Male sexual dysfunction

Clinical diagnosis and management strategies for common sexual problems

CPD

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Background
Male sexual dysfunction (MSD) can affect males of all ages. The most common problems associated with sexual dysfunction include low sexual desire, erectile dysfunction, Peyronie's disease and disorders of ejaculation and orgasm. Each of these male sexual problems can be difficult to treat, and some males may have more than one form of sexual dysfunction.

Objective
This review article provides an overview of the clinical assessment and evidence-based management strategies for MSD problems. Emphasis is placed on a practical set of recommendations relevant to general practice.

Discussion
Comprehensive clinical history-taking, tailored physical examination and relevant laboratory testing can provide relevant clues for MSD diagnosis. Modifying lifestyle behaviours, managing reversible risk factors and optimising existing medical conditions are important first-line management options. Medical therapy can be initiated by general practitioners (GPs) with subsequent referrals to a relevant non-GP specialist(s) if patients do not respond and/or require surgical interventions.

MALE SEXUAL FUNCTION is a complex biopsychosocial process that can be influenced by neurological, vascular, endocrine, psychological, interpersonal and sociocultural factors.[1,2] Sexual function is important for physical, psychosocial and emotional wellbeing[1] and serves as a marker for overall general health.[3] Male sexual dysfunction (MSD) can largely be divided into low libido, erectile dysfunction, Peyronie's disease and ejaculatory and orgasmic disorders.[1,4,5] It is estimated that a third of males will experience one form of MSD in their lifetimes.[1]

Low libido or hypoactive sexual desire disorder is defined as a decrease in sexual thoughts and desires for sexual activity,[1,6] and its prevalence can vary depending on exact definitions, methods of assessment and population demographics.[6] Erectile dysfunction is defined as difficulty achieving or maintaining an erection.[3,7–9] In contrast, males with Peyronie's disease report penile curvature, deformity, pain and length loss, with ensuing erectile dysfunction in advanced cases.[10,11] Ejaculatory disorders can be divided into premature ejaculation, delayed ejaculation, anejaculation and retrograde ejaculation.[12–15] Premature ejaculation is defined as the inability to control or delay ejaculation, resulting in psychosexual distress.[12,14] In contrast to anejaculation, where ejaculation is absent during orgasm, retrograde ejaculation occurs when semen enters the bladder instead of being released into the penis during orgasm.[13,15] Orgasmic dysfunction is the diminished intensity of an orgasm or an inability to achieve orgasm during sexual stimulation and can coexist with ejaculatory disorders.[5,13,15]

Relevant markers of MSD and general health

While it is common that psychiatric disorders and related pharmacological treatments are associated with MSD, the presence of MSD could be an important marker for underlying health. Erectile dysfunction is more common with increasing age and in those with multiple medical comorbidities, including metabolic syndrome and chronic medical illness.[2,3,8] It serves as an important marker of future cardiovascular risk, and literature has shown that the risks of cardiovascular disease and death increase steadily with the severity of erectile dysfunction.[3,8] In addition, there is a strong association between erectile dysfunction and lower urinary tract symptoms/benign prostatic hyperplasia.[3] Male hypogonadism, which is defined as a pathological disorder of the

hypothalamic–pituitary–testicular axis and biochemical low total testosterone level, can be associated with cardiometabolic complications and ensuing erectile dysfunction, low libido, delayed ejaculation and anorgasmia.[1,4,5,16]

This article provides an overview of the current understanding of and management strategies for MSD. A Medline literature search for English language articles was performed using the following keywords: 'low sexual desire', 'erectile dysfunction', 'Peyronie's disease', 'ejaculatory disorder' and 'orgasmic disorders'. Relevant clinical guidelines are summarised in this narrative review. Given the broad scope of this review paper, emphasis is placed on relevant clinical assessment and a practical set of recommendations pertinent to general practice.

Diagnostic assessment

Clinical history

Patient history remains an integral part of evaluating patients presenting with MSD given that these dysfunctions represent self-reported conditions and many lack confirmatory diagnostic tests.[1–5,15,17] Emphasis is placed on an open dialogue in a face-to-face consultation and being mindful of the patient's sexual concerns with sensitivity towards the patient's unique ethnic, cultural and personal background.[1,8] Completion of relevant validated questionnaires can provide additional useful information.[8]

It is important to ascertain the exact MSD, potential causative (contributing) factors and relevant modifiable factors.[1–5,15,17] Potential aetiologies such as medications, psychological stress, mental wellbeing, medical comorbidities, medications, partner-specific issues and tobacco, drug and alcohol consumption should be explored (Table 1).[2,3,8,15]

Physical examination

General physical examination should be undertaken with an emphasis on body habitus (secondary sexual characteristics), cardiovascular system and neurological status. A focused examination of the male genitalia includes palpation of testes size (based on an orchidometer) and a stretched penis for size and plaques.[4,7,8,10] It is important to maintain the patient's privacy, confidentiality and comfort, preferably in the presence of a chaperone.[1,8]

Laboratory testing

Initial evaluation is recommended with blood tests for cardiometabolic factors such as fasting glucose, glycated haemoglobin, lipid profile and hormone profile, in fasting state and collected in the early morning.[1,3,4,7,8] Further screening tests to exclude or confirm underlying aetiologies or comorbid conditions – with additional hormonal evaluation (eg thyroid function, prolactin and estradiol), penile colour duplex ultrasonography or semen analysis (post-orgasm urine analysis for retrograde ejaculation) – can be undertaken by a urologist.[1,8]

Management strategies

Management strategies are listed in Box 1. Modifying lifestyle behaviours, managing reversible risk factors and optimising existing medical conditions are important first-line management options before pharmacotherapy (Table 2) and should be performed in a holistic, patient-centred approach.[1–8]

Psychosexual counselling is an important consideration since the psychogenic component is common; ideally it should be done with the patient's partner. It can assist to reduce psychological distress, aid in patient education and improve treatment compliance.[1,2,5]

Low libido

Testosterone therapy is generally recommended for males with low libido and those with proven male hypogonadism.[5,15,16,18] Topical gel and intramuscular testosterone therapy are generally recommended in preference to oral tablets and patches. Furthermore, it is advised that other endocrinological

Table 1. Relevant history-taking

Sexual history	Medical history	Medications history	Psychosocial history
• Onset	• Cardiovascular diseases	• Antihypertensives	• Smoking
• Context	• Peripheral vascular disease	• Anti-arrythmias	• Alcohol
• Severity	• Diabetes mellitus	• Antidepressants	• Illicit substance
• Libido	• Pelvic trauma, surgery or radiotherapy	• Anxiolytics	• Mental health (eg anxiety or depression)
• Penile problems	• Endocrine conditions	• Hormonal therapy (eg androgen deprivation therapy)	• Social stressors
• Morning and/or spontaneous erections	• Neurological conditions	• Anti-epileptics	• Relationship problem(s)
• Ability to have sexual intercourse			
• Use of medications or sexual aids			
• Pornographic materials			
• Childhood sexual abuse and religious or sociocultural beliefs			

Table 2. Approved pharmacotherapy to treat male sexual dysfunction

Medication	Administration	Starting dose and maximum dose	Special comments
Male hypogonadism (with low libido)			
Testosterone 1% (in gel sachet 50 mg/5 g or actuation pump 12.5 mg/actuation)	Topical therapy; daily use	One sachet or two pumps daily (increase to two sachets or four pumps as required)	• Approved on PBS if patients meet specific criteria
Testosterone 2% (in actuation pump 23 mg/actuation)	Topical therapy; daily use	One pump daily (increase to two pumps as required)	• Approved on PBS if patients meet specific criteria
Testosterone esters (250 mg/mL)	Intramuscular therapy	Once every two weekly (dose and duration can be altered as required)	• Not approved on PBS
Testosterone enanthate (250 mg/mL)	Intramuscular therapy	Once every two weekly (dose and duration can be altered as required)	• Not approved on PBS
Testosterone undecanoate (1000 mg/4 mL)	Intramuscular therapy	Once every three monthly	• Approved on PBS if patients meet specific criteria
Erectile dysfunction			
Sildenafil	Oral therapy; 30 minutes before sex	Starting dose 25–50 mg Maximum dose 100 mg	• Medication half-life approximately four hours • Absorption affected by food and alcohol
Tadalafil	Oral therapy; 60 minutes before sex	Starting dose 10–20 mg Maximum dose 20 mg	• Medication half-life approximately 17.5 hours • Absorption not affected by food and alcohol
Tadalafil daily	Oral therapy; daily use	5 mg	• Medication half-life approximately 17.5 hours • Absorption not affected by food and alcohol
Avanafil	Oral therapy; 30 minutes before sex	Starting dose 100 mg Maximum dose 200 mg	• Medication half-life approximately 6–17 hours • Absorption not affected by food and alcohol
Vardenafil	Oral therapy; 30 minutes before sex	Starting dose 10 mg Maximum dose 20 mg	• Medication half-life approximately four hours • Absorption affected by food and alcohol
Alprostadil	Intracavernosal therapy; 30 minutes before sex	Starting dose 10 µg (in syringe system) Maximum dose 20 µg	• Medication half-life approximately 10 minutes • Risk of priapism (10%)
Premature ejaculation			
Dapoxetine	Oral medication; 30 minutes before sex	Starting dose 30 mg Maximum dose 60 mg	• Medication half-life approximately six hours • Absorption affected by alcohol but not food

PBS, Pharmaceutical Benefits Scheme

conditions (eg hyperprolactinaemia, thyroid dysfunction or diabetes) should be excluded or managed expectantly.[5,6] Appropriate therapy for anxiety or depression may also improve libido.[1,8]

Erectile dysfunction

Oral phosphodiesterase type 5 (PDE5) inhibitor medication remains the standard of care and is considered the first-line pharmacological intervention.[1,3,7,8,19] While PDE5 inhibitor medications are often effective, well tolerated and safe when prescribed appropriately, their use should be cautioned in males with unstable angina or who are currently taking nitrates therapy and follow careful discussion about the pros and cons of medications.[3,7,8,19] For patients with hypogonadism, restoring testosterone levels will improve PDE5 inhibitor efficacy and salvage PDE5 non-responders.[8,19] Intracavernous injection (ICI) of vasoactive agents such as prostaglandin E1 (also known as alprostadil) is recommended as second-line therapy in males who did not respond to oral PDE5 inhibitor treatment, and the prescription of these ICI medications should include a detailed discussion with the patient that consists of technical instruction and education about priapism.[7,8,19] Vacuum constriction devices can provide passive engorgement of the corpora cavernosa, and a constriction ring can be placed at the base of the penis to maintain an erection.[7,8,19] For patients who do not respond to or tolerate PDE5 inhibitor medications or are keen on more definitive treatment, a penile prosthesis implant can be offered following appropriate consultation with a urologist.[8,20] The role of regenerative therapy, such as low-intensity shockwave therapy and penile injection of stem cells or platelet-rich plasma, is not recommended since these methods lack long-term efficacy and safety records and are not properly regulated by the government.[8,21]

Peyronie's disease

The current evidence regarding the clinical efficacy of oral medication in Peyronie's disease is lacking, and these medications are used off-label.[10,11] Penile traction therapy can be a useful adjunct but requires patient adherence. Intralesional injection therapy is not widely offered in Australia, and the only approved Peyronie's disease medication, collagenase *Clostridium histolyticum*, has been withdrawn from the market.[10,11]

Penile reconstructive surgery remains the most effective treatment for Peyronie's disease, but patients should wait until the disease is stable with no penile pain.[10,11] Patients should be counselled on expected surgical outcomes and potential risks, such as recurrence of deformity, penile length loss, altered sensation and erectile dysfunction.[10,11] For those with pre-existing erectile dysfunction, a concurrent penile prosthesis implant is recommended.[20]

Ejaculatory and orgasmic dysfunctions

The best treatment approach for ejaculatory and orgasmic dysfunctions is a multimodal approach, with pharmacological, psychological and behavioural techniques used in combination.[12,14,15,22] Behavioural techniques for premature ejaculation include the stop-start technique (patients cease genital stimulation until arousal sensation subsides) or squeeze technique (squeezing of the glans prepuce during heightened arousal), while those with delayed orgasm might benefit from sexual counselling on arousal methods, genital stimulation or role-playing to increase sexual intimacy.[15,22]

A mechanical device that provides penile vibratory stimulation has been shown to improve penile sensitivity and, in turn, assist with delayed ejaculation and orgasmic dysfunction.[12,14] For those with retrograde ejaculation or delayed orgasms, electroejaculation is a viable option to retrieve semen for fertility purposes.[4,13]

Topical anaesthetic agents (eg lignocaine gel applied to the glans penis) can prolong ejaculation and increase sexual satisfaction, but a condom should be used to avoid numbness to the partner's genitals.[15,22] Dapoxetine, a short-acting selective serotonin reuptake inhibitor (SSRI), is the only approved medication for premature ejaculation.[15,22] However, various tricyclic antidepressants, SSRIs and tramadol have been used off-label to delay ejaculatory latency time, but these medications may be costly and can inadvertently cause erectile dysfunction or orgasmic dysfunction.[12,14,15,22] Sympathomimetic agents (eg imipramine or pseudoephedrine) can cause a contraction of the bladder neck, which prevents the ejaculate from flowing into the bladder, but these medications can cause hypertension or urinary problems.[12,14,15] Testosterone therapy is effective to improve orgasm in patients with hypogonadism.[8,16,18] Other off-label uses of medications such as bupropion, cyproheptadine or cabergoline have been shown in selected studies to treat delayed ejaculation and improve orgasm and sexual satisfaction, although further studies are warranted for their long-term efficacy and safety.[15,23]

Box 1. Key points on management strategies

- Modifying lifestyle behaviours
- Managing reversible risk factors, including medications
- Optimising existing medical conditions
- Psychosexual counselling
- Mechanical devices (for certain types of male sexual dysfunction)
- Pharmacotherapy (refer to Table 2)
- Surgery (for males with erectile dysfunction)

Conclusion

Comprehensive clinical assessment with relevant laboratory testing is important to assess for MSD. Modifying lifestyle behaviours, managing reversible risk factors, and optimising existing medical conditions are important first-line management. Medical therapy can be initiated by general practitioners

(GPs) with appropriate referrals to relevant non-GP specialists if patients do not respond and/or require surgical interventions.

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