejaculation and orgasm. Psychotherapy and counselling is an important aspect of treatment.

This is a common problem and only a small number present to clinicians. Therefore a systematic and sympathetic approach is required. The clinician must be comfortable discussing all aspects of sexual function.

References

For full references please visit www.bjfm.co.uk