

Full Length Research Paper

Psychological impotence: Psychological erectile dysfunction and erectile dysfunction causes, diagnostic methods and management options

Kingston Rajiah^{1*}, Sajesh K Veetil¹, Suresh Kumar¹ and Elizabeth M. Mathew²

¹International Medical University, No. 126, Jalan Jalil Perkasa 19, Bukit Jalil, 57000 Kuala Lumpur, Malaysia.

²Mallige College of Pharmacy, No. 71, Silvepura, Bangalore, 560090 Karnataka, India.

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Psychological impotence or erectile dysfunction is nowadays a pretty common yet misunderstood disorder. People often cannot detect it properly and misunderstood it for physical impotence. Psychological impotence is basically caused by psychological problems. Most of the times, this kind of impotence are curable. Recent study has shown that most of the cases of impotence are basically of this nature. Numbers of sexual problems were found to be frequent. Physical, social/emotional, and relationship factors were all found to have a significant impact on the prevalence of one or more sexual problems. In addition, we observed an important gender difference: increasing age was more consistently associated with sexual problems among men. Thus, sexual problems among women and men appear to share similar correlates, but physical factors may play a larger role among men. However, as men age, there may be more psychological and relationship issues as well that influence their sexual satisfaction and performance.

Key words: Psychological erectile dysfunction, psychological impotence, erectile dysfunction.

INTRODUCTION

Psychological impotence or erectile dysfunction is nowadays a pretty common yet misunderstood disorder. People often cannot detect it properly and misunderstood it for physical impotence. There are clear and distinct differences between these two. But before jumping into the differentiation of these two, it is advisable to have a clear concept in erectile dysfunction or impotence.

ERECTION

Men experience three types of erections:

1. Reflexogenic erections are induced by tactile stimulation of the genitals. Men with lesions of the

cervical or thoracic spinal cord (paraplegics) are still able to have this type of erection. A small number of men with complete transection of the spinal cord can also have erections which are psychogenically induced.

2. Psychogenic erections are induced by visual or memory associations.

3. Nocturnal erections occur during rapid eye movement (REM) sleep and may take place anywhere from three to six times a night, lasting from 20 to 40 minutes. Generally, nocturnal erections begin with the onset of puberty and diminish in intensity, duration and frequency later in life (Ackerman, 1994).

Erections during arousal and intercourse are often achieved as a combination of reflexogenic and psychogenic and a deficit in one or both areas can lead to impotency. When an individual is sexually aroused, a message from the brain travels down nerves to the penis (Mulligan, 1990). Chemicals called neurotransmitters are then released from the ends of the nerves in the penis.

*Corresponding author. E-mail: kingrajiah@gmail.com. Tel: 0060146400547.

Table 1. Factors and causes of erectile dysfunction.

Causes	Factors
Reduced blood flow to the penis.	Narrowing of the arteries. These include: getting older; high blood pressure; high cholesterol; smoking; diabetes.
Diseases which affect the nerves going to the penis	Multiple sclerosis, a stroke, Parkinson's disease
Injury to the nerves going to the penis	spinal injury, following surgery to nearby structures, fractured pelvis, radiotherapy to the genital area
Side-effect of certain medicines	antidepressants; beta blockers and some diuretics
Mechanical factors	probably due to pressure on the nerves going to the penis, from sitting on the saddle for long periods (especially during cycling)
Hormones	lack of a hormone called testosterone which is made in the testes
Mental health (psychological)	Stress. For example, due to a difficult work or home situation, Anxiety, Relationship difficulties, Depression

Stimulation of the penis can also cause local nerve endings to release neurotransmitter chemicals. The neurotransmitters which are released in the penis cause another chemical to be made called cyclic guanosine monophosphate (cGMP). An increase of cGMP causes the arteries in the penis to dilate (widen) (Kahn, 1995). This allows extra blood to flow into the penis. The rapid inflow of blood causes the penis to swell into an erection. The swollen inner part of the penis also presses on the veins nearer to the skin surface of the penis. These veins normally drain the penis of blood. Such that the flow of blood out of the penis is also restricted, this enhances the erection (Yoshikawa, 1993). The cGMP is soon converted into another inactive chemical. But, remaining sexually aroused whilst having sex, the brain keeps sending nerve messages to the penis which makes more cGMP to maintain the erection. When the level of cGMP falls, the blood flow to the penis returns to normal, and the penis gradually returns to the non-erect state (Wei, 1994).

IMPOTENCE OR ERECTILE DYSFUNCTION

1.) When due to some reason, during the time of sexual stimulation the pump of extra flood is hampered, then impotence or erectile dysfunction occurs. The cause may be physical, psychological or combination of both (Table 1). At times it becomes problematic to point out the reason of impotence (Kahn, 1995).

Psychological impotence or psychological erectile dysfunction

Psychological impotence is basically caused by psychological problems. Most of the times, this kind of impotence are curable. Recent study has shown that

most of the cases of impotence are basically of this nature (Mulligan, 1990; Wei, 1994). It may occur in a certain situation due to some specific reason or may be an effect of a particular incident. Most of the times, these incidents are related to emotion of an individual. Bereavement of your loved ones can cause you a temporary impotence. On the other hand, guilt arise from extra marital affairs can be cause of psychological impotence. Sometimes the impotence or erectile dysfunction caused by particular incident heals automatically in due course of time (Yoshikawa, 1993; Wei, 1994; Mbizvo, 1997). It can happen to every man. People from different age groups can be victims of this disorder. Increasing pressure and stress of modern life are acting as impetus to this disease. Our complex lifestyle and critical socio economic condition are making us vulnerable to this disorder. From a school going teenager to a super annuated person, every fertile male can be a victim of this disease (Yoshikawa, 1993).

Age groups

School going teenagers and young men: More than ninety percent impotence of this age group is basically psychological impotence. Nervousness and anxiety are the main reasons behind this kind of erectile dysfunction. Fear from having sex cause anxiety among this age group. Most of the cases are ephemeral in nature (Halliwell, 1994).

Middle aged men: The main reason of erectile dysfunction of this age group is personal and professional stress. Unfaithful partner or unhappy married life can cause impotence too (Halliwell, 1994).

Old age group: This age group is mainly vulnerable to physical impotence. But psychological erectile dysfunction also may happen at this mature age. Bereavement of partner, loneliness can be the cause of impotence (Halliwell, 1994).

Psychological or physical?

The best and safest way to know whether it is psychological or physical impotence is to consult a physician. Through medical test, the doctor will be able to point out the reason of erectile dysfunction. But, before consulting physician you are advised to follow few simple steps to know the reason. Morning erection and masturbating are two easy ways to know whether it is psychological or physical. If your penis erects normally during these two phases, then you can be sure that you do not have a physical problem (Wei, 1994; Mbizvo, 1997; Halliwell, 1994; Schmid, 1997).

Psychological erectile dysfunction is often temporary in nature. It heals automatically in due course. As, the time passes, the importance of an incident alleviate and thus help the patient to come back in normal state. So, it is advisable to not force a person who has gone through a hard phase of life to consult a doctor for treatment of psychological erectile dysfunction. Patience and effort of partner can create a magic in treating this disorder. If in due course the problem is not cured, then you can apply several therapies. Proper treatment can cure even the hardest of psychological impotence disorder (Schmid, 1997).

Diagnostic methods

Physician interview

1. The physician typically interviews the patient about many physical and psychological factors. The patient must be as frank as possible for his physician to make a diagnosis. He should not interpret these questions as intrusive or too personal if he expects to obtain help. These questions are very relevant and important for determining the proper approach. Even when erectile dysfunction has a clear physical cause, relationships and psychological factors can also have an effect (Brown, 1995).

Physical examination

The physician should perform a careful physical exam, including examination of the genital area and a digital rectal examination (the doctor inserts a gloved and lubricated finger into the patient's rectum) to check for prostate abnormalities (Brown, 1995).

Laboratory tests

These include urinalysis, complete blood count, and measurement of fasting blood glucose, creatinine,

cholesterol and triglycerides, and testosterone. If the man's testosterone concentration is low, serum free (or bioavailable) testosterone, prolactin, and luteinizing hormone should be measured (Mbizvo, 1997).

Trials using treatments for erectile function

A useful approach is to administer a treatment for erectile dysfunction and then observe the response: Physicians now usually recommend a trial of sildenafil to test for an erection response after 30 to 60 min. This drug is replacing more invasive and expensive tests, such as an injection of papaverine or prostaglandin E1, medications that dilate blood vessels in the penis. They produce an erection in about 15 min. After administering the treatment and waiting the appropriate amount of time, the physician then observes the erectile response, curvature of the penis, and response after erection, sometimes using an ultrasound scanner to assess blood flow (Sikora, 1995).

Monitoring night time erections

Tests that monitor nighttime erections may be used to determine if the causes of erectile dysfunction are more likely to be psychological. Neither of the following methods is helpful in determining a physical cause for erectile dysfunction:

Snap-gauge test: The snap-gauge test monitors the man's ability to achieve an erection during sleep. It is a very simple test. When the man goes to bed, he places bands around the shaft of his penis. If one or more breaks during the course of the night, it provides evidence of an erection. In this case, a psychological basis for the erectile dysfunction is likely (Sikora, 1995).

Rigi scan monitor: A more sophisticated and more expensive device is the Rigi Scan monitor, which makes repetitive measurements of rigidity around the base and tip of the penis. This test is quite accurate but may fail to detect mild cases of erectile dysfunction (Sikora, 1995).

Penile brachial index

The penile brachial index is a measurement that compares blood pressure in the penis with the blood pressure taken in the arm. Problems with the arterial flow to the penis can be detected using this method (Schmid, 1997).

Imaging techniques

Imaging tests may be used in certain cases, but they are

expensive and often limited to younger men. Anyone considering these tests should have them done in a specialized setting by professionals experienced in their use. Dynamic infusion cavernosometry and cavernosography (DICC) is usually only given to young men in whom some blockage of the penis or physical injury of the pelvic area is suspected. After an erection is induced with drugs, the following four steps are taken:

1. The penile brachial index is taken.
2. The storage ability of the penis is gauged.
3. An ultrasound of the penile arteries is performed.
4. An x-ray of the erect penis is taken.

Duplex doppler ultrasound: An ultrasound technique called duplex Doppler ultrasound may be useful alone or with sildenafil in detecting some causes of erectile dysfunction, such as leakage from blood vessels (Schmid, 1997; Brown, 1995; Sikora, 1995).

Treatment options

Dietary treatment

The best way to correct impotency is to treat its primary cause and vitamins, minerals, herbal and homeopathic medicines can help. Which remedies to use and how long they will take to work depends on the type of dysfunction, so therefore a diagnosis of the cause of the dysfunction is needed (Reid, 1996). As with any genital-urinary tract condition, a good nutritional program is a must. Most impotency problems respond to nutritional therapy, whether they are of a psychological or physiological nature. For instance, caffeine and tobacco are stimulants, yet both also relax muscles and deplete nerve endings of neurotransmitters, making it more difficult to maintain an erection. Alcohol and recreational drugs have similar effects and ultimately promote impotency (Reid, 1996; Morales, 1995). Prolonged use of drugs and alcohol can lead to depression as well as, be a sign that it is present. Vitamins and minerals, which are essential for erections to occur, are depleted with extended use of tobacco, caffeine, sugar, alcohol and recreational drugs. Allergies to food and other substances rarely lead to impotency unless they cause discomfort in the genital or lower urinary tract and thus interrupt normal function. Allergies should be considered only as a last resort when all other possible causes are ruled out (Reid, 1996).

Studies show that high cholesterol also contributes to impotency. An increase in erectile dysfunction was noted in a group of 3,250 men ages 26 to 85 years in relationship to their serum cholesterol. For every mmol/l of cholesterol increase above the normal range (normal = 3.63 to 5.18), a greater risk of impotency has been shown (Wei, 1994). The authors concluded that high levels of cholesterol and low levels of HDL cholesterol were important risk factors for the development of impotency

(Morales, 1995).

Testosterone replacement therapy

Replacement therapy for hypogonadism: Testosterone replacement therapy may be effective in inducing puberty in adolescent boys with hypogonadism and may also be helpful for some adult patients with the condition. Some experts believe testosterone replacement therapy also may be helpful for older men whose testosterone levels are deficient. Over the course of about three months, it may gradually heighten sexual interest. It can also improve bone density, boost energy and mood, and increase muscle mass and weight (Morales, 1995). Forms of testosterone therapy include the following:

1. Muscle injections using testosterone enanthate (Andryl, Delatestryl) or cypionate (Andro- Cyp, Depo-Testosterone, and Virion) has been the standard administration.
2. Skin patch (Testoderm, Testoderm TTS, and Androderm): Depending on the brand, patches may be applied to the skin of the scrotum every 24 h or to the abdomen, back, thighs, or upper arm. In the latter case, two patches are required every 24 h. Testoderm and Testoderm TTS may cause less skin irritation than Androderm. The skin patch achieves normal testosterone levels in between 67 and 90% of men.
3. Skin gel (AndroGel): At this time, the gel is applied only to the same parts of the body as the patch. In one study the gel produced normal testosterone levels in 87% of men. A gel applied to the penile skin is being investigated for men with hypogonadism and erectile dysfunction. Pregnant women must avoid contact with the gel because theoretically the testosterone could harm the fetus (Morales, 1995).

Yohimbine

Yohimbine (Yocon, Yohimex) is derived from an herbal remedy. It appears to boost erectile function by improving blood flow. Studies have been inconclusive about its benefits, but a recent analysis of seven trials reported that between 34 and 75% of men achieved favorable results when taking 5 to 10 mg. Side effects include nausea, insomnia, nervousness, and dizziness. Large doses of yohimbine can increase blood pressure and heart rate. One death has been reported from taking tablets of the standard dosage (5.4 mg). More rigorous studies are needed to confirm its effectiveness, and men suffering from anxiety or hypertension are cautioned against its use (Reid, 1996).

To boost success rates, some doctors suggest combining it with the antidepressant drug trazodone if a patient is also depressed. The American Urologic Association does not recommend yohimbine for treating

impotence, although some experts believe it is an inexpensive and reasonable option for some men. It should be noted, that Yohimbine is available over the counter as an herbal remedies. It is not government regulated and brands vary in effectiveness and quality (Morales, 1995).

Experimental agents

Oral Phentolamine: Phentolamine is an agent that has been used in injections for achieving erection. The drug blocks adrenaline (epinephrine), which dilates blood vessels. An oral form of phentolamine has been developed that may be of some benefit for men with mild impotence. The drug is not as effective as sildenafil (Viagra), but it does not interact with nitrates. In some studies, it was effective in producing erections within 20 to 40 min in 40 to 50% of men with mild to moderate erectile dysfunction. Side effects include nasal congestion, headache, light-headedness, low blood pressure, tachycardia (increased heart rate), and nausea (Farnsworth, 1995).

Apomorphine: Apomorphine, which is taken as a tablet under the tongue, causes a sexual signal in the brain to trigger an erection, although it is not an aphrodisiac. Studies report improved erectile function in 40 to 60% of men, with the better results occurring at the higher doses. High doses, however, also cause severe side effects, including nausea (in between 15% to a third of patients), yawning, fatigue, dizziness, sweating, excitability, and aggression. Apomorphine appears to be safe for men with diabetes or stable heart disease, and is well tolerated by men with high blood pressure. It is available in Europe but the manufacturer withdrew the drug application in the US (Ellingwood, 1998).

Alpha-MSH agents: Researchers are investigating drugs that are derived from a natural substance released in the brain called alpha-MSH, which increases sexual behavior. One agent called Melanotan II is showing promise in investigative studies. In one study, 60% of men achieved erections after injections of Melanotan II, but up to 20% of men experience severe nausea. It appears to increase sexual desire and takes over an hour to take effect. Another promising agent is a nasal spray called PT-141 that may enhance erectile function by stimulating receptors in the hypothalamus section of the brain. This area of the brain is associated with emotions and sexual arousal (Murray, 1998).

Psychogenic therapy for psychological erectile dysfunction

There are namely two kinds of therapy- counseling and

psychodynamic therapy. Counseling deals with the problem in conscious state. It addresses the problem of conscious mental state and refurbishes the lost interest in the mind of patient. On the other hand, according to psychodynamic therapy the root of the cause is hidden into the subconscious mind. The cause of impotence or psychological erectile dysfunction is some subconscious conflict. So it addresses the problem of subconscious mind and reestablishes the lost interest. It encourages the patient to come out with his problem frankly. In both of these therapies, the partner of a patient has an important role to play. Without their involvement the chance of succeeding reduces drastically (Felter, 1998).

Sex therapy for psychological erectile dysfunction or impotence

This therapy insists on sensational pleasure rather than hardcore arousal of sex. This therapy basically reduces the stress factor involved in a sexual intercourse by helping normal erection through pleasant touch in partner's body. This method is the brainchild of Masters and Johnsons. They have imposed importance in pleasurable physical contact. This approach instructs a couple to concentrate on their thinking instead of activity. According to this therapy, you can easily arouse your organ with the pleasant touch of partner's body (Felter, 1998).

Following this process you can avoid the stress associated with erection. After your arousal, you can refrain yourself from the sensational touch and continue your sex activity as long as you want. This pleasurable way of making sex with your partner drives away your negative emotions like fear, stress, guilt etc. In that fashion this therapy helps you to fight with psychological erectile dysfunction. It helps you to build more secure and reliable sexual life (Lue, 2000).

Surgical treatment

Performing a surgery for a penile prosthesis implantation is also a valid option, and it has highly satisfactory results for the solution of erectile dysfunction problems. The use of prostheses began twenty years ago, with a new technique that consisted in incorporating silicone rods inside the corpora cavernosa of the penis in order to achieve sufficient penile rigidity for sexual intercourse. Later, other rigid silicone prostheses were developed, which can easily be placed surgically in each corpus cavernosum. Penile prostheses have been improved and semi-rigid types have been developed, which are malleable and easier to handle by patients. Their malleability is determined by an inner silver wire in the silicone cylinders (Jackson et al., 2006).

Nowadays, these cylinders are quite widely used and

there are different types. Another prosthesis which was later developed is inflatable, imitating the physiological mechanism of erection. Inflatable prostheses are made up of two hollow cylinders, a liquid silicone reservoir, a valve, and tubular connections between these elements (Ellingwood, 1998).

The cylinders are introduced in the corpora cavernosa, the spherical reservoir is placed inside the abdomen, and the valve is placed in the scrotum. This valve is designed to make the fluid flow from the reservoir to the cylinders and, in this way, make them rigid and then flaccid again. Although, this type of prosthesis is highly physiological, there is a technical problem entailing the possibility of flaws that will necessarily require additional surgeries for some patients. Besides, this type of prosthesis is much more expensive than the malleable silicone prosthesis, and it involves a surgery that is more invasive than others. All the prostheses show satisfactory results in relation to the possibility of having sexual intercourse (Murray, 1998). As in any surgical intervention, complications, such as infections, pain and/or rejection, may occur.

Alternative treatments for impotence

Many alternative agents are marketed for impotence. Very few have been studied and some can be harmful. Some, but not all, are discussed in this report.

Aphrodisiacs

Aphrodisiacs are substances that are supposed to increase sexual drive, performance, or desire. Some examples include the following:

1. Viramax is a well-marketed product that contains yohimbine and three herbal aphrodisiacs: catuaba, muira puama, and maca. It has not been proven to be either effective or safe, and interactions with medications are unknown.

2. Foods that some people claim have aphrodisiacal qualities include chilies, chocolate, licorice, lard, scallops, oysters, olives, and anchovies. No evidence exists for these claims (Farnsworth, 1995) and eating large amounts of some of these foods, such as licorice and lard, can be dangerous

Spanish fly, or cantharides, which is made from dried beetles, is the most widely-touted aphrodisiac but can be particularly harmful. It irritates the urinary and genital tract and can cause infection, scarring, and burning of the mouth and throat. In some cases, it can be life threatening. No one should try any aphrodisiac without consulting a physician (Brown, 1995).

Other alternative remedies

1. In one small study, 78% of men who had impotence

caused by impaired blood flow regained erections after taking ginkgo. More research is needed.

2. Ginseng root is a traditional Asian remedy for stimulating sexual function, although no studies have been conducted on its efficacy.

3. A dietary liquid supplement called ArginMax is being hailed as a natural sildenafil. The preparation contains a number of vitamins, ginkgo, ginseng, and arginine, an amino acid that increases production of nitric oxide, a substance that relaxes blood vessels and promotes erections. As with most alternative remedies, however, rigorous studies are lacking.

4. An herbal supplement sold as Vaegra has no association with the prescription drug sildenafil (Viagra). None of these substances are regulated and their quality is not controlled. Any substance that can affect the body's chemistry can, like any drug, produce side effects that may be harmful (Sikora, 1995).

Warnings on alternative remedies

It should be strongly noted that alternative or natural remedies are not regulated and their quality is not publicly controlled. In addition, any substance that can affect the body's chemistry can, like any drug, produce side effects that may be harmful. There have been a number of reported cases of serious and even lethal side effects from so-called natural products. For example, some products marketed for improving sexual function (Verve, Jolt) contain gamma-butyrolactone (GBL) (Ellingwood, 1998). This substance can convert to a chemical that can cause toxic and life-threatening effects, including seizures and even coma. In addition, some so-called natural remedies have been found to contain standard prescription medication. Most problems reported occur in herbal remedies imported from Asia, with one study reporting a significant percentage of such remedies containing toxic metals. Even if studies report positive benefits, most, to date, are very small. In addition, the substances used in such studies are, in most cases, not what are being marketed to the public (Murray, 1998).

CONCLUSIONS

Numbers of sexual problems were found to be frequent. Physical, social/emotional, and relationship factors were all found to have a significant impact on the prevalence of one or more sexual problems. In addition, we observed an important gender difference: increasing age was more consistently associated with sexual problems among men. Thus, sexual problems among women and men appear to share similar correlates, but physical factors may play a larger role among men. However, as men age, there may be more psychological and relationship issues as well that influence their sexual satisfaction and

performance (Jackson et al., 2006; Thompson et al., 2005).

Erectile dysfunction is a highly prevalent condition that remains under-diagnosed and under-treated. Primary care physicians and nurse practitioners need to initiate the assessment of erectile function in patients who are considered high risk. A focused history, physical examination, and a limited laboratory evaluation are often helpful in identifying risk factors for erectile dysfunction (Montague et al., 2010).

Due to the high incidence of underlying cardiovascular disease, all men with erectile dysfunction should be assessed for cardiovascular risk factors. Men with significant cardiovascular risk factors should undergo further evaluation and management prior to treating their erectile dysfunction. Oral PDE-5 (Phospho diesterase type 5) inhibitors remain the first-line therapy in individuals with no contraindications to their use. Although causality has not been established for NAOIN (non-arthritic anterior ischemic optic neuropathy) and hearing loss, the FDA (Food and Drug Administration) recommends that patients be educated regarding these conditions. Second-line therapies include the vacuum device, intraurethral alprostadil MUSE (medicated urethral system for erection), and intracavernous injection therapy. The most common third-line therapy is placement of a penile prosthesis. Penile arterial revascularization procedures should only be performed on certain individuals by select surgeons who are skilled in such procedures. Combination therapy may be considered in certain individuals after proper counseling. The role of TRT (Testosterone Replacement Therapy) remains controversial, and individuals started on TRT should be followed carefully with periodic PSA determinations and serum hematocrits. The current approved therapies for erectile dysfunction and investigational combination therapies provide nearly every man with erectile dysfunction the opportunity for safe and efficacious treatment (Montague et al., 2010).

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