Egyptian Clinical Practice Guidelines for Male Sexual Dysfunction

Preliminary pages

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List of Abbreviations

Abbreviation	Description
AIPE	*Arabic Index of Premature Ejaculation*
ART	*Assisted reproductive technology*
AUA	*American Urological Association*
BSSM	*British Society for Sexual Medicine*
CCH	*Collagenase Clostridium histolyticum*
CDU	*Color duplex ultrasonography*
DE	*Delayed Ejaculation*
DM	*Diabetes mellitus*
EAU	*European Association of Urology*
ED	*Erectile dysfunction*
EDV	*End diastolic velocity*
EE	*Electo-ejaculation*
EMA	*European Medicines Agency*
eNOS	*Endothelial nitric oxide synthase*
ESWT	*Extracorporeal Shockwave Therapy*
FDA	*Food and drug administration*
FSH	*Follicular Stimulating Hormone*
ICI	*Intracavernous injection*
ICSI	*Intracytoplasmic sperm injection*
IELT	*Intravaginal ejaculation latency time*
IHD	*Ischaemic heart disease*
IIEF	*Iinternational Index of Erectile Function*
iNOS	*Inducible nitric oxide synthase*
ISSM	*International Society of Sexual Medicine*
IVF	*In-vetro fertilization*
LH	*Luteinizing Hormone*
LUTS	*Lower urinary tract symptoms*
nNOS	*Neuronal nitric oxide synthase*
NPT	*Nocturnal penile tumescence*
PD	*Peyronie's disease*
PDE5Is	*Phosphodiesterase type 5 inhibitors*
PE	*Premature ejaculation*
PEDT	*Premature Ejaculation Diagnostic Tool*
PGE1	*Prostaglandin E 1*
PP	*Penile prosthesis*
PSA	*Prostate-specific antigen*
PSV	*Peak systolic velocity*
PVS	*Penile vibratory stimulation*
QoL	*Quality of life*

RI	*Resistive index*
RP	*Radical prostatectomy*
SCD	*Sickle cell disease*
SCI	*Spinal cord injury*
SCs	*Stem cells*
SSRIs	*Selective serotonin reuptake inhibitors*
TA	*Tunica albuginea*
TGF-β1	*Transforming growth factor beta 1*
VED	*Vacuum erection device*
VOD	*Veno-occlusive dysfunction*

Glossary

1- Erectile Dysfunction (ED): The persistent or recurrent inability to attain and maintain an erection sufficient to permit satisfactory sexual performance.

2- Premature Ejaculation: Ejaculation that always or nearly always occurs prior to or within about one minute of vaginal penetration (lifelong PE) or a clinically significant and bothersome reduction in latency time, often to about three minutes or less (acquired PE).

3- Delayed Ejaculation: Marked delay in ejaculation or marked infrequency or absence of ejaculation on almost all or all occasions (75-100% of the times) of partnered sexual activity without the individual desiring delay persisting for at least 6 months and causing significant distress to the individual.

4- Peyronie's Disease (PD) is a symptomatic disorder characterized by a constellation of penile symptoms and signs, such as penile pain, curvature, shortening, narrowing, hinge deformity, and palpable plaque with subsequent ED.

5- Priapism is a persistent penile erection for more than four hours and not related to sexual stimulation or relieved by ejaculation. Priapism carries high risk of structural damage to the cavernosal tissue which may lead to permanent ED.

4- Anejaculation: The complete absence of ejaculation either antegrade or retrograde. Caused by failed seminal emission from the seminal vesicles, prostate, and ejaculatory ducts into the urethra**.** In true anejaculation, there is normal orgasmic sensation and is always associated with central or peripheral nervous system dysfunction or with drugs**.**

5- Painful Ejaculation: is a condition in which the patient may feel variable degrees of pain during or after ejaculation involving the penis, scrotum, and perineum**.**
6- Haemospermia: is the presence of blood in the seminal fluid ejaculate. The condition causes anxiety and may indicate underlying pathology in many cases.

Executive Summary

Scope of the guidelines

Sexual health-related issues are wide-ranging and of importance to the overall health and sense of well-being for couples and families, and to the social and economic development of communities and countries. Erectile dysfunction (ED) and disorders of ejaculation are frequent encounters in male sexual medicine in the Middle East with the association of different risk factors and medical comorbidities in Arab region countries. Pharmacological therapies have completely changed the diagnostic and therapeutic approach to ED. This article integrates recent international guidelines with local experience and highlights the apparent lack of congruency between available treatment and communication, cultural, and gender norms of Middle East populations that may inhibit treatment seeking.

The Egyptian Urological Association (EUA) Male Sexual Dysfunction Guidelines aims to present the contemporary evidence for medical practice in Egypt for the diagnosis and treatment of patients suffering from sexual dysfunction.

Recommendations of the Male Sexual Dysfunction

	Recommendations of Erectile Dysfunction:
1.	Obtain a thorough medical and sexual history for all patients. **(Strong)**
2.	Use a validated questionnaire especially Arabic version (if available) related to ED to assess all sexual function domains and the effect of a specific treatment modality. **(Strong)**
3.	Perform physical examination in the initial assessment of men with ED to identify underlying medical conditions and comorbid genital disorders that may be associated with ED **(Strong).**
4.	Assess routine laboratory tests, including glucose-lipid profile and total testosterone, to identify and treat any reversible risk factors and lifestyle factors that can be modified. **(Strong).**
5.	Consider specific diagnostic tests in the initial evaluation only in the presence of "Indications for specific diagnostic tests" **(Strong).**
6.	Ensure Including changes in diet, increased physical activity, stop smoking, improve overall health at or before treatment of erectile dysfunction. (**Strong)**
7.	Inform patients regarding approved PDE5Is, including discussion of benefits and risks/burdens. (**Strong).**
8.	Use PDE5Is as first-line therapy. The dose should be titrated to provide optimal efficacy. (**Strong)**
9.	Consider early rehabilitation programs (use of PDE5I and VED) post-RP may improve erectile function (**Strong)**.
10.	Inform patients that PDE5Is may be more effective if combined with testosterone therapy when indicated. **(Strong).**
11.	Assess patients for, inadequate/incorrect prescriptions, poor sexual stimulation, and fat meals when not advised **(Conditional).**

12.	Discuss benefits and risks/burdens regarding the use of VED, especially in well-informed older patients with infrequent sexual intercourse and comorbidity requiring non-invasive, drug-free management of ED **(Conditional)**
13.	Perform an in-office injection test. Home therapy after positive office ICI test **(Conditional).**
14.	Alprostadil (PGE1) is the best agent however its cost is a limitation. **(Conditional)**
15.	Use low intensity shockwave treatment (LI-SWT) in patients not candidate for oral vasoactive treatment or non-responders to PDE5Is **(Conditional)**
16.	Intracavernosal stem cell therapy should be considered investigational for treatment of ED **(Conditional)**
17.	*Intracavernosal Platelet Rich Plasma should be considered* investigational for ED treatment **(Conditional)**
18.	***Botulinum Neurotoxin A (BoNT-A):*** *S*hould be considered investigational for treatment of ED **(Conditional)**.
19.	Surgery should be reserved for men in whom less invasive reversible treatment has not succeeded or is contraindicated or undesirable. **Strong**
20.	Arterial revascularization surgery is offered only to select patients with ED who meet strict clinical and radiographic criteria for surgical success. (**Strong**)
21.	Vascular surgery for veno-occlusive dysfunction is no longer recommended. **Strong**
22.	Use implantation of a penile prosthesis as third-line therapy if other treatments fail or based upon patient preference **Strong.**
	Recommendations of Premature Ejaculation (PE)
23.	Obtain medical and sexual history to diagnose and classify PE, which should include assessment of intravaginal ejaculatory latency time (IELT) (self-estimated), perceived control, distress, and interpersonal difficulty due to the ejaculatory dysfunction. **Strong**
24.	Perform physical examination in the initial assessment of PE to identify anatomical abnormalities that may be associated with PE or other sexual dysfunctions, particularly erectile dysfunction (ED). **Strong.**
25.	Use the patient-reported outcomes tools: Premature Ejaculation Diagnostic Tool (PEDT) and Arabic Index of Premature Ejaculation (AIPE) in daily clinical practice. **(Conditional)**
26.	Laboratory or neuro-physiological tests are not routine. They should only be directed by specific findings from history or physical examination. **Strong.**
27.	Define the subtype of PE and discuss patient's expectations thoroughly before starting any treatment. **Strong.**
28.	Treat the underlying cause (e.g., ED, prostatitis, LUTS, anxiety, hyperthyroidism) as the initial goal for patients with acquired PE. **Strong.**
29.	Consider pharmacotherapy as the first-line treatment for patients with lifelong PE i.e. dapoxetine **Strong.**
30.	The use of off-label topical anaesthetic agents i.e. the lidocaine/prilocaine spray is suggested as a viable alternative to oral treatment with SSRIs. **(Conditional)**
31.	Use psychological/behavioural therapies in combination with pharmacological treatment in the management of acquired PE. **(Conditional).**

32.	Use various behavioural techniques in treating variable and subjective PE **(Strong).**
33.	The on-demand Tramadol is a weak alternative to SSRIs. **(Conditional)**.
34.	PDE5Is alone or in combination with other therapies in patients with PE (without ED) may be used. **(Conditional).**
	Recommendations for Delayed Ejaculation (DE)
35.	Perform a thorough analysis of the complaint to exclude misdiagnosed other sexual dysfunctions stressing on anorgasmia **Strong.**
36.	Obtain a detailed medical and sexual history to exclude risk factors (medications especially SSRIs, antipsychotics, drug abuse, DM, depression, LUTS, etc) **Strong.**
37.	Define if DE is lifelong or acquired, global or situational. **Strong.**
38.	Assess intravaginal ejaculatory latency time (IELT) (self-estimated) **(Conditional).**
39.	Include physical examination in the initial assessment of DE to identify hypogonadism or anatomical abnormalities that may be associated with DE or other sexual dysfunctions, particularly erectile dysfunction **Strong.**
40.	Request post-coital first voided urine sample to exclude retrograde ejaculation **Strong.**
41.	Use specific questionnaires, specialized laboratory tests and radiologic investigation when indicated only. **(Conditional).**
42.	If acquired DE, consider stopping or modifying underlying incriminated drug regimen. **Strong.**
43.	Improving erectile function and maximizing stimulation may trigger ejaculation. **(Conditional).**
44.	Psychosexual therapy can be particularly helpful in primary DE. **(Conditional)**
45.	Testosterone replacement in hypogonadal patients may improve DE. **(Conditional)**
46.	Cabergoline and bupropion could be beneficial for some cases of delayed ejaculation. **(Conditional).**
47.	Use PDE5I treatment significantly improved ejaculation and orgasm **Strong.**
48.	Sympathetic a1 receptor agonists may help ejaculation with variable success rates in non-SCI patients. **(Conditional)**
49.	Use penile vibratory stimulation or electro-ejaculation for sperm retrieval in patients with fertility issues and SCI. **Strong.**
	Recommendations for Peyronie's Disease (PD)
50.	Obtain a detailed history with specific emphasis on various characteristics of PD, such as onset, duration, course, pain, deformity, and ED. **(Strong)**
51.	Perform physical examination, include assessment of palpable plaques, penile length, extent of curvature (self-photograph, or pharmacological-induced erection). **Strong.**
52.	Do not use specific PD questionnaire, ultrasound measurement of plaque size in everyday clinical practice. **(Conditional).**
53.	Perform proper pre-operative counselling including the available treatment options and the known benefits and risks of each treatment, and the patient expectation will reduce post treatment patient dissatisfaction. **(Strong)**

54.	Use conservative treatment in patients not fit for surgery or when surgery is not acceptable to the patient. **(Conditional).**
55.	Consider that intralesional collagenase injection has shown some outcome benefits in PD management. **(Strong).**
56.	Offer extracorporeal shockwave treatment in the active stage of the disease may alleviate penile pain. Do not use extracorporeal shockwave treatment to improve penile curvature and reduce plaque size. **(Conditional).**
57.	Offer penile traction devices and vacuum devices may reduce penile deformity and increase penile length. **(Conditional).**
58.	Do not use oral treatment with vitamin E and tamoxifen for significant reduction in penile curvature or plaque size. **(Strong).**
59.	Do not offer other oral treatments in chronic phase of PD (acetyl esters of carnitine, pentoxifylline, colchicine). **(Conditional).**
60.	Perform surgery only when PD has been stable for at least three months (without pain or deformity deterioration), which is usually the case after twelve months from the onset of symptoms. **Strong.**
61.	Assess penile length, curvature severity, erectile function (including response to pharmacotherapy in case of ED) and patients' expectations prior to surgery. **Strong.**
62.	Use tunical shortening procedures, especially plication techniques as the first treatment option for PD with adequate penile length, curvature < 60°, absence of special deformities (hourglass, hinge) and adequate erection. **Strong.**
63.	Use grafting techniques for patients with PD with less than adequate penile length, curvature > 60°, presence of special deformities (hourglass, hinge) and adequate erection. **(Strong).**
64.	Use penile prosthesis implantation, with or without any additional procedure (modelling, plication, relaxing parallel incisions, grafting), in PD patients with ED not responding to pharmacotherapy. **Strong.**
	Recommendations for Priapism
65.	Obtain thorough history, is important in making diagnosis, etiology and type of priapism. **Strong**
66.	Perform physical examination of the genitalia, the perineum and the abdomen. **Strong.**
67.	Include laboratory investigations, complete blood count, coagulation profile and arterial blood gases. **Strong.**
68.	Perform color duplex ultrasound of the penis and perineum for the differentiation between ischemic and non-ischemic priapism. **Strong.**
69.	Use magnetic resonance imaging of the penis to predict smooth muscle viability in prolonged ischemic priapism. **(Strong).**
70.	Perform selected pudendal arteriogram when embolization is planned for the management of non-ischemic priapism. **Strong.**
71.	Start management of ischaemic priapism as early as possible (within four to six hours) and follow a stepwise approach. **Strong.**
72.	First, decompress the corpora cavernosa by penile aspiration until fresh red blood is obtained. **(Conditional).**
73.	Proceed to the next step, which is ICI of a sympathomimetic drug, in priapism that persists despite aspiration. **Strong.**

74.	Repeat injections and aspiration for at least up to 1 hour prior to proceeding with surgical intervention in patients presenting with a priapism of less than 24 hours. **Strong.**
75.	Consider more immediate surgical intervention in ischemic priapism of extended durations (typically greater than 72h), is unlikely to resolve with ICI therapy alone. **Strong.**
76.	Perform distal shunt surgical procedures. Result of proximal procedures in case of failure is questionable. **Strong.**
77.	Consider insertion of a penile prosthesis only if priapism episode is > 36 hours, or in cases for which all other interventions have failed. **Strong.**
Recommendations for the treatment of non-ischemic priapism	
78.	Non-ischaemic priapism is not an emergency, perform definitive management at the discretion of the treating physician. **(Conditional)**
79.	Perform superselective arterial embolization, using temporary material for recurrent nonischaemic priapism **Strong**
80.	Repeat the procedure with temporary or permanent material for recurrent nonischaemic priapism following selective arterial embolization. **(Conditional)**
81.	Reserve selective surgical ligation of a fistula as a final treatment option when embolization has failed. **(Conditional).**
Recommendations for the treatment of Stuttering priapism	
82.	Treatment of Stuttering priapism, manage each acute episode similar to that for ischaemic priapism. **(Conditional).**
83.	Use hormonal therapies (mainly gonadotropin-receptor hormone agonists or antagonists) and/or anti-androgens for the prevention of future episodes in patients with frequent relapses of stuttering priapism. Do not use them before sexual maturation is reached. **(Conditional)**
84.	Initiate treatment with phosphodiesterase type 5 inhibitors in stuttering priapism only when the penis is in its flaccid state. **(Conditional)**.
85.	Use digoxin, a-adrenergic agonists, baclofen, gabapentin, or terbutaline only in patients with very frequent and uncontrolled relapses stuttering priapism. **(Conditional)**.
86.	Use intracavernous self-injections at home of sympathomimetic drugs until ischaemic priapism has been alleviated. **(Conditional).**

Main body

Introduction, purpose, scope, and audience

Introduction

Strategies for diagnosis and treatment of male sexual problems should consider the sociocultural factors that influence diagnosis and treatment seeking and engagement behaviours necessary for successful outcomes. Specifically, the detrimental effects of sexual problems on quality of life and the potential benefits of proper diagnosis and treatment should be more widely communicated to diminish the social disgrace associated with sexual problems and their management.

Erectile dysfunction (ED) and premature ejaculation (PE) are the two main complaints in male sexual medicine in the Middle East (1-2). Pharmacological therapies have completely changed the diagnostic and therapeutic approach to ED (3,4). The prevalence of ED is 20–90% among patients with different risk factors and medical comorbidities in Arab region countries and severe ED in patients in this region could be attributed to: (1) the high prevalence of risk factors; (2) the poor control of those risk factors; (3) the delay in seeking medical advice; and (4) the non-compliance with treatment (1-2). Unfortunately, in Arab countries there are no firm data on the true prevalence of sexual dysfunction. This prompted several investigators in the region to conduct research to identify the magnitude of the current problem (1-2).

This article integrates recent international guidelines with local experience and also highlights the apparent lack of congruency between available treatment and communication, cultural, and gender norms of Middle East populations that may inhibit treatment seeking. We clarified in our recent publication that strategies for diagnosis and treatment should consider the sociocultural factors that influence diagnosis and treatment seeking and engagement behaviours necessary for successful outcomes. Specifically, the detrimental effects of sexual problems on quality of life and the potential benefits of proper diagnosis and treatment should be more widely communicated to diminish the social disgrace associated with sexual problems and their management (5).

Sexual dysfunction issues unique to our region:

- ***Infertility and sexual dysfunction:*** *Infertility is negatively linked to sexuality in couples seeking assisted reproductive technology (ART), suggesting the need for integrated management of psychosexual problems (6). Unique to infertile couples in Egypt, like the Arab and Muslim world, the option of donor insemination is not accepted. The challenge of unsuccessful fertility issues in Egyptians may even further have a detrimental effect on the couple's sexual function. Infertility and sexual dysfunction are associated (7). Lack of sexual awareness and education contribute to this problem. Psychosexual management is warrantied in these couples.*
- ***Unconsummated marriage:*** *A specific situation urologist face in our region is unconsummated marriage. It is a social challenge for the man to deal with his wife's virginity on the wedding night. Such stress may lead to performance anxiety and failure, accumulating into a full-blown ED situation in an otherwise healthy young man. Unconsummated marriage might occur in men with normal erection due to other causes as premature ejaculation, performance anxiety, lack of desire, hypogonadism, lack of knowledge, social pressure, and*

*female factors (8,9)***.** *The most common female factor was vaginismus (10). Particular to our regions, male lack of sexual desire may be related to consanguinity (11)***.**

- ***Polygamy, motives, and sexual dysfunction:*** *Egypt is among the countries where polygamy is legal (12). Polygamy has a psychosexual impact on the first wife, impacting intimacy with her husband and negatively affecting the dynamics of the family that is peculiar to these parts of the world (13). Non-monogamous female drive to sex includes coping mechanisms to keep the partner, maintain self-esteem, and seek higher levels of sexual pleasure (14). Men seek polygamy for a variety of reasons. For example, in a Turkish study, men reported that they had a second wife because of decreased satisfaction of sexual desires by a wife, falling in love with the second wife, and incompatibility with the first wife (15). In the Asian community, a prevalent polygamous practice has many underlying factors (16). These include prestige, economic advantage, social customs, and exposure to commercial sex. While polygamy may negatively affect wives and children, a couple of studies showed that polygamous men have less ED, less premature ejaculation, lower depression scores, and higher sexual satisfaction (15,17)***.***

Other male sexual problems include **Premature Ejaculation:** Ejaculation that always or nearly always occurs prior to or within about one minute of vaginal penetration (lifelong PE) or a clinically significant and bothersome reduction in latency time, often to about three minutes or less (acquired PE). **Delayed Ejaculation:** Marked delay in ejaculation or marked infrequency or absence of ejaculation on almost all or all occasions (75-100% of the times) of partnered sexual activity without the individual desiring delay persisting for at least 6 months and causing significant distress to the individual. **Peyronie's Disease** (PD) is a symptomatic disorder characterized by a constellation of penile symptoms and signs, such as penile pain, curvature, shortening, narrowing, hinge deformity, and palpable plaque with subsequent ED. **Priapism** is a persistent penile erection for more than four hours and not related to sexual stimulation or relieved by ejaculation. Priapism carries high risk of structural damage to the cavernosal tissue which may lead to permanent ED.

Purpose

The Urologic Egyptian Guidelines on Male Sexual Dysfunction aim to present the contemporary evidence for medical practice in Egypt for the diagnosis and treatment of patients suffering from sexual dysfunction.

Scope

The Urologic Egyptian Guidelines on Male Sexual Dysfunction help and guide clinical practitioners to have knowledge of the incidence, pathophysiology, and strategies for diagnosis and treatment of male sexual problems. This document integrates recent international guidelines with local experts' opinions based on Egyptian healthcare and socioeconomic circumstances. It also reflects the opinions of experts in Sexual Dysfunction and represents state-of-the art references for all clinicians, as of the publication date.

Target audience

The target audience refers to those that deliver or implement the recommendations as well as health policymakers and other stakeholders involved in the adoption, adaptation, and transfer of health policies. The target audience of the guideline should not be misunderstood with the beneficiaries of the interventions or target population described in the guideline.

- **Urologists**
- **Dermatologists and Andrologists**
- **Family medicine and general practitioners**
- **Gynaecologists, psychiatrists and endocrinologists**

Methods

A comprehensive search for guidelines was undertaken to identify the most relevant guidelines to consider for adaptation.

Inclusion/exclusion criteria followed in the search and retrieval of guidelines to be adapted:

- Selecting only evidence-based guidelines (guideline must include a report on systematic literature searches and explicit links between individual recommendations and their supporting evidence)
- Selecting only national and/or international guidelines
- Specific range of dates for publication (using Guidelines published or updated 2015 and later)
- Selecting peer reviewed publications only
- Selecting guidelines written in English language
- Excluding guidelines written by a single author not on behalf of an organization in order to be valid and comprehensive, a guideline ideally requires multidisciplinary input
- Excluding guidelines published without references as the panel needs to know whether a thorough literature review was conducted and whether current evidence was used in the preparation of the recommendations

The following characteristics of the retrieved guidelines were summarized in a table:

- Developing organisation/authors
- Date of publication, posting, and release
- Country/language of publication
- Date of posting and/or release
- Dates of the search used by the source guideline developers

All retrieved Guidelines were screened and appraised using AGREE II instrument (www.agreetrust.org) by at least two members. the panel decided a cut-off point or rank the guidelines (any guideline scoring above 50% on the rigour dimension was retained).

Evidence assessment.

According to WHO handbook for Guidelines we used the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) approach to assess the quality of a body of evidence, develop and report recommendations (18, 19). GRADE methods are used by WHO because these represent internationally agreed standards for making transparent recommendations. Detailed information on GRADE is available on the following sites:

- GRADE working group: http://www.gradeworkingroup.org
- GRADE online training modules: http://cebgrade.mcmaster.ca/
- GRADE profile software: http://ims.cochrane.org/revman/gradepro

Table 1 Quality of evidence in GRADE

Quality level	Definition
High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low	Our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low	We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

GRADE: Grading of Recommendations Assessment, Development and Evaluation.

Table 2 Significance of the four levels of evidence

Quality	Definition	Implications
High	The guideline development group is very confident that the true effect lies close to that of the estimate of the effect	Further research is very unlikely to change confidence in the estimate of effect
Moderate	The guideline development group is moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different	Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate
Low	Confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the true effect	Further research is very likely to have an important impact on confidence in the estimate of effect and is unlikely to change the estimate
Very low	The group has very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of the effect	Any estimate of effect is very uncertain

Table 3: Factors that determine How to upgrade or downgrade the quality of evidence

Downgrade in presence of	Upgrade in presence of
Study limitations -1 Serious limitations -2 Very serious limitations	Dose-response gradient +1 Evidence of a dose-response gradient
Consistency -1 Important inconsistency	Direction of plausible bias +1 All plausible confounders would have reduced the effect
Directness -1 Some uncertainty -2 Major uncertainty	Magnitude of the effect +1 Strong, no plausible confounders, consistent and direct evidence
Precision -1 Imprecise data	+2 Very strong, no major threats to validity and direct evidence
Reporting bias -1 High probability of reporting bias	

The strength of the recommendation.

The strength of a recommendation communicates the importance of adherence to the recommendation.

Strong recommendations.

With strong recommendations, the guideline communicates the message that the desirable effects of adherence to the recommendation outweigh the undesirable effects. This means that in most situations the recommendation can be adopted as policy.

Conditional recommendations.

These are made when there is greater uncertainty about the four factors above or if local adaptation has to account for a greater variety in values and preferences, or when resource use makes the intervention suitable for some, but not for other locations. This means that there is a need for substantial debate and involvement of stakeholders before this recommendation can be adopted as policy.

When not to make recommendations.

When there is lack of evidence on the effectiveness of an intervention, it may be appropriate not to make a recommendation.

Databases searched included four resource categories:

1. Four international guidelines and recommendations, namely European Association of Urology [EAU], American Urological Association Guidelines [AUA], British Society for Sexual Medicine [BSSM], International Society of Sexual Medicine [ISSM] (20 – 24).

2. Review of several guides, reviews, statements, recommendations, and standards (23 – 25).

3. Relevant Egyptian publications.

4. A panel of 10 high-calibre urologists and andrologists representing different universities, institutions and private practice in Egypt.

Adaptation of the Egyptian cultural aspects, the level of urologists' capabilities and the availability of well-equipped hospitals were considered in the methodology of diagnosis and different treatment modalities.

Recommendations

Recommendations for the diagnosis of Erectile Dysfunction:

Recommendations (20-24, 28-41)	**GRADE Level of certainty**	**Strength Rating**
1- Obtain a thorough medical and sexual history for all patients.	High (28-32)	**(Strong)**
2- Use a validated questionnaire especially Arabic version (if available) related to ED to assess all sexual function domains and the effect of a specific treatment modality.	High (28- 30)	**(Strong)**
3- Perform physical examination in the initial assessment of men with ED to identify underlying medical conditions and comorbid genital disorders that may be associated with ED.	High (33 – 34)	**(Strong)**
4- Assess routine laboratory tests, including glucose-lipid profile and total testosterone, to identify and treat any reversible risk factors and lifestyle factors that can be modified.	High (35-39)	**Strong)**
5- Consider specific diagnostic tests in the initial evaluation only in the presence of "Indications for specific diagnostic tests".	High (20-24, 35-41)	**(Strong)**

Recommendations for treatment of ED	GRADE Level of certainty	Strength Rating
6- Ensure Including changes in diet, increased physical activity, stop smoking, improve overall health at or before treatment of erectile dysfunction.	High (5, 42,43)	Strong
7- Inform patients regarding approved PDE5Is, including discussion of benefits and risks/burdens.	High (20-24, 42, 44-48)	Strong
8- Use PDE5Is as first-line therapy. The dose should be titrated to provide optimal efficacy.	High (20-24, 42, 44-48)	Strong
9- Consider early rehabilitation programs (use of PDE5I and VED) post-RP may improve erectile function.	Moderate *(20-24, 49-56)*	Strong
10- Erectile Dysfunction and hypogonadism: Inform patients that PDE5Is may be more effective if combined with testosterone therapy when indicated.	Moderate *(20-24, 57,58)*	Strong
11- PDE5Is failure in patients with ED: Assess patients for, inadequate/incorrect prescriptions, poor sexual stimulation, and fat meals when not advised.	Low (20-24, 44-48, 59-61)	Conditional
12- Discuss benefits and risks/burdens regarding the use of VED, especially in well-informed older patients with infrequent sexual intercourse and comorbidity requiring non-invasive, drug-free management of ED.	Low (20-24, 62, 63)	Conditional
13- Perform an in-office injection test. Home therapy after positive office ICI test	Low (20-24, 57, 64)	Conditional
14- Alprostadil (PGE1) is the best agent however its cost is a limitation.	Low (57)	Conditional
15- Use low intensity shockwave treatment (LI-SWT) in patients not candidate for oral vasoactive treatment or non-responders to PDE5Is.	Low (20-24, 65-75)	Conditional
16- Intracavernosal stem cell therapy should be considered investigational for treatment of ED	Low (20-24)	Conditional
17- *Intracavernosal Platelet Rich Plasma should be considered* investigational for ED treatment	Low (20, 76-83)	Conditional

18-	***Botulinum Neurotoxin A (BoNT-A):*** Should be considered investigational for treatment of ED	Low (20, 84-87)	Conditional
	Recommendations for Surgical treatment		
19-	Surgery should be reserved for men in whom less invasive reversible treatment has not succeeded or is contraindicated or undesirable.	High (20-24)	Strong
20-	Arterial revascularization surgery is offered only to select patients with ED who meet strict clinical and radiographic criteria for surgical success.	Moderate (88-90)	Strong
21-	Vascular surgery for veno-occlusive dysfunction is no longer recommended.	High (20-24, 91)	Strong
22-	Use implantation of a penile prosthesis as third-line therapy if other treatments fail or based upon patient preference.	High (92-100)	Strong

Clinical Indicators for monitoring:

1. **Thorough medical and sexual history using a validated questionnaire especially Arabic version.**
2. ***Focused* physical examination.**
3. ***Testosterone and lipid profile.***
4. **Consider specific diagnostic tests when indicated.**

Recommendation for assessment and management of Premature Ejaculation

Recommendation	GRADE Level of certainty	Strength Rating
23- Obtain medical and sexual history to diagnose and classify PE, which should include assessment of intravaginal ejaculatory latency time (IELT) (self-estimated), perceived control, distress, and interpersonal difficulty due to the ejaculatory dysfunction.	High (101-103)	Strong
24- Perform physical examination in the initial assessment of PE to identify anatomical abnormalities that may be associated with PE or other sexual dysfunctions, particularly erectile dysfunction (ED).	High (101-103)	Strong
25- Use the patient-reported outcomes tools: Premature Ejaculation Diagnostic Tool (PEDT) and Arabic Index of Premature Ejaculation (AIPE) in daily clinical practice.	Low (104)	Conditional
26- Laboratory or neuro-physiological tests are not routine. They should only be directed by specific findings from history or physical examination.	High (101-103)	Strong
27- Define the subtype of PE and discuss patient's expectations thoroughly before starting any treatment.	High (101-103)	Strong
28- Treat the underlying cause (e.g., ED, prostatitis, LUTS, anxiety, hyperthyroidism) as the initial goal for patients with acquired PE	High (104)	Strong
29- Consider pharmacotherapy as the first-line treatment for patients with lifelong PE i.e. dapoxetine	High (104-106)	Strong
30- The use of off-label topical anesthetic agents i.e. the lidocaine/prilocaine spray is suggested as a viable alternative to oral treatment with SSRIs.	Moderate (104-106)	Conditional
31- Use psychological/behavioural therapies in combination with pharmacological treatment in the management of acquired PE	Low (104-106)	Conditional
32- Use various behavioural techniques in treating variable and subjective PE	Moderate (104-106)	Strong
33- The on-demand Tramadol is a weak alternative to SSRIs.	Low (104-106)	Conditional
34- PDE5Is alone or in combination with other therapies in patients with PE (without ED) may be used.	Low (104-106)	Conditional

Clinical Indicators for monitoring:

1. **Medical and sexual history to diagnose and classify PE, use the patient-reported outcomes tools.**
2. ***Focused* physical examination.**
3. **Routine laboratory with seminal fluid culture and sensitivity to exclude underlying cause in patients with acquired PE**

Recommendations for assessment of Delayed Ejaculation (107-109)

Recommendation	GRADE Level of certainty	Strength Rating
35- Perform a thorough analysis of the complaint to exclude misdiagnosed other sexual dysfunctions stressing on anorgasmia	*High 107*	*Strong*
36- Obtain a detailed medical and sexual history to exclude risk factors (medications especially SSRIs, antipsychotics, drug abuse, DM, depression, LUTS, etc)	*High 107*	*Strong*
37- Define if DE is lifelong or acquired, global or situational.	*High 107*	*Strong*
38- Assess intravaginal ejaculatory latency time (IELT) (self-estimated)	*Low (108-109)*	*Conditional*
39- Include physical examination in the initial assessment of DE to identify hypogonadism or anatomical abnormalities that may be associated with DE or other sexual dysfunctions, particularly erectile dysfunction	*High (108-109)*	*Strong*
40- Request post-coital first voided urine sample to exclude retrograde ejaculation.	*High (108-109)*	*Strong*
41- Use specific questionnaires, specialized laboratory tests and radiologic investigation when indicated only.	*Low (108-109)*	*Conditional*
42- If acquired DE, consider stopping or modifying underlying incriminated drug regimen.	*High (108-109)*	*Strong*
43- Improving erectile function and maximizing stimulation may trigger ejaculation.	*Low (108-109)*	*Conditional*
44- Psychosexual therapy can be particularly helpful in primary DE.	*Low (108-109)*	*Conditional*
45- Testosterone replacement in hypogonadal patients may improve DE.	*Low (108-109)*	*Conditional*
46- Cabergoline and bupropion could be beneficial for some cases of delayed ejaculation.	*Low (108-109)*	*Conditional*
47- Use PDE5I treatment significantly improved ejaculation and orgasm.	*High (107-109)*	*Strong*
48- Sympathetic a1 receptor agonists may help ejaculation with variable success rates in non-SCI patients.	*Low (108-109)*	*Conditional*
49- Use penile vibratory stimulation or electro-ejaculation for sperm retrieval in patients with fertility issues and SCI.	*High (108-109)*	*Strong*

<u>Clinical Indicators for monitoring:</u>

1. **Medical and sexual history with intravaginal ejaculatory latency time (IELT).**
2. ***Focused* physical examination.**
3. **Define if DE is lifelong or acquired, global or situational.**
4. **Specialized laboratory tests and radiologic investigation when indicated only.**

Recommendations for evaluation and management of Peyronie's Disease (PD):

Recommendations	GRADE Level of certainty	Strength Rating
50. There is currently no international standard evaluation and treatment for PD and a detailed history should be obtained with specific emphasis on various characteristics of PD, such as onset, duration, course, pain, deformity, ED.	Moderate (20-24, 110-113)	Strong
51. Physical examination, include assessment of palpable plaques, penile length, extent of curvature (self-photograph, or pharmacological-induced erection).	High (20-24, 110-113)	Strong
52. Do not use specific PD questionnaire, ultrasound measurement of plaque size in everyday clinical practice.	Low 114	Conditional
53. Proper pre-operative counselling including the available treatment options and the known benefits and risks of each treatment, and the patient expectation will reduce post treatment patient dissatisfaction.	Moderate (86,114,115,116)	Strong
54. Use conservative treatment in patients not fit for surgery or when surgery is not acceptable to the patient.	Low (114,115,116)	Conditional
55. Intralesional collagenase injection has shown some outcome benefits in PD management.	Moderate (116)	Strong
56. Extracorporeal shockwave treatment may only be offered in the active stage of the disease to alleviate penile pain. Do not use extracorporeal shockwave treatment to improve penile curvature and reduce plaque size.	Low (115)	Conditional
57. Use penile traction devices and vacuum devices to reduce penile deformity and increase penile length.	Low (114)	Conditional
58. Do not use oral treatment with vitamin E and tamoxifen for significant reduction in penile curvature or plaque size.	High (20-24, 114)	Strong
59. Do not offer other oral treatments in chronic phase of PD (acetyl esters of carnitine, pentoxifylline, colchicine).	Low (114)	Conditional
60. Perform surgery only when PD has been stable for at least three months (without pain or deformity deterioration), which is usually the case after twelve months from the onset of symptoms.	High (20-24, 117,118)	Strong
61. Prior to surgery, assess penile length, curvature severity, erectile function (including response to pharmacotherapy in case of ED) and patient expectations.	High (20-24, 117,118)	Strong
62. Use tunical shortening procedures, especially plication techniques as the first treatment option for PD with adequate penile length, curvature < 60°, absence of special deformities (hourglass, hinge) and adequate erection.	High (20-24, 117,118)	Strong
63. Use grafting techniques for patients with PD with less than adequate penile length, curvature > 60°, presence of special deformities (hourglass, hinge) and adequate erection.	Moderate (20-24, 117,118)	Strong
64. Use penile prosthesis implantation, with or without any additional procedure (modelling, plication, relaxing parallel incisions, grafting), in PD patients with ED not responding to pharmacotherapy.	High (20-24, 117,118)	Strong

Clinical Indicators for monitoring:

1. **Medical and sexual history.**
2. ***Focused* physical examination (self-photograph, or pharmacological-induced erection).**
3. **Penile length, curvature severity, and erectile function.**

Recommendations for diagnosis of ischemic priapism

Recommendation	GRADE Level of certainty	Strength Rating
65. Obtain thorough history, is important in making diagnosis, etiology and type of priapism.	High (119-122)	Strong
66. Perform physical examination of the genitalia, the perineum and the abdomen.	High (119-122)	Strong
67. Include laboratory investigations, complete blood count, coagulation profile and arterial blood gases.	High (119-122)	Strong
68. Perform color duplex ultrasound of the penis and perineum for the differentiation between ischemic and non-ischemic priapism.	High (119-122)	Strong
69. Use magnetic resonance imaging of the penis to predict smooth muscle viability in prolonged ischemic priapism.	Moderate (119-122)	Strong
70. Perform selected pudendal arteriogram when embolization is planned for the management of non-ischemic priapism.	High (119-122)	Strong

Recommendations for the treatment of ischemic priapism:

Recommendations	GRADE Level of certainty	Strength Rating
71. Start management of ischaemic priapism as early as possible (within four to six hours) and follow a stepwise approach.	High (119-122)	Strong
72. First, decompress the corpora cavernosa by penile aspiration until fresh red blood is obtained.	Low (119)	Conditional
73. Proceed to the next step, which is ICI of a sympathomimetic drug, in priapism that persists despite aspiration.	High (119-122)	Strong
74. Repeat injections and aspiration for at least up to 1 hour prior to proceeding with surgical intervention in patients presenting with a priapism of less than 24 hours.	High (119-122)	Strong
75. Consider more immediate surgical intervention in ischemic priapism of extended durations (typically greater than 72h), is unlikely to resolve with ICI therapy alone.	High (119-122)	Strong
76. Perform distal shunt surgical procedures. Result of proximal procedures in case of failure is questionable.	High (119-122)	Strong
77. Consider insertion of a penile prosthesis only if priapism episode is > 36 hours, or in cases for which all other interventions have failed.	High (119-122)	Strong

Recommendations for the treatment of non-ischemic priapism

Recommendations	GRADE Level of certainty	Strength Rating
78. Perform definitive management at the discretion of the treating physician, because non-ischaemic priapism is not an emergency.	Low (123-126)	Conditional
79. Perform superselective arterial embolization, using temporary material.	High (20-24)	Strong
80. Repeat the procedure with temporary or permanent material for recurrent nonischaemic priapism following selective arterial embolization.	Low (123-126)	Conditional
81. Reserve selective surgical ligation of a fistula as a final treatment option when embolization has failed.	Low (123-126)	Conditional

Recommendations for the treatment of Stuttering priapism

Recommendations	GRADE Level of certainty	Strength Rating
82. Treatment of Stuttering priapism, manage each acute episode similar to that for ischaemic priapism.	Low (119-121)	Conditional
83. Use hormonal therapies (mainly gonadotropin-receptor hormone agonists or antagonists) and/or anti-androgens for the prevention of future episodes in patients with frequent relapses of stuttering priapism. Do not use them before sexual maturation is reached.	Low (119-121)	Conditional
84. Initiate treatment with phosphodiesterase type 5 inhibitors in stuttering priapism only when the penis is in its flaccid state.	High (119)	Conditional
85. Use digoxin, a-adrenergic agonists, baclofen, gabapentin, or terbutaline only in patients with very frequent and uncontrolled relapses stuttering priapism.	Low (119-121)	Conditional
86. Use intracavernous self-injections at home of sympathomimetic drugs until ischaemic priapism has been alleviated.	Low (119-121)	Conditional

Clinical Indicators for monitoring:

1. **Medical and sexual history.**
2. ***Focused* physical examination.**
3. **laboratory investigations, complete blood count, coagulation profile and arterial blood gases.**
4. **Color duplex ultrasound of the penis and perineum**

Update of Guidelines

These guidelines will be updated whenever there is new evidence.

References

1- El-Sakka AI. Erectile dysfunction in Arab countries. Part I: Prevalence and correlates. Arab Journal of Urology (2012) 10, 97–103.

2- El-Sakka AI. Characteristics of erectile dysfunction in Saudi patients. Int J Impot Res 2004;16:13–20.

3- Lindau ST, Schumm LP, Laumann EO, Levinson W, O'Muircheartaigh CA, Waite LJ. A study of sexuality and health among older adults in the United States. N Engl J Med. 2007 Aug 23;357(8):762-74. doi: 10.1056/NEJMoa067423. PMID: 17715410; PMCID: PMC2426743.

4- Rosenberg MT, Sadovsky R. Identification and diagnosis of premature ejaculation. Int J Clin Pract. 2007 Jun;61(6):903-8. doi: 10.1111/j.1742-1241.2007.01337.x. PMID: 17504352.

5- El-Sakka A. I. Middle East Cultural Barriers and the Treatment of Sexual Problems. In., Cultural Differences and the Practice of Sexual Medicine, "Trends in Andrology and Sexual Medicine" (eds). Springer Science + Business Media, Chapter 8, P 135-148. 2020.

6- Luca G, Parrettini S, Sansone A, Calafiore R, Jannini EA. The Inferto-Sex Syndrome (ISS): sexual dysfunction in fertility care setting and assisted reproduction. J Endocrinol Invest. 2021 Oct;44(10):2071-2102. doi: 10.1007/s40618-021-01581-w. Epub 2021 May 6. PMID: 33956331; PMCID: PMC8421318.

7- Jain K, Radhakrishnan G, Agrawal P. Infertility and psychosexual disorders: relationship in infertile couples. Indian J Med Sci. 2000 Jan;54(1):1-7. PMID: 11214514.

8- Zargooshi J. Male sexual dysfunction in unconsummated marriage: long-term outcome in 417 patients. J Sex Med. 2008 Dec;5(12):2895-903. doi: 10.1111/j.1743-6109.2008.01004.x. PMID: 19090943.

9- Zargooshi J. Unconsummated marriage: clarification of aetiology; treatment with intracorporeal injection. BJU Int. 2000 Jul;86(1):75-9. doi: 10.1046/j.1464-410x.2000.00727.x. PMID: 10886087.

10- Ozdemir O, Simsek F, Ozkardeş S, Incesu C, Karakoç B. The unconsummated marriage: its frequency and clinical characteristics in a sexual dysfunction clinic. J Sex Marital Ther. 2008; 34(3):268-79. doi: 10.1080/00926230701866380. PMID: 18398764.

11- Addar MH. The unconsummated marriage: causes and management. Clin Exp Obstet Gynecol. 2004;31(4):279-81. PMID: 15672966.

12- Elbedour S, Onwuegbuzie AJ, Caridine C, Abu-Saad H. The effect of polygamous marital structure on behavioral, emotional, and academic adjustment in children: a comprehensive review of the literature. Clin Child Fam Psychol Rev. 2002 Dec;5(4):255-71. doi: 10.1023/a:1020925123016. PMID: 12495269.

13- Mengistu N, Shumye S, Tesfaye TS, Haile S, Bayisa Y, Yimer S, Tadesse M, Markos T, Madoro D, Assefa DG, Molla W, Abebe L, Molla A, Wudneh A, Duko B. Stressful life experience of the first married women in polygamous families in Gedeo zone, South Ethiopia: a qualitative study, 2021. BMC Psychol. 2022 Feb 22;10(1):40. doi: 10.1186/s40359-022-00753-4. Erratum in: BMC Psychol. 2022 Aug 2; 10(1):191. PMID: 35193677; PMCID: PMC8864848.

14- Kelberga AK, Martinsone B. Differences in Motivation to Engage in Sexual Activity Between People in Monogamous and Non-monogamous Committed Relationships. Front Psychol. 2021 Nov 3;12:753460. doi: 10.3389/fpsyg.2021.753460. PMID: 34803835; PMCID: PMC8595918.
15- Ekerbiçer HÇ, Resim S, Efe E, Bahar MR, Altunören Ö, Küçükdurmaz F, Benlioğlu C. A Comparison of Sexual Function, Psychological Status, and Sociodemographic Characteristics of Turkish Men within Polygamous and Monogamous Marriages. Balkan Med J. 2016 Jul;33(4):383-9. doi: 10.5152/balkanmedj.2016.16459. Epub 2016 Jul 1. PMID: 27606132; PMCID: PMC5001814.
16- Is one wife enough? Polygamy's increasingly threatened role in the modern world. Asiaweek. 1993 Dec 8:28-30, 35. PMID: 12346310.
17- Mohamed AH, Mohamud HA, Yasar A. The prevalence of premature ejaculation and its relationship with polygamous men: a cross-sectional observational study at a tertiary hospital in Somalia. BMC Urol. 2021 Dec 16;21(1):175. doi: 10.1186/s12894-021-00942-0. PMID: 34915878; PMCID: PMC8680334.
18- Guyatt, G.H., et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. BMJ, 2008. 336: 924.
19- Guyatt, G.H., et al. What is "quality of evidence" and why is it important to clinicians? BMJ, 2008. 336: 995
20- Salonia (Chair), C. Bettocchi, P. Capogrosso, J. Carvalho, G. Corona, G. Hatzichristodoulou, et. al. *EAU Guidelines. Edn. presented at the EAU Annual Congress Milan 2023. ISBN 978-94-92671-19-6.*
21- Burnett AL, Nehra A, Breau RH, Culkin DJ, Faraday MM, Hakim LS, Heidelbaugh J, Khera M, McVary KT, Miner MM, Nelson CJ, Sadeghi-Nejad H, Seftel AD, Shindel AW . Erectile Dysfunction: AUA Guideline. J Urol. 2018 Sep;200(3):633-641. doi:10.1016/j.juro.2018.05.004. Epub 2018 May 7.
22- Hackett G, Kirby M, Wylie K, Heald A, Ossei-Gerning N, Edwards D, Muneer A. British Society for Sexual Medicine Guidelines on the Management of Erectile Dysfunction in Men-2017. J Sex Med. 2018 Apr;15(4):430-457. doi: 10.1016/j.jsxm.2018.01.023. Epub 2018 Mar 14. PMID: 29550461.
23- ISSM QUICK REFERENCE GUIDE ON TESTOSTERONE DEFICIENCY FOR MEN. Version: September 2015, International Society for Sexual Medicine - www.issm.info
24- ISSM QUICK REFERENCE GUIDE TO PE. Version: January 2015 International Society for Sexual Medicine - www.issm.info
25- Goodman N, Guay A, Dandona P, Dhindsa S, Faiman C, Cunningham GR; AACE Reproductive Endocrinology Scientific Committee.. AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS AND AMERICAN COLLEGE OF ENDOCRINOLOGY POSITION STATEMENT ON THE ASSOCIATION OF TESTOSTERONE AND CARDIOVASCULAR RISK. Endocr Pract. 2015 Sep;21(9):1066-73. doi: 10.4158/EP14434.PS
26- Fode M, Salonia A, Minhas S, Burnett AL, Shindel AW. Late-onset Hypogonadism and Testosterone Therapy. A Summary of Guidelines from the American Urological Association and the European Association of Urology. Eur Urol Focus. 2019 Jul; 5(4): 539-544. doi:10.1016/j.euf.2019.02.021. Epub 2019 Mar 8.
27- Hatzichristou, D.G., et al. Nocturnal penile tumescence and rigidity monitoring in young potent volunteers: reproducibility, evaluation criteria and the effect of sexual intercourse. J Urol, 1998. 159: 1921.
28- Mulhall JP, Goldstein I, Bushmakin AG et al: Validation of the erection hardness score. J Sex Med 2007; 4: 1626.
29- Rosen RC, Cappelleri JC, Smith MD et al: Development and evaluation of an abridged, 5-item version of the international index of erectile function (IIEF-5) as a diagnostic tool for erectile dysfunction. Int J Impot Res 1999; 11: 319

30- Shamloul R, Ghanem H, Abou-zeid A. Validity of the Arabic version of the sexual health inventory for men among Egyptians. Int J Impot Res. 2004 Oct;16(5):452-5. doi: 10.1038/sj.ijir.3901248. PMID: 15175638.
31- Abdelrahman Elnashar, Amr M. Gadallah, Alaa A. Abdelaal, et al., Can the International Index of Erectile Function (IIEF-5) be used as a diagnostic tool to the severity of vasculogenic erectile dysfunction? Middle East Fertility Society Journal (2012) 17, 101–104.
32- Arthur L. Burnett, Ajay Nehra, Rodney H. Breau,et al., Erectile Dysfunction: AUA Guideline. J Urol, Vol. 200, 633-641, September 2018.
33- Kamel I, Gadalla A, Ghanem H, Oraby M. Comparing penile measurements in normal and erectile dysfunction subjects. J Sex Med 2009; 6:2305–10.
34- Davis-Joseph B, Tiefer L, Melman A. Accuracy of the initial history and physical examination to establish the etiology of erectile dysfunction. Urology 1995; 45:498–502.
35- Heidenreich, A., et al. EAU guidelines on prostate cancer. part 1: screening, diagnosis, and local treatment with curative intent-update 2013. Eur Urol, 2014. 65: 124.
36- Maggi, M., et al. Hormonal causes of male sexual dysfunctions and their management (hyperprolactinemia, thyroid disorders, GH disorders, and DHEA). J Sex Med, 2013. 10: 661.
37- El-Sakka AI, Hassoba HM, Sayed HM, Tayeb KA. Pattern of endocrinal changes in patients with sexual dysfunction. J Sex Med 2005;2:551–8.
38- El-Sakka AI, Hassoba HM, Elbakry AM, Hassan HA. Prostatic specific antigen in patients with hypogonadism: effect of testosterone replacement. J Sex Med 2005; 2:235–40.
39- Zohdy W, Kamal EE, Ibrahim Y. Androgen deficiency and abnormal penile duplex parameters in obese men with erectile dysfunction. J Sex Med 2007; 4:797–808.
40- Goodman N, Guay A, Dandona P, Dhindsa S, Faiman C, Cunningham GR; AACE Reproductive Endocrinology Scientific Committee.. AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS AND AMERICAN COLLEGE OF ENDOCRINOLOGY POSITION STATEMENT ON THE ASSOCIATION OF TESTOSTERONE AND CARDIOVASCULAR RISK. Endocr Pract. 2015 Sep;21(9):1066-73. doi: 10.4158/EP14434.PS
41- Fode M, Salonia A, Minhas S, Burnett AL, Shindel AW. Late-onset Hypogonadism and Testosterone Therapy. A Summary of Guidelines from the American Urological Association and the European Association of Urology. Eur Urol Focus. 2019 Jul; 5(4): 539-544. doi:10.1016/j.euf.2019.02.021. Epub 2019 Mar 8.
42- McMahon CG. Current diagnosis and management of erectile dysfunction. Med J Aust. 2019 Jun;210(10):469-476. doi: 10.5694/mja2.50167. Epub 2019 May 17. PMID: 31099420.
43- Wiggins A, Tsambarlis PN, Abdelsayed G, Levine LA. A treatment algorithm for healthy young men with erectile dysfunction. BJU Int. 2019 Jan;123(1):173-179. doi: 10.1111/bju.14458. Epub 2018 Aug 28. PMID: 29993196.
44- Ismail EA, El-Sakka AI. Innovative trends and perspectives for erectile dysfunction treatment: A systematic review. Arab J Urol. **2016** May 18;14(2):84-93. Doi: 10.1016/j.aju.2016.04.002. PMID: 27493808; PMCID: PMC4963167.
45- Seftel AD, Mohammed MA, Althof SE. Erectile dysfunction: etiology, evaluation, and treatment options. Med Clin North Am. 2004 Mar;88(2):387-416, xi. Doi: 10.1016/S0025-7125(03)00187-1. PMID: 15049584.
46- El-Sakka AI. Pharmacotherapy for erectile dysfunction in diabetic males. Expert Opin Pharmacother. 2018 Aug;19(12):1345-1356. Doi: 10.1080/14656566.2018.1505866. Epub 2018 Aug 14. PMID: 30106605.
47- Ventimiglia E, Capogrosso P, Montorsi F, Salonia A. The safety of phosphodiesterase type 5 inhibitors for erectile dysfunction. Expert Opin Drug Saf 2016;15:141–52.

48- El-Sakka AI, Anis T, Khadr N, Ismail TA, Hegazy AM, Fekry O, Youseif E. Sildenafil for erectile dysfunction in the Middle East: observational analysis of patients with diabetes and/or hypertension treated in the clinical practice setting. J Int Med Res. 2011;39(2):558-68. Doi: 10.1177/147323001103900225. PMID: 21672361.
49- Walker LM, Santos-Iglesias P. On the Relationship Between Erectile Function and Sexual Distress in Men with Prostate Cancer. Arch Sex Behav. 2020 Jul;49(5):1575-1588. doi: 10.1007/s10508-019-01603-y. Epub 2020 Feb 18. PMID: 32072396.
50- Goonewardene SS, Persad R. Psychosexual care in prostate cancer survivorship: a systematic review. Transl Androl Urol. 2015 Aug;4(4):413-20. doi: 10.3978/j.issn.2223-4683.2015.08.04. PMID: 26816840; PMCID: PMC4708596.
51- Ramirez-Fort MK, Suarez P, Carrion M, Weiner D, Postl C, Arribas R, Sayyah M, Forta DV, Niaz MJ, Feily A, Lange CS, Fort ZZ, Fort M. Prostatic irradiation-induced sexual dysfunction: A review and multidisciplinary guide to management in the radical radiotherapy era (Part III on Psychosexual Therapy and the Masculine Self-Esteem). Rep Pract Oncol Radiother. 2020 Jul-Aug;25(4):625-631. doi: 10.1016/j.rpor.2020.03.014. Epub 2020 Apr 30. PMID: 32536830; PMCID: PMC7276493.
52- Rajkumar RP, Kumaran AK. Depression and anxiety in men with sexual dysfunction: a retrospective study. Compr Psychiatry. 2015 Jul;60:114-8. doi: 10.1016/j.comppsych.2015.03.001. Epub 2015 Mar 19. PMID: 25818906.
53- Avasthi A, Grover S, Kaur R, Prakash O, Kulhara P. Impact of nonorganic erectile dysfunction on spouses: a study from India. J Sex Med. 2010 Nov;7(11):3666-74. doi: 10.1111/j.1743-6109.2009.01647.x. PMID: 20059659.
54- Montorsi F, Brock G, Lee J, Shapiro J, Van Poppel H, Graefen M, Stief C. Effect of nightly versus on-demand vardenafil on recovery of erectile function in men following bilateral nerve-sparing radical prostatectomy. Eur Urol. 2008 Oct;54(4):924-31. doi: 10.1016/j.eururo.2008.06.083. Epub 2008 Jul 9. PMID: 18640769.
55- Sari Motlagh R, Abufaraj M, Yang L, Mori K, Pradere B, Laukhtina E, Mostafaei H, Schuettfort VM, Quhal F, Montorsi F, Amjadi M, Gratzke C, Shariat SF. Penile Rehabilitation Strategy after Nerve Sparing Radical Prostatectomy: A Systematic Review and Network Meta-Analysis of Randomized Trials. J Urol. 2021 Apr;205(4):1018-1030. doi: 10.1097/JU.0000000000001584. Epub 2021 Jan 14. PMID: 33443457.
56- Feng D, Liu S, Yang Y, Bai Y, Li D, Han P, Wei W. Generating comprehensive comparative evidence on various interventions for penile rehabilitation in patients with erectile dysfunction after radical prostatectomy: a systematic review and network meta-analysis. Transl Androl Urol. 2021 Jan;10(1):109-124. doi: 10.21037/tau-20-892. PMID: 33532301; PMCID: PMC7844489.
57- Coombs PG, Heck M, Guhring P, Narus J, Mulhall JP. A review of outcomes of an intracavernosal injection therapy programme. BJU Int. 2012 Dec;110(11):1787-91. doi: 10.1111/j.1464-410X.2012.11080.x. Epub 2012 May 7. PMID: 22564343.
58- Mohamed M. Seftel AD. Althof S.et al. Office evaluation of male sexual dysfunction: detection of hypogonadism, depression and erectile dysfunction [abstract 1261 J Urol 2003; supple:169.
59- Elkamshoushi AM, Badae NM, Kabary MG, Omar SI. Evaluation of daily avanafil efficacy in improving the endothelial function in Egyptian males with erectile dysfunction. Andrologia. 2021 Feb;53(1):e13833. doi: 10.1111/and.13833. Epub 2020 Oct 28. PMID: 33112433.
60- Li J, Peng L, Cao D, He L, Li Y, Wei Q. Avanafil for the Treatment of men With Erectile Dysfunction: A Systematic Review and Meta-analysis of Randomized Controlled Trials. Am J Mens Health. 2019 Sep-Oct;13(5):1557988319880764. doi: 10.1177/1557988319880764. PMID: 31672076; PMCID: PMC6826932.

61- Ismail EA, Younis SE, Ismail IY, El-Wazir YM, El-Sakka AI. Early administration of phosphodiesterase 5 inhibitors after induction of diabetes in a rat model may prevent erectile dysfunction. Andrology. 2020 Jan;8(1):241-248.
62- Trost LW, Munarriz R, Wang R, Morey A, Levine L. External Mechanical Devices and Vascular Surgery for Erectile Dysfunction. J Sex Med. 2016 Nov;13(11):1579-1617. doi: 10.1016/j.jsxm.2016.09.008. PMID: 27770853.
63- Pajovic B, Dimitrovski A, Fatic N, Malidzan M, Vukovic M. Vacuum erection device in treatment of organic erectile dysfunction and penile vascular differences between patients with DM type I and DM type II. Aging Male. 2017 Mar;20(1):49-53. doi: 10.1080/13685538.2016.1230601. Epub 2016 Oct 1. PMID: 27690728.
64- El-Sakka AI. What is the current role of intracavernosal injection in management of erectile dysfunction? Int J Impot Res. 2016 May;28(3):88-95. doi: 10.1038/ijir.2016.14. Epub 2016 Apr 14. PMID: 27076113.
65- Capogrosso P, Frey A, Jensen CFS, Rastrelli G, Russo GI, Torremade J, Albersen M, Gruenwald I, Reisman Y, Corona G. Low-Intensity Shock Wave Therapy in Sexual Medicine-Clinical Recommendations from the European Society of Sexual Medicine (ESSM). J Sex Med. 2019 Oct;16(10):1490-1505. doi: 10.1016/j.jsxm.2019.07.016. Epub 2019 Aug 22. PMID: 31447380.
66- Chung E, Cartmill R. Evaluation of clinical efficacy, safety and patient satisfaction rate after low-intensity extracorporeal shockwave therapy for the treatment of male erectile dysfunction: an Australian first open-label single-arm prospective clinical trial. BJU Int. 2015 Apr;115 Suppl 5:46-9. doi: 10.1111/bju.13035. PMID: 25828173.
67- Young Academic Urologists Men's Health Group; Fode M, Hatzichristodoulou G, Serefoglu EC, Verze P, Albersen M. Low-intensity shockwave therapy for erectile dysfunction: is the evidence strong enough? Nat Rev Urol. 2017 Oct;14(10):593-606. doi: 10.1038/nrurol.2017.119. Epub 2017 Jul 25. PMID: 28741629.
68- Sokolakis I, Hatzichristodoulou G. Clinical studies on low intensity extracorporeal shockwave therapy for erectile dysfunction: a systematic review and meta-analysis of randomised controlled trials. Int J Impot Res. 2019 May;31(3):177-194. doi: 10.1038/s41443-019-0117-z. Epub 2019 Jan 21. PMID: 30664671.
69- Kalyvianakis D, Hatzichristou D. Low-Intensity Shockwave Therapy Improves Hemodynamic Parameters in Patients With Vasculogenic Erectile Dysfunction: A Triplex Ultrasonography-Based Sham-Controlled Trial. J Sex Med. 2017 Jul;14(7):891-897. doi: 10.1016/j.jsxm.2017.05.012. Erratum in: J Sex Med. 2018 Feb;15(2):270. PMID: 28673433.
70- Tao R, Chen J, Wang D, Li Y, Xiang J, Xiong L, Ji J, Wu J, Zhou S, Jia C, Lv J, Yang J, Tang Q. The Efficacy of Li-ESWT Combined With VED in Diabetic ED Patients Unresponsive to PDE5is: A Single-Center, Randomized Clinical Trial. Front Endocrinol (Lausanne). 2022 Jun 23;13:937958. doi: 10.3389/fendo.2022.937958. PMID: 35813628; PMCID: PMC9259797.
71- Mykoniatis I, Pyrgidis N, Zilotis F, Kapoteli P, Fournaraki A, Kalyvianakis D, Hatzichristou D. The Effect of Combination Treatment With Low-Intensity Shockwave Therapy and Tadalafil on Mild and Mild-To-Moderate Erectile Dysfunction: A Double-Blind, Randomized, Placebo-Controlled Clinical Trial. J Sex Med. 2022 Jan;19(1):106-115. doi: 10.1016/j.jsxm.2021.10.007. Epub 2021 Dec 2. PMID: 34866029.
72- Kalyvianakis D, Mykoniatis I, Pyrgidis N, Kapoteli P, Zilotis F, Fournaraki A, Hatzichristou D. The Effect of Low-Intensity Shock Wave Therapy on Moderate Erectile Dysfunction: A Double-Blind, Randomized, Sham-Controlled Clinical Trial. J Urol. 2022 Aug;208(2):388-395. doi: 10.1097/JU.0000000000002684. Epub 2022 May 6. PMID: 35830338.
73- Kalyvianakis D, Mykoniatis I, Memmos E, Kapoteli P, Memmos D, Hatzichristou D. Low-intensity shockwave therapy (LiST) for erectile dysfunction: a randomized clinical trial assessing the impact of energy flux density (EFD) and frequency of sessions. Int J Impot

Res. 2020 May;32(3):329-337. doi: 10.1038/s41443-019-0185-0. Epub 2019 Sep 2. PMID: 31474753.
74- Adeldaeim HM, Abouyoussif T, Gebaly OE, Assem A, Wahab MMA, Rashad H, Sakr M, Zahran AR. Prognostic Indicators for Successful Low-intensity Extracorporeal Shock Wave Therapy Treatment of Erectile Dysfunction. Urology. 2021 Mar;149:133-139. doi: 10.1016/j.urology.2020.12.019. Epub 2020 Dec 26. PMID: 33373703.
75- Rho BY, Kim SH, Ryu JK, Kang DH, Kim JW, Chung DY. Efficacy of Low-Intensity Extracorporeal Shock Wave Treatment in Erectile Dysfunction Following Radical Prostatectomy: A Systematic Review and Meta-Analysis. J Clin Med. 2022 May 14;11(10):2775. doi: 10.3390/jcm11102775. PMID: 35628901; PMCID: PMC9145026.
76- Towe M, Peta A, Saltzman RG, Balaji N, Chu K, Ramasamy R. The use of combination regenerative therapies for erectile dysfunction: rationale and current status. Int J Impot Res. 2022 Dec;34(8):735-738. doi: 10.1038/s41443-021-00456-1. Epub 2021 Jul 12. PMID: 34253869.
77- Oudelaar BW, Peerbooms JC, Huis In 't Veld R, Vochteloo AJH. Concentrations of Blood Components in Commercial Platelet-Rich Plasma Separation Systems: A Review of the Literature. Am J Sports Med. 2019 Feb;47(2):479-487. doi: 10.1177/0363546517746112. Epub 2018 Jan 16. PMID: 29337592.
78- Poulios E, Mykoniatis I, Pyrgidis N, Zilotis F, Kapoteli P, Kotsiris D, Kalyvianakis D, Hatzichristou D. Platelet-Rich Plasma (PRP) Improves Erectile Function: A Double-Blind, Randomized, Placebo-Controlled Clinical Trial. J Sex Med. 2021 May;18(5):926-935. doi: 10.1016/j.jsxm.2021.03.008. Epub 2021 Apr 24. PMID: 33906807.
79- Zaghloul AS, El-Nashaar AM, Said SZ, Osman IA, Mostafa T. Assessment of the intracavernosal injection platelet-rich plasma in addition to daily oral tadalafil intake in diabetic patients with erectile dysfunction non-responding to on-demand oral PDE5 inhibitors. Andrologia. 2022 Jul;54(6):e14421. doi: 10.1111/and.14421. Epub 2022 Mar 17. PMID: 35301742.
80- Alkandari MH, Touma N, Carrier S. Platelet-Rich Plasma Injections for Erectile Dysfunction and Peyronie's Disease: A Systematic Review of Evidence. Sex Med Rev. 2022 Apr;10(2):341-352. doi: 10.1016/j.sxmr.2020.12.004. Epub 2021 Jul 2. PMID: 34219010.
81- Panunzio A, Labate C, Zacheo F, Orlando R, Rizzo FL, Porcaro AB, Migliorini F, Pagliarulo V, Tafuri A. Platelet-rich plasma intracavernosal injections for the treatment of primary organic erectile dysfunction: a systematic review and meta-analysis of contemporary controlled studies. Int J Impot Res. 2023 Nov 22. doi: 10.1038/s41443-023-00798-y. Epub ahead of print. PMID: 37993601.
82- Fazekas D, Campbell K, Ledesma B, Masterson T. Platelet-rich plasma for erectile dysfunction: a review of the current research landscape. Sex Med Rev. 2023 Sep 27;11(4):369-374. doi: 10.1093/sxmrev/qead032. PMID: 37786350.
83- Shaher H, Fathi A, Elbashir S, Abdelbaki SA, Soliman T. Is Platelet Rich Plasma Safe and Effective in Treatment of Erectile Dysfunction? Randomized Controlled Study. Urology. 2023 May;175:114-119. doi: 10.1016/j.urology.2023.01.028. Epub 2023 Feb 1. PMID: 36736914.
84- Reddy AG, Dick BP, Natale C, Akula KP, Yousif A, Hellstrom WJG. Application of Botulinum Neurotoxin in Male Sexual Dysfunction: Where Are We Now? Sex Med Rev. 2021 Apr;9(2):320-330. doi: 10.1016/j.sxmr.2020.05.004. Epub 2020 Jul 5. PMID: 32641225.
85- Ghanem H, Raheem AA, Abdel Rahman IFS, Johnson M, Abdel- Raheem T. Botulinum neurotoxin and its potential role in the treatment of erectile dysfunction. Sex Med Rev 2018;6(1):135– 42. doi:10.1016/j.sxmr.2017.07.008.
86- Abdelrahman IFS, Raheem AA, Elkhiat Y, Aburahma AA, Abdel-Raheem T, Ghanem H. Safety and efficacy of botulinum neurotoxin in the treatment of erectile dysfunction refractory to phosphodiesterase inhibitors: Results of a randomized controlled trial.

Andrology. 2022 Feb;10(2):254-261. doi: 10.1111/andr.13104. Epub 2021 Oct 7. PMID: 34618409.
87- El-Shaer W, Ghanem H, Diab T, Abo-Taleb A, Kandeel W. Intra-cavernous injection of BOTOX® (50 and 100 Units) for treatment of vasculogenic erectile dysfunction: Randomized controlled trial. Andrology. 2021 Jul;9(4):1166-1175. doi: 10.1111/andr.13010. Epub 2021 Apr 20. PMID: 33784020.
88- Babaei, A.R., M.R. Safarinejad, and A.A. Kolahi, Penile revascularization for erectile dysfunction: a systematic review and meta-analysis of effectiveness and complications. Urol J, 2009. 6(1): p. 1-7.
89- Hellstrom, W.J., et al., Implants, mechanical devices, and vascular surgery for erectile dysfunction. J Sex Med, 2010. 7(1 Pt 2): p. 501-23.
90- Kawanishi, Y., et al., Penile revascularization surgery for arteriogenic erectile dysfunction: the long-term efficacy rate calculated by survival analysis. BJU Int, 2004. 94(3): p. 361-8.
91- Sohn, M., et al., Standard operating procedures for vascular surgery in erectile dysfunction: revascularization and venous procedures. J Sex Med, 2013. 10(1): p. 172-9.
92- Antonini, G., et al., Minimally invasive infrapubic inflatable penile prosthesis implant for erectile dysfunction: evaluation of efficacy, satisfaction profile and complications. Int J Impot Res, 2016. 28(1): p. 4-8.
93- Kramer, A.C. and A. Schweber, Patient expectations prior to coloplast titan penile prosthesis implant predicts postoperative satisfaction. J Sex Med, 2010. 7(6): p. 2261-2266.
94- Pisano F, Falcone M, Abbona A, Oderda M, Soria F, Peraldo F, Marson F, Barale M, Fiorito C, Gurioli A, Frea B, Gontero P. The importance of psychosexual counselling in the re-establishment of organic and erotic functions after penile prosthesis implantation. Int J Impot Res. 2015 Sep-Oct;27(5):197-200. doi: 10.1038/ijir.2015.17. Epub 2015 Aug 13. PMID: 26268774.
95- Montague, D.K., Penile prosthesis implantation in the era of medical treatment for erectile dysfunction. Urol Clin North Am, 2011. 38(2): p. 217-25.
96- Mulcahy, J.J., et al., The penile implant for erectile dysfunction. J Sex Med, 2004. 1(1): p. 98-109.
97- Natali, A., R. Olianas, and M. Fisch, Penile implantation in Europe: successes and complications with 253 implants in Italy and Germany. J Sex Med, 2008. 5(6): p. 1503-12.
98- Akakpo, W., M.A. Pineda, and A.L. Burnett, Critical Analysis of Satisfaction Assessment After Penile Prosthesis Surgery. Sex Med Rev, 2017. 5(2): p. 244-251.
99- Carson, C.C., J.J. Mulcahy, and F.E. Govier, Efficacy, safety and patient satisfaction outcomes of the AMS 700CX inflatable penile prosthesis: results of a long-term multicenter study. AMS 700CX Study Group. J Urol, 2000. 164(2): p. 376-80.
100- Henry, G.D., et al., An outcomes analysis of over 200 revision surgeries for penile prosthesis implantation: a multicenter study. J Sex Med, 2012. 9(1): p. 309-15.
101- Serefoglu EC, McMahon CG, Waldinger MD, Althof SE, Shindel A, Adaikan G, et al. An evidence-based unified definition of lifelong and acquired premature ejaculation: report of the second International Society for Sexual Medicine Ad Hoc Committee for the Definition of Premature Ejaculation. J Sex Med. 2014 Jun;11(6):1423-41. doi: 10.1111/jsm.12524. Epub 2014 May 22. PMID:24848805.
102- Waldinger, M.D., et al. The use of old and recent DSM definitions of premature ejaculation in observational studies: a contribution to the present debate for a new classification of PE in the DSM-V. J Sex Med, 2008. 5: 1079.
103- cMahon CG. Clinical trial methodology in premature ejaculation observational, interventional, and treatment preference studies–part I–defining and selecting the study population. J Sex Med. 2008;5(8):1805–1816.

104- Arafa M, Shamloul R. Development and validation of the Arabic Index of Premature Ejaculation (AIPE). J Sex Med. 2007;4:1750–1756.
105- El-Sakka AI. Severity of erectile dysfunction at presentation: effect of premature ejaculation and low desire. Urology. 2008;71(1):94–98.
106- Althof SE, McMahon CG, Waldinger MD, et al. An update of the International Society of Sexual Medicine's guidelines for the diagnosis and treatment of premature ejaculation (PE). J Sex Med. 2014;11(6):1392–1422.
107- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Washington, DC: American Psychiatric Association; 2013.
108- Abdel-Hamid IA and Ali OI: Delayed Ejaculation: Pathophysiology, Diagnosis, and Treatment World J Mens Health 2018 January 36(1): 22-40.
109- Abdel-Hamid IA, Elsaied MA and Mostafa T. The drug treatment of delayed ejaculation. Transl Androl Urol 2016;5(4):576-591.
110- Burri A, Porst H. The relationship between penile deformity, age, psychological bother, and erectile dysfunction in a sample of men with Peyronie's Disease (PD). Int J Impot Res. 2018 Aug;30(4):171-178. doi: 10.1038/s41443-018-0029-3. Epub 2018 May 25. PMID: 29795530.
111- Zachalski W, Krajka K, Matuszewski M. Evaluation of the Treatment of Congenital Penile Curvature Including Psychosexual Assessment. J Sex Med. 2015 Aug;12(8):1828-35. doi: 10.1111/jsm.12933. Epub 2015 Jul 2. PMID: 26139203.
112- Paulis G, Romano G, Paulis A. Prevalence, psychological impact, and risk factors of erectile dysfunction in patients with Peyronie's disease: a retrospective analysis of 309 cases. Res Rep Urol. 2016 Jul 18;8:95-103. doi: 10.2147/RRU.S109319. PMID: 27486570; PMCID: PMC4958366.
113- Low P, Wang L, Li KD, Shibley WP, Cedars BE, Holler JT, Enriquez A, Sadeghi-Nejad H, Amend GM, Breyer BN. Thematic analysis of the psycho-sexual symptoms in patients with Peyronie's disease present on online forums. Int J Impot Res. 2022 Jun 16. doi: 10.1038/s41443-022-00589-x. Epub ahead of print. PMID: 35710605.
114- El-Sakka A. I. Medical, Non-invasive and Minimally Invasive Treatment for Peyronie's Disease: A Systematic Review. Andrology. 2021; 9:511–528. https://doi. org/10.1111/andr.12927
115- Nehra A, Alterowitz R, Culkin DJ, Faraday MM, Hakim LS, Heidelbaugh JJ, et al. American Urological Association Education and Research, Inc., Peyronie's Disease: AUA Guideline. J Urol. 2015 Sep;194(3):745-53. doi: 10.1016/j.juro.2015.05.098. Epub 2015 Jun 9. PMID: 26066402; PMCID: PMC5027990.
116- Yang D, Hatzichristodoulou K, Hebert J, etal. Multi-Center Experience Utilizing Collagen Fleece for Plaque Incision with Grafting to Correct Residual Curvature at Time of Inflatable Penile Prosthesis Placement in Peyronie's Disease Patients. J Sex Med 2020;17:S27-120.
117- Lue TF, El-Sakka AI. Venous patch graft for Peyronie's disease. Part I: Technique. J Urol 1998;160:2047-9.
118- Carson CC, Levine LA. Outcomes of surgical treatment of Peyronie's disease. BJU Int 2014;113:704-13.
119- Montague, D., Jarow, J., Broderick, G., Dmochowski, RR., Heaton, JP., Lue, TF. et al. (2003) American Urological Association guideline on the management of priapism. J Urol 170: 1318–1324.
120- Bivalacqua, T. and Burnett, A. (2006) Priapism: new concepts in the pathophysiology and new treatment strategies. Curr Urol Rep 7: 497–502.
121- Lue, T., Hellstrom, W., McAninch, J. and Tanagho, E. (1986) Priapism: a refined approach to diagnosis and treatment. J Urol 136: 104–108.

122- Broderick, G., Kadioglu, A., Bivalacqua, T., Ghanem, H., Nehra, A. and Shamloul, R. (2010) Priapism: pathogenesis, epidemiology, and management. J Sex Med 7: 476–500.
123- Ralph, D., Garaffa, G., Muneer, A. Freeman, A., Rees, R., Christopher, AN. et al. (2009) The immediate insertion of a penile prosthesis for acute ischaemic priapism. Eur Urol 56: 1033–1038.
124- Emad A. Salem and Ola El Aasser Management of Ischemic Priapism by Penile Prosthesis Insertion: Prevention of Distal Erosion The Journal Of Urology JUNE 2010. 183, 2300-2303.
125- Yafi FA, Hellstrom WJG. Immediate Placement of Penile Prosthesis for the Management of Ischemic Priapism as First-line Treatment. Eur Urol Focus. 2019 Jul;5(4):531-532. doi: 10.1016/j.euf.2019.01.001. Epub 2019 Jan 11. PMID: 30639251.
126- Capece M, La Rocca R, Mirone V, Bivalacqua TJ, Castiglione F, Albersen M, Ralph DJ, Muneer A, Garaffa G. A Systematic Review on Ischemic Priapism and Immediate Implantation: Do We Need More Data? Sex Med Rev. 2019 Jul;7(3):530-534. doi: 10.1016/j.sxmr.2018.10.007. Epub 2019 Mar 19. PMID: 30898595.

Annexes

Figure 1: Personalized Management Algorithm:

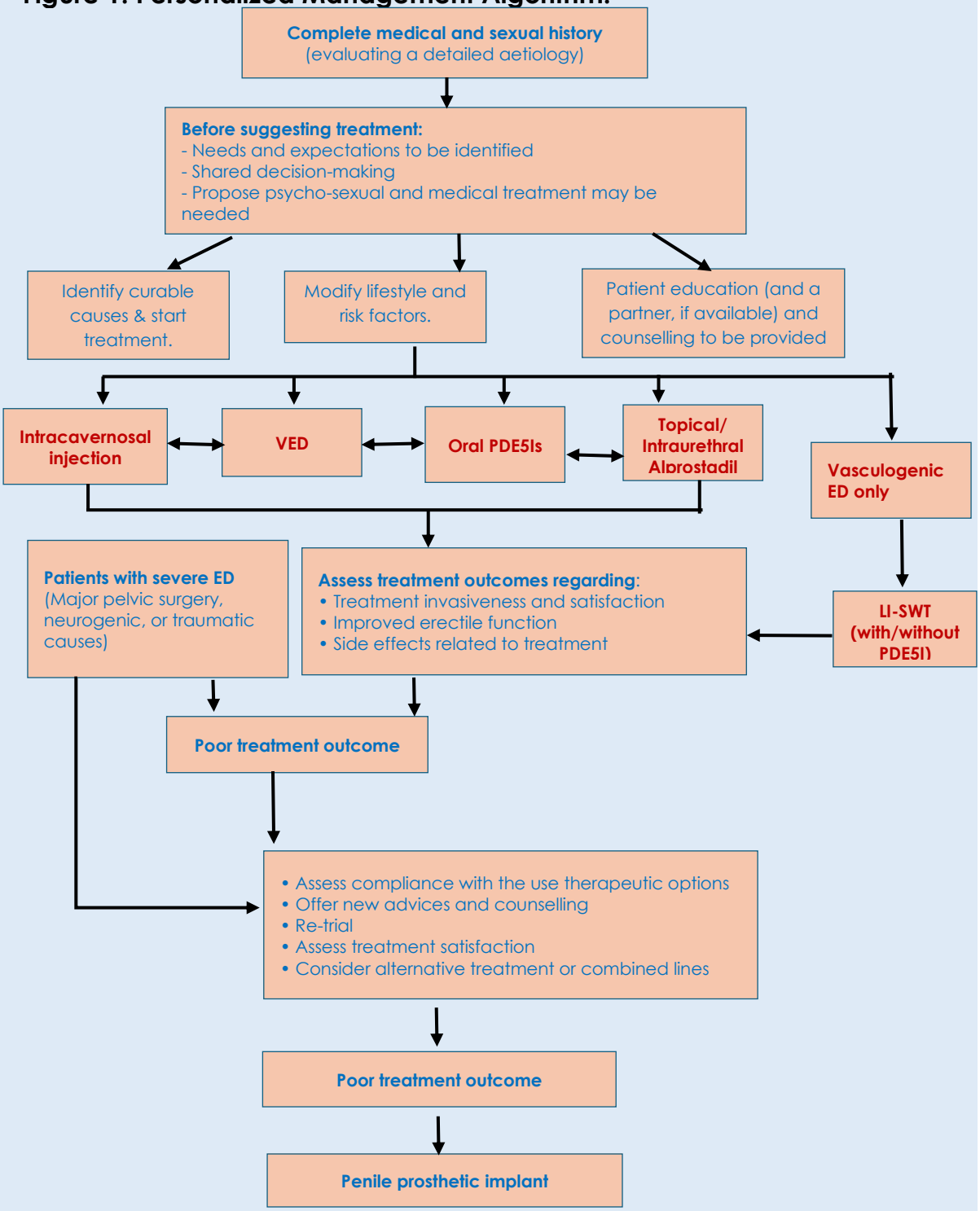

Figure 2: Management algorithm for Haemospermia

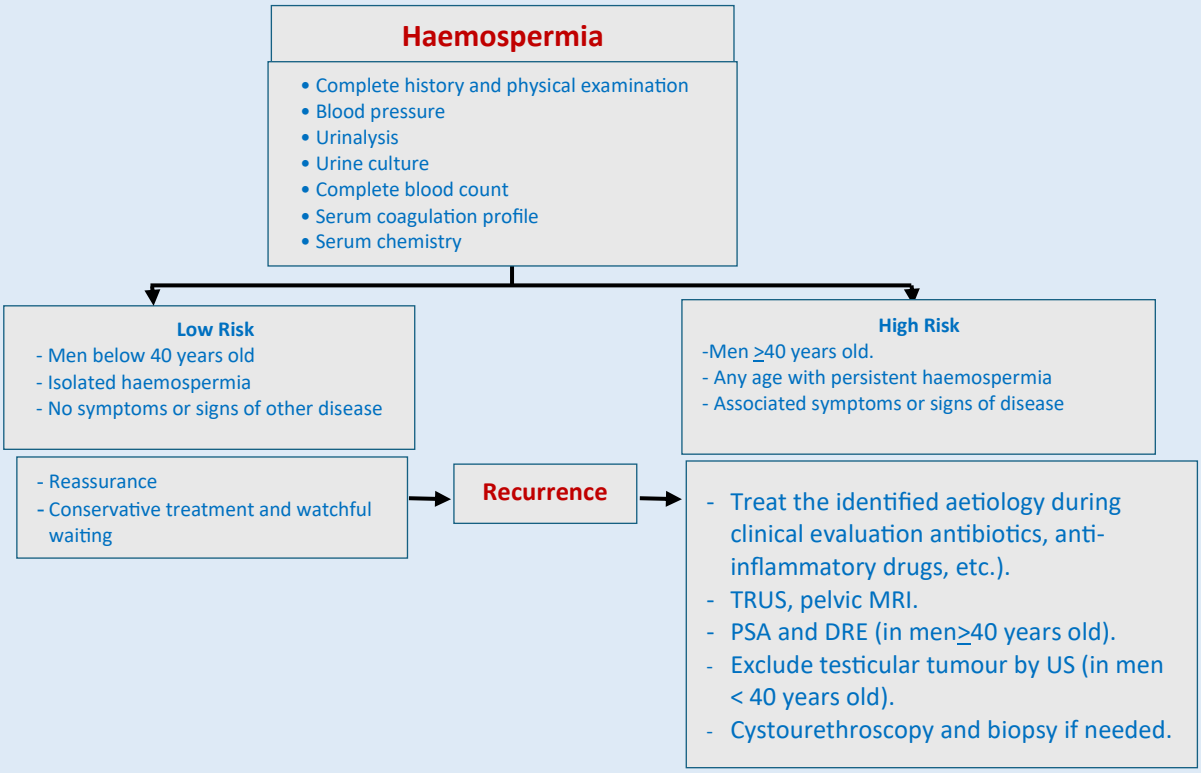

Table 4: Comparison of the properties of phosphodiesterase type 5 inhibitors (PDE5i) (42)

Property	Sildenafil	Tadalafil	Vardenafil	Avanafil
TMAX	30–120min	30–360min	30–120min	30–45min
Terminal half life	4h	17.5h	4h	6–17h
Available doses	25mg,50mg,100mg	5mg,10mg,20mg	5mg,10mg,20mg	50mg,100mh,200mg
Max dose	100mg	20mg	20mg	200mg
Efficacy	Each offer similar efficacy			
Side effects (5 most common)	Headache, flushing, dyspepsia, nasal congestion, alteration in color vision	Headache, dyspepsia, back pain, myalgia, nasal congestion	Headache, flushing, rhinitis, dyspepsia, sinusitis	Headache, flushing, rhinitis, dyspepsia, sinusitis
Use with a-blockers.	- Concomitant use of selective a-blockers does not present a risk for significant hypotension - There is a risk of significant hypotension when using non-selective a-blockers			
Contraindications	- Regularly or intermittent use of organic nitrates. - Known hypersensitivity to any component of the tablet			
Dose adjustments that may be needed	• Patients aged > 65 years. • Hepatic impairment • Renal impairment • Concomitant use of potent cytochrome P450 3A4 inhibitors (e.g. ritonavir, cobicistat and erythromycin) • Concomitant use of cimetidine with sildenafil			

TMAX = time to maximum plasma concentration.

Table 5: Clinical History, Physical Examination, Laboratory Investigations and Radiologic Assessment in Different Types of Priapism (119,120).

Variant	History and clinical examination	Penile blood appearance	Penile blood gas findings	Color Duplex ultrasonography findings
Ischemic priapism	Tender and rigid corpora cavernosa	Corpus cavernosum testing: blood is hypoxic and dark in color	pO2 <30 mmHg pCO2> 60mmHg pH<7.25	Minimal or absent blood flow
Nonischemic priapism	Perineal or penile trauma; non tender, partially tumescent corpora cavernosa	Corpus cavernosum testing: blood is oxygenated and red	pO2>90 mmHg pCO2< 40mmHg pH=7.4 similar to normal arterial blood)	Blood flow is normal to high in velocity
Stuttering (recurrent(priapism	Similar attacks	Corpus cavernosum testing: blood is hypoxic and dark in color	Blood gases: pO2<30 mmHg; pCO2>60 mmHg pH <7.25	Minimal or absent blood flow during acute priapism; normal blood flow otherwise

pCO2, partial pressure of carbon dioxide; pO2, partial pressure of oxygen.

Table 6: Percutaneous distal shunts, open distal shunts, open proximal shunts, and vein anastomoses/shunts

		Example	Technique
Distal shunts	Percutaneous distal shunts	Winter (corporoglanular)	shunt large biopsy needle is inserted through glans
		Ebbehoj (corporoglanular)	shunt #11 blade scalpel is percutaneously passed
		T shunt (corporoglanular shunt)	Modified Ebbehoj using #10 blade scalpel and introducing the scalpel rotating it inside 90°
	Open distal shunt	Al-Ghorab	A 1 cm incision is made distal to coronal sulcus with excision of 5 × 5 mm cone segment of distal tunica albuginea from each corporal body
		Burnett 'snake' maneuver	Modification of Al-Ghorab shunt. A Hegar dilator is used to evacuate ischemic blood through a distal tunical window
Proximal shunts	Open proximal shunt	Quackels or Sacher (corporospongiosal) shunt	In lithotomy position, bulbocavernosus muscle is dissected from corpus spongiosum and 1 cm staggered ellipses of tissue are incised/excised from spongiosal/corporal bodies, and the defects anastomosed together
	Corporo saphenous vein or superficial/deep dorsal vein shunts	Grayhack shunt	The saphenous vein is ligated and anastomosed with corpora cavernosa
		Barry shunt	The superficial or deep dorsal vein is ligated and anastomosed to the corpora cavernosa