Urologic Issues in LGBT Health

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Purpose

In this chapter we will provide a brief primer on urologic care with a focus on the particular needs of LGBT persons. It is our hope that this manuscript will be of use to primary care physicians who will see LGBT persons with urologic issues and to urologists who may not be familiar with issues germane to the LGBT community. We will address general urologic issues but will focus on urologic issues for which there is evidence of significant differences between LGBT and non-LGBT patients.

Learning Objectives

- Identify at least three ways in which urologic healthcare is sensitive for LGBT patients *(PC2, PBLI1, PBLI1, ICS2)*
- Describe lower urinary tract symptoms and how they may manifest in LGBT patients *(PC5)*
- Describe sexual function and dysfunction in LGBT patients *(PC5)*
- Discuss opportunities for screening for urologic malignancy in LGBT patients *(PC3, PC4)*

Urologic Healthcare for the LGBT Patient

A safe and welcoming environment is the foundation of productive encounters between health care providers and patients. In Western societies, heterosexuality and gender identity concordant with genital sex is the presumed norm. Individuals who are sexually attracted to members of the same sex (e.g. lesbian, gay, bisexual) and persons whose biological sex differs from their gender identity (transgender) are often collectively referred to as members of the LGBT (lesbian/gay/bisexual/transgender) community. A few key issues must be addressed when considering the "LGBT community":

1. While sexual expression is a key difference between LGBT and non-LGBT persons, LGBT persons may differ from their heterosexual peers in non-sexual ways (e.g. social support structures). Holistic assessment of the particular needs of an LGBT person includes

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understanding of LGBT issues that may not specifically relate to sexual activity.
2. Although many refer to the "LGBT community", it is important to recognize that there is no single unified LGBT community; rather, there are diverse communities of lesbian, gay, bisexual, and transgender persons who frequently have a common interest in advocacy and education of the public at large about sexual and gender diversity.
3. LGBT is the most familiar acronym to most individuals. The terms "queer" or "questioning" have been adopted by some individuals who do not identify as heterosexual nor as lesbian, gay, bisexual, or transgender. The acronym LGBT is sometimes extended to read LGBTQ; for the sake of convenience we will restrict use in this manuscript to LGBT while acknowledging that some gender/sexuality variant persons may not identify with the term "LGBT". Medical concerns related to patients affected by differences of sex development are discussed in Chap. 22.

Talking to LGBT Patients

Personal issues and potentially embarrassing issue regarding sexuality and urinary function) are routinely discussed during urologic consultation. During the urologic visit, it is critical for a patient to feel empowered to share important aspects of his/her history without fear of judgment or alienation from the provider. The intrinsic sensitivity of urologic issues is compounded when they must be discussed in the context of a patient with a non-normative sexual or gender identity. It is thus imperative that the provider strive to create an open and judgment-free environment so that key pieces of the patient's history can be incorporated into the evaluation and plan of treatment.

Because patients who do not disclose their sexual orientation and/or gender identity are at risk of worse health outcomes, health care providers must elicit these issues with sensitivity to ensure optimal patient care [1]. The provider should facilitate an environment where the patient is able to share this information without fear of recrimination [2]. Openness between patient and provider is critical to building of rapport and trust, which is fundamental to the therapeutic relationship [3]. Information on sexuality and gender is of particular relevance to urology as this specialty is concerned with medical issues germane to the genitals and sexual activity.

In establishing rapport with patients it is critical to use inclusive language and to avoid assumptions in eliciting the medical and sexual history. Specific examples include avoidance of gender-specific pronouns when referring to a patient's sexual partner(s) and not presuming that an individual is heterosexual. Conversely, a practitioner should not presume that an individual's professed identity is concordant with their behavior. Up to 7 % of American women 18–59 years of age report a sexual history with another women; over half of these women identify as heterosexual [4]. Similarly, estimates indicate that over 70 % of self-identified lesbians have a history of sexual relationships with men; as many as 6 % of lesbians in one study reported sex with a male partner within the past year [5]. In a similar fashion, there exist a population of men who report heterosexual orientation but engage in sexual activities with other men [6]. Because there is often discrepancy between professed orientation and behavior (historical or current), some researchers favor the descriptive terms "men who have sex with men" (MSM) and "women who have sex with women" (WSW) to terms such as gay or lesbian, respectively.

Urologic Issues

Urinary Function

Normal urine production, storage and transport depend on the functioning and coordination of the kidneys, ureters, bladder, and urethra (Fig. 16.1).

The kidneys continuously filter the blood, producing urine as the excretory byproduct. Urine is transported by peristalsis of the ureters from the kidneys to the urinary bladder, where it is stored until it can be conveniently evacuated [7].

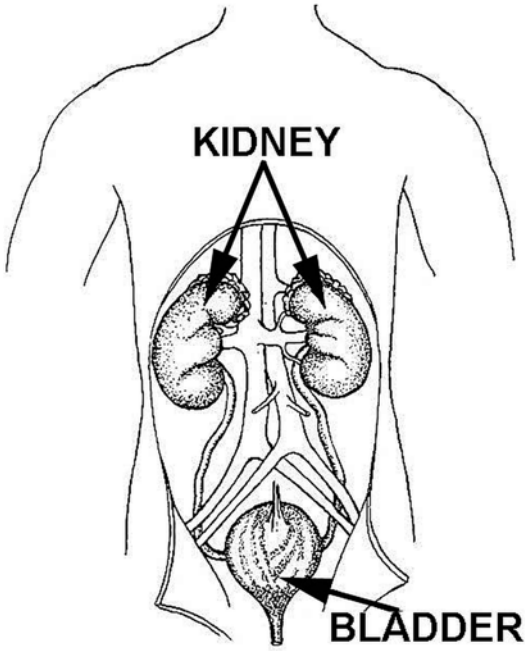

Fig. 16.1 This coronal view of the urinary tract shows the kidneys, which filter blood to create urine. Urine drains out through the ureters to be stored in the bladder, prior to evacuation (Image Courtesy, J. Ehrenfeld)

The bladder is a compliant hollow organ lined with mucosa overlaid on a muscular layer (the detrusor). The healthy bladder is compliant, meaning it can fill at low pressures and accommodate a large volume of fluid. The urethra is the tube which urine passes from the urinary bladder during micturition. In men, the urethra passes through the prostate, which is a gland responsible for the production of seminal fluid [7].

In both men and women urine is held in the bladder by action of the internal and external urethral sphincters. The internal sphincter is located in the vicinity of the bladder neck and consists of involuntary smooth muscle under the control of the autonomic nervous system. The external urinary sphincter is located in the proximal portion of the urethra; this sphincter is contracted to prevent unwanted leakage. The external urethral sphincter is under voluntary control. Normal storage of urine depends on compliance of the bladder, relaxation of the detrusor muscle, and adequate capacity to coapt the urethra. Failure of any of these mechanisms leads to incontinence (involuntary loss of urine). Incontinence is subdivided into urgency incontinence (loss of urine with sudden overpowering urge) and stress incontinence (loss of urine with ValSalva or other increase in intraabdominal pressure) [7].

During urination, the brain receives sensory input that the bladder is full, triggering the cascade of events leading to micturition. The brain sends a signal to the urethral sphincters to relax followed by contraction of the detrusor muscle, which surrounds the bladder. Squeezing of the detrusor muscle forces urine out of the bladder and through the urethra. Normal voiding depends on detrusor contraction, simultaneous relaxation of both urinary sphincters, and a low resistance urethra allowing for unobstructed urine flow. Failure of any of these mechanisms may lead to a variety of lower urinary tract symptoms (LUTS). LUTS are common in both men and women and can lead to significant impairment in quality of life [8, 9]. LUTS are commonly divided into "obstructive" or "irritative" categories [2, 10].

Obstructive

1. Weak urinary stream.
2. Need to strain (Valsalva maneuver) with urination.
3. Incomplete emptying, or a sensation of urine remaining in the bladder at the completion of a void.

Irritative

1. Urinary urgency or the strong and immediate need to urinate without delay or warning.
2. Urinary frequency defined as the need to void multiple times in an excessive and bothersome way without a normal time interval generally <1–2 h.
3. Nocturia or voiding multiple times during the night.
4. Post Void Dribbling

The most common cause of obstructive symptoms is increased urinary outflow resistance along the urethra. For men, this often is the result of an enlarged prostate or a urethral stricture (i.e. a scar of the urethral lumen from past injury or infection). In women obstructive symptoms can be due to kinking of the urethra, which can result from prolapse of the bladder or other

organs through the vagina, displacing the path of the urethra and increasing outflow urinary resistance. In severe cases obstructive LUTS can produce a form of incontinence called "overflow incontinence" in which the bladder does not completely empty and urine dribbles out from the urethra when intravesical pressure becomes high enough to exceed urethral closure pressure [11].

Irritative symptoms often have a more complicated pathophysiology but are generally due to an over-activity of the detrusor muscle; this stimulates a spasm-like sensation that triggers a sensation of needing to void. Detrusor overactivity may be secondary to spinal injury, neurodegenerative conditions, bladder irritation from inflammation or infection, or it may be idiopathic.

Helpful Hint

It is important to recognize that there is often significant overlap between obstructive and irritative symptoms; the etiology of a patient's LUTS may be multifactorial and may require urologic investigation to accurately diagnose [10].

LUTS are a significant impediment to overall quality of life and represent a substantial cost in terms of healthcare expenditures and loss of productivity [12]. Loss of urinary control may also contribute to social isolation and depression [13]. Aside from symptomatic bother, inability to adequately void predisposes patients to urinary tract infection, urolithiasis, and in extreme cases renal failure due to back pressure on the kidneys.

LUTS in Men

The prostate is the organ most commonly associated with LUTS in men, primarily due to benign prostate hypertrophy (BPH, also referred to as Benign Prostate Enlargement BPE). In BPH there is enlargement of the prostate gland, leading to compression of the urethra and narrowing of urethral caliber (Fig. 16.2). This tends to restrict urine outflow. BPH is strongly associated with age although the degree of bother from BPH does not always correlate with the degree of glandular enlargement. While enlargement of the prostate plays an important role, local and systemic inflammation may also contribute to symp-

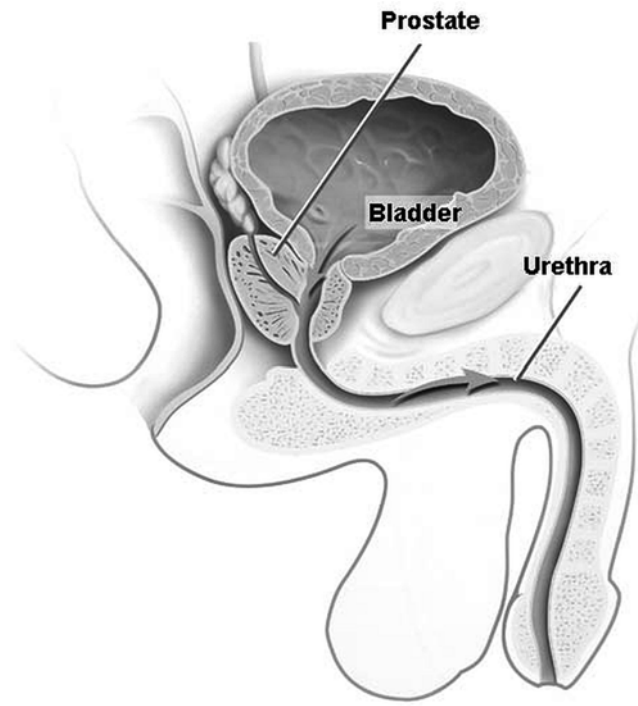

Fig. 16.2 Sagittal Section of the male pelvis. The prostate surrounds the urethra but does not protrude into the urethral lumen. In the setting of BPE or BPH (not shown) the urethra is compressed by the enlarged prostate and urine flow is restricted (Image Courtesy, J. Ehrenfeld)

toms [14] and possibly even to hypertrophy by inducing cells to multiply and grow [15]. This synergistic effect may accelerate prostate growth and progression of LUTS in men.

The most common inflammatory triggers in the prostate include pathogens like viruses and bacteria. Men with a history of urinary tract infections and/or sexually transmitted infections (STI) are more likely to develop LUTS [16]. Progressive growth in the size of the prostate is also a contributing factor to LUTS in men. Diabetes, obesity and the metabolic syndrome have all been linked to an increase risk of LUTS [17].

HIV infection is another important risk factor for LUTS. In a urodynamic study of HIV infected men with LUTS it was determined that the underlying cause of LUTS in 61 % of these men was neurological (e.g. cerebral toxoplasmosis and HIV encephalitis [18]. These data are from an era before the introduction of Highly Active Retroviral Therapy (HART) and hence these neurologic entities are much less common in contemporary HIV infected persons. In contemporary series HIV associated LUTS are thought to be related to pro-inflammatory nature of the disease process, increased risk of UTI, and/or neuropathic injury to the detrusor nerves [19, 20].

Major depression is common in men with LUTS. Depression has been shown to increase inflammatory markers in patients and it is thought that these effects contribute to the pathophysiology of LUTS [21, 22]. A study by Johnson et al. in 2010 found that men suffering from depression had higher urinary symptom scores (worse voiding symptoms) as compared to healthy controls [23]. Breyer et al. also found a significant association between depression and suicidal ideation and lower urinary tract symptoms [24]. In addition to the inflammatory response induced by the depressive state, it is also hypothesized that the pathologic synthesis and regulation of serotonin observed in depressed individuals may place these same individuals at risk for developing idiopathic detrusor overactivity [25]. Since the detrusor muscle contraction is responsible for normal voiding, instability of this muscle could lead to increased urinary symptoms.

Although the physiology of LUTS is similar amongst all men regardless of sexual behavior, specific risks have been identified in MSM. MSM have a higher rate of STI compared to the general population [26, 27]. Breyer et al. reported that MSM with a history of gonorrhea, urinary tract infections, and prostatitis were more likely to report LUTS compared to their MSM peers [28]. In a related study Breyer et al. reported that men with AIDS were more likely to report moderate to severe lower urinary tract symptoms as compared to non-HIV infected men as well as men with HIV but not AIDS (Fig. 16.3) [28].

Similarly, depression is more prevalent in the LGBT community and has been identified as a predictor of LUTS in MSM [28]. For these reasons, MSM should be screened for LUTS and counseled accordingly [29]. A common screening tool for urinary symptoms in men is the International Prostate Symptom Score (IPSS) (also known as the American Urologic Association Symptom Score) [30].

Helpful Hint

While LUTS in men are commonly attributed to prostate pathology, bladder instability may occur in men. Potential etiologies include neurologic lesions, chronic obstruction from BPH, urinary tract infections, and idiopathic causes. These possibilities should be considered when evaluating a male patient with LUTS.

LUTS in Women

Symptoms and etiologies for LUTS and incontinence in women differ markedly from what is observed in men, largely due to anatomic differences between genders. Obstructive LUTS are relatively infrequent in women but irritative symptoms occur at a high rate and women are at a much higher risk of incontinence than men due to markedly lower urethral resistance. Symptoms

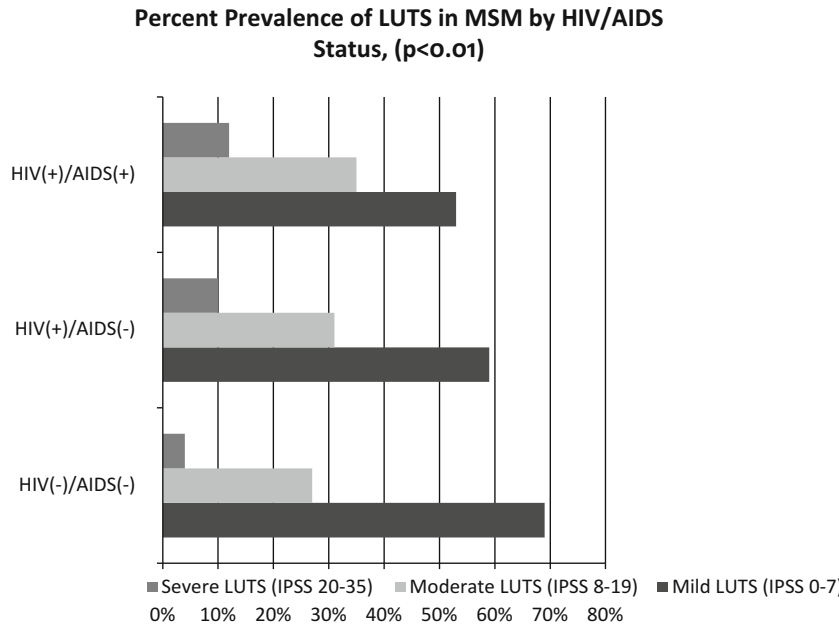

Fig. 16.3 Prevalence of LUTS in MSM by HIV/AIDS Status

are often a result of changes in the pelvic floor musculature, which can occur after childbirth. These changes can cause kinking of the urethra resulting in obstructive symptoms, which can then evolve to include overactive symptoms from incomplete emptying of the bladder.

In addition, following menopause, changes in estrogen levels can result in the vaginal mucosa to become thinner and more friable. For, some women this can be manifested in irritation with voiding and result in increased urinary frequency and even recurrent urinary tract infections.

Lesbian and bisexual women have higher rates of obesity compared to heterosexual women [31], a condition that has been associated with greater risk of LUTS [32]. At the same time, lesbian women are less likely to have a history of pregnancy, which is a risk factor for incontinence. Whether WSW have a significantly different prevalence for LUTS/incontinence compared to their heterosexual peers is unclear; unpublished data from our group indicate that the prevalence of LUTS and incontinence in WSW is generally similar to what is observed in non-WSW females (Shindel, unpublished data). However, the high prevalence of LUTS/incontinence in women in general dictates that WSW be screened and appropriately treated for LUTS/incontinence.

Treatment of LUTS

Treatment options for lower urinary tract symptoms range from behavioral modification to medications to surgical interventions. Picking the appropriate therapy depends on the individual needs of the patient and should be based on the patient's reported symptoms. Treatment should be initiated if symptoms are bothersome or if symptoms are presenting a risk to a patient's health (e.g. worsening renal function, recurrent urinary tract infections, urolithiasis).

Behavioral interventions are often the first line of therapy for LUTS. Men or women with bothersome LUTS can try to void regularly (i.e. every 3 h) or perform double voiding which means voiding to presumed completed, waiting, and then attempt to void again immediately to excrete any

remaining urine from the bladder. Such behaviors can improve bladder emptying and decrease LUTS. Other interventions include decreasing oral fluid intake in the evening and at night to decrease the severity of nocturia. Changing the dosing of diuretics to earlier in the day can also improve nighttime urinary symptoms. Finally, avoiding bladder irritants like caffeine, citrus, alcohol, carbonated beverages, and spicy foods can help to decrease bladder over activity.

Helpful Hint
Behavioral interventions can often improve urinary symptoms without the potential risks of medication or surgery.

For LUTS refractory to behavioral modification, three classes of medications are frequently prescribed. **The first three categories are specifically indicated for natal men and are not FDA approved for use in natal women.**

Alpha-blockers (e.g. terazosin, doxazosin, tamsulosin, sildosin, alfuzosin, etc.) block adrenergic nerve endings which are responsible for contraction of smooth muscle in the vicinity of the internal urethral sphincter and prostate; this has the effect of increasing the luminal diameter of the prostatic urethra during voiding and improving urinary flow. Symptoms can improve immediately but generally take 2–3 weeks for noticeable relief. Side effects including weakness, orthostatic hypotension and anejaculation. The rates of orthostatsis/weakness are markedly lower in modern selective alpha blockers. However, alpha blockers may have a synergistic hypotensive effect when taking with inhibitors of phosphodiesterase type 5 (PDE5I) that are used to promote penile erection (e.g. sildenafil, vardenafil, tadalafil, avanafil); patients should be cautioned about this potential drug interaction and advised to take these classes of medications at least 4 h apart in time. Although orthostatic symptoms are markedly less with modern alpha blockers anejaculation is more common (~14–35 %) [33, 34]. Ejaculatory disturbance may be of great significant to MSM as ejaculation has been shown to be an important sign of sexual gratification in this population [35].

5-alpha reductase inhibitors (5ARI, e.g. finasteride, dutasteride) inhibit the enzyme 5-alpha reductase which converts testosterone to dihydrotestosterone, the primary active androgen in the prostate. This results in decreased growth of the prostate and can even cause the prostate to shrink in size up to about 20 %. 5ARI are most effective in men with very large prostates. 5ARI have also been shown in a randomized controlled trial to significantly reduce the risk of BPH progression (e.g. urinary retention, requirement for surgery, UTI, renal failure) when used as monotherapy or in combination with an alpha blocker. Men on this medication generally will have a halving of serum PSA (prostate specific antigen) so this must be taken into consideration when interpreting the screening test for prostate cancer. This medication does not work immediately and may need to be taken regularly for 6 months before noticeable improvements are seen. Reported side effects include decreased sex drive, smaller amount of ejaculate, erectile dysfunction, and gynecomastia [36].

Tadalafil is a selective inhibitor of the enzyme phosphodiesterase type 5. This drug was initially approved for management of erectile dysfunction (ED) in men but has also established efficacy in the management of LUTS in men with BPH when taken as a daily dose. While the subjective benefit of tadalafil for LUTS is established, treatment with this drug has not been shown to improve objective measures such as urine flow rate and post void residual urine. Side effects of tadalafil include congestion, stuffy nose, headache, and myalgias [37].

Anticholinergics (e.g. oxybutynin, tolterodine, solfenacin, darifenacin, trospium) block cholinergic nerve endings which are responsible for initiation of bladder contraction and can be helpful for patients with overactive bladder

symptoms. By decreasing the intensity of bladder contractions, patients with irritative LUTS may be able to postpone voiding and decrease urinary frequency. The medication works quickly and its effects are generally noticed in the first days to weeks of stable dosage. Side effects include dry mouth, dizziness, constipation and drowsiness. There is some concern that these drugs may precipitate urinary retention in patients with pronounced urethral obstruction. Anti-cholinergics should not be used in persons with narrow angle glaucoma and should be used with caution in elderly persons using other anti-cholinergic or nervous system active drugs due to increased risk of mental status change [38].

For some patients, medications and behavioral changes are not sufficient to treat LUTS. These patients should be referred to a urologist for counseling and discussion of surgical treatment options. Examples of surgical treatments include Transurethral Resection of the Prostate (TURP) in men with BPH, urethral sling surgery for incontinence (primarily in women but useful in some cases for men), and intravesical injection of botulinum toxin in patients of any gender who have refractory bladder overactivity [39].

Sexual Behavior and Health

Clear and important differences exist regarding sexual behavior between heterosexual and LGBT patients. Perhaps most important for clinicians is understanding the important and unique differences in sexual dysfunction among these populations in order to properly screen and treat LGBT persons. Data regarding same-sex sexual behavior has been dominated by the role sexual behavior and dysfunction on the impact of HIV transmission in MSM [40, 41]. Existing studies on sexual function/satisfaction are often qualitative in nature, include small populations, and utilize non-validated metrics or single item questions to elucidate information. This last limitation stems from the fact that the majority of validated instruments for assessment of sexual function use language geared towards heterosexuals and have not been validated in the LGBT population [42, 43].

Taking an appropriate sexual history is fundamental to promoting sexual wellness and the fundamental skills relevant to taking a sexual health history in cis-gendered heterosexual persons apply to sexual health history in LGBT persons. However, normalizing statements (e.g. "Many of my patients…", "Some people have sex with women, some with men, some with both, and others with neither.") and open ended questions (e.g. "What questions do you have about your sexual health?") are of particular importance in comfortable sexual health inquiry for LGBT persons. "Yes/no" questions can still be useful in initiating the conversation (e.g. "Do you have any concerns or questions about sexuality that you would like to address during this visit?") Further questioning as to the type of sexual activity the patient engages can be important for many aspects of the urologic assessment ranging from risks for sexually transmitted infections to counseling for treatment of prostate cancer. Asking the patient if they engage in oral, anal, or vaginal sex and clarifying if the behavior is receptive or insertive can accurately characterize the patient's sexual activity.

Helpful Hint
There is great variability in sexual expression amongst LGBT persons; it if helpful to understand the exact sort of sexual activity the patient engages in.

The Sexual Response Cycle

Williams Masters and Virginia Johnson are credited with the first large scale systematic investigation of sexual response in men and women. From their observations Masters and Johnson developed a four phase sexual response cycle consisting of Arousal, Plateau, Orgasm, and Resolution [44]. The sex therapist Helen Singer Kaplan modified this linear response cycle to incorporate a desire phase which precedes arousal [45].

Alternative models for sexual response in women that are more circular in nature have been proposed by several experts [46]. While these newer models have some merit the linear response models remain very useful for classification of sexual disruptions. An outline of the physiological events associated with difference phases of the sexual response cycle (omitting plateau) and classification of specific disruptions of these phases is presented in Table 16.1.

Helpful Hint
In virtually all cases of sexual problem/dysfunction there are both biological and psychological factors at play.

Sexual Function in Natal Men

Much has been uncovered in recent years regarding the complexities involved in male sexual behavior. From arousal to erection to ejaculation, sexual function requires a complex coordination of incoming and outgoing stimuli all presided over by the brain. Brain imaging studies of men during sexual activity have identified the mesodiencephalic transition zone (an area in the center of the brain) as the area which receives sensory information from the genitals, anus, rectum and prostate during sexual activity that is carried to the brain by the spinal cord during ejaculation [47]. This area contains dopaminergic nerve cells controlled by dopamine—a neurotransmitter linked with rewarding behaviors—and may explain why genital and anal stimulation is so strongly pleasurable and rewarding [48].

Penile erection is the best understood aspect of male sexuality and the issue most amenable to treatment. Erection of the penis occurs via dilation of the cavernous arteries, which supply blood to the corpora cavernosa of the penis. The vascular events that drive penile erection are mediated by a complex interplay of the cavernous nerves which innervate the cavernous arteries. Release of nitric oxide from these nerves activates vascular guanylate cyclase, which in turns produces downstream molecular events that trigger muscular smooth relaxation in the arteries supplying the penis. With vasodilation, penile blood flow increases and the erectile tissue of the penis becomes engorged. As this tissue expands and becomes tumescent the emissary veins which drain the corpora cavernosa are compressed against the tunica albuginea of the corpora cavernosa; this has the effect of restricting blood flow out of the penis and leads to rigid penile erection [49].

Due to variation in sexual practice patterns the anus, prostate, and rectum are relevant to MSM as many (but not all) MSM engage in anal sex. The prostate is clearly a "sexual" erogenous zone and one that can provide sexual pleasure following digital stimulation or through anal receptive

Table 16.1 The sexual response cycle in biologically female and male persons and common nomenclature for sexual issues of each phase

	Biologically male		Biologically female	
	Physiological signs	Disruption classified as:	Physiological signs	Disruption classified as:
Desire	Pupillary dilation, tachycardia, tachypnea	Hypoactive sexual desire disorder	Pupillary dilation, tachycardia, tachypnea	Hypoactive sexual desire disorder
Arousal	Penile erection, scrotal contraction, nipple erection	Erectile dysfunction	Vulvar and clitoral swelling, vaginal lubrication and lengthening, nipple erection	Sexual arousal disorder (genital or subjective)
Orgasm	Ejaculation, muscular contractions, satisfaction, pleasure	Premature ejaculation, delayed ejaculation, anorgasmia	Muscular contractions in vagina, uterus, anus, satisfaction/pleasure	Female orgasmic disorder
Resolution	Detumescence of the penis, return to resting state	Priapism	Cessation of vaginal lubrication and lengthening, return to resting state	Persistent genital arousal disorder

intercourse though researchers know little on the innervation pathways involved. It is important that patients be educated about the critical role that the prostate plays in sexual activity especially if the patient engages in anal receptive intercourse.

The neurologic and vascular systems are essential components of erectile response; hence, vascular diseases (e.g. diabetes, hypertension, hypercholesterolemia, tobacco use, obesity, lack of exercise) and nervous system lesions (e.g. spinal cord transaction, cavernous nerve injury during pelvic surgery) are major risk factors for ED. Other common causes of trouble with erections include medication side effects (particularly beta blockers, thiazide diuretics, and antidepressants), testosterone deficiency, and psychosocial issues within the patient or between patient and partner(s) [49].

Sexual Dysfunction in MSM

Erectile Dysfunction

Existing data suggest that rates of erectile dysfunction (ED) are higher in gay/bisexual men compared to their heterosexual peers. Bancroft et al. reported on a sample of 2937 men and found that only 42 % of gay identified men "never" experienced ED as compared to 54 % of heterosexual men [50]. An internet study investigated sexual wellness in osteopathic and allopathic medical schools in North America and compared rates of self reported sexual dysfunction. It was determined that ED was more prevalent amongst gay or bisexual identified men as compared to heterosexual men [51]. This finding of increased ED among MSM was also echoed in a study by Vansintejan et al. out of Belgian. The authors found that almost half of MSM sampled reported some difficulty with getting an erection. Factors associated with ED included increased age, single relationship status, versatile or passive sex role, and decreased libido [52]. Because gay men have a higher prevalence for tobacco and drug use compared to heterosexual men, their risk of ED is likely to be greater [53].

One major difficulty in studying erectile dysfunction in MSM is the fact that the standardized questionnaires commonly used in contemporary ED research are validated for use in heterosexual encounters only. Coyne et al. did validate a version of the International Index of Erectile Function (IIEF) in a population of HIV infected men who have sex with men. This instrument was used by Shindel et al. in an internet survey of sexual function in MSM. It was determined that ED was associated with increasing age (Fig. 16.4), AIDS, and LUTS [54]. LUTS and younger age were associated with greater risk of PE [54].

Premature Ejaculation and Other Sexual Concerns

A number of other sexual problems may occur in men, including premature ejaculation (PE, defined most recently by the International Society for Sexual Medicine as ejaculation occurring in 1 min or less of penetration and associated with loss of sense of control and distress) [55]. It is noted that the definition applicable only to coital intercourse. The intent of these authors was not be to exclusionary; however, it was concluded that there was currently insufficient objective evidence to incorporate non-coital intercourse into the definition of PE. Until data on clinically relevant PE in MSM is available it is advised that clinicians and researchers use the same ISSM criteria for the diagnosis of PE in MSM [55].

Most contemporary reports suggest that the prevalence of early ejaculation is similar to slightly less in MSM compared to their heterosexual peers [50, 51, 56, 57]. Early ejaculation associated with bother is reported by between 15 and 34 % of MSM [54, 58, 59]. Controversy persists on the true burden of clinically relevant early ejaculation in general, let along in MSM. Most studies suggesting a ~30 % prevalence are based on single item reporting of subjective experiences rather than the most stringent criteria and hence it is likely that the true prevalence of clinical PE is less than 5 % [55, 60].

MSM with severe voiding symptoms, HIV infection, and who experience social recrimination

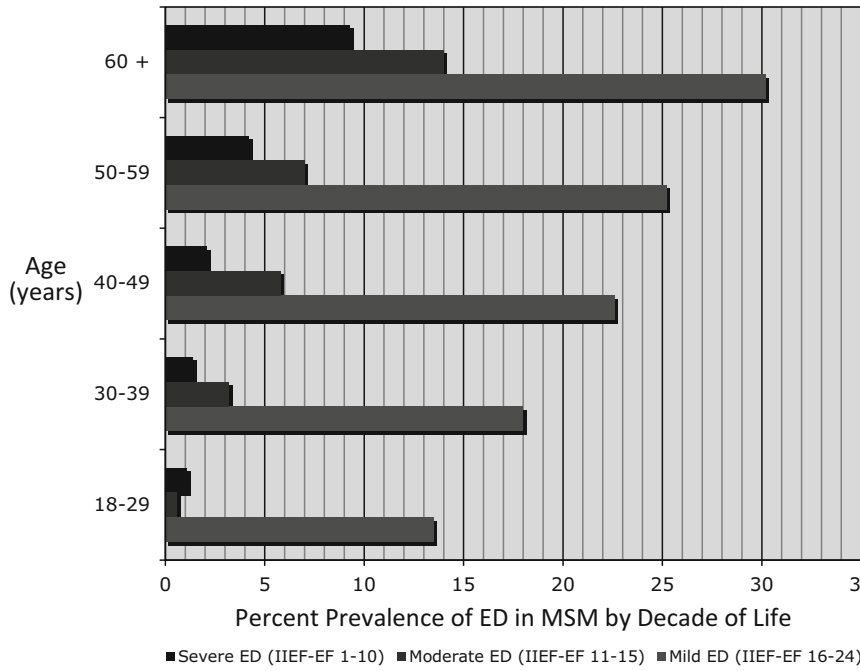

Fig. 16.4 Prevalence of ED in MSM by decade of life

appear to have lower risk of early ejaculation compared to their MSM peers [59, 61, 62].

Aside from ED and PE, men may experience bothersome declines in sexual desire (aka hypoactive sexual desires disorder or low libido), difficulty attaining orgasm (anorgasmia), disruption of ejaculation (retrograde ejaculation or anejaculation), and Peyronie's Disease (an acquire deformity of the penis). These issues are less well understood but can pose a significant impediment to sexual satisfaction. A careful history can help elucidate the exact nature of sexual complaints in men; it should be borne in mind that many sexual concerns may be comorbid.

Sexual Dysfunction, HIV, and AIDS

AIDS has been identified as significant risk factor for developing ED and/or premature ejaculation amongst MSM. Hypotheses for the etiology of this connection range from prolonged use of HART, exposure to opportunistic infections and, low CD4 counts although these associations have been inconsistently demonstrated to increase the prevalence of HIV [63–65]. Research by Hart attempted to identify differential risk factors for ED comparing HIV negative and positive MSM. The authors found an increased risk of ED among HIV(+) men (21 %) as compared to HIV (−) (16 %) despite the HIV (+) cohort having a younger median age. Risk factors for ED in HIV (−) men were older age (age 55+ versus age ≤40; 112 % increase), Black race (88 % increase), and cumulative years of cigarette smoking in pack-years (9 % increase). In HIV (+) men, risk factors were years of antihypertensive use and cumulative years of antidepressant use. Interestingly, HAART adherence years and CD4+ cell count were not found to significantly predict likelihood of ED [53]. The authors suggested that it the HIV—related medical comorbidities which may explain the increased prevalence of ED as opposed to a direct effect of the virus. Additional potential factors Testosterone deficiency is common in HIV positive persons and this may predispose to declines in libido and erectile capacity [66, 67]. Finally, the substantial psychosocial stressors of HIV infection (stigma, concern about infecting others, etc) may contribute to sexual issues in HIV positive persons [68].

In a study by Shindel, greater prevalence of erectile dysfunction was identified in men with progressive HIV infection 40–59 years of age as compared to HIV-negative men of similar age. When the authors controlled for other variables including age, number of sexual partners, and condom use they found that HIV alone was not a risk for ED but HIV with AIDS was associated with greater odds of ED [69].

Neither HIV nor AIDS was associated with an increased prevalence of early ejaculation in this study. Interestingly, use of phosphodiesterase 5 (PDE5) inhibitor drugs was found to be more common among HIV-infected men. In addition, HIV (+) men were more likely to have sought medical attention for sexual dysfunction as compared to HIV (−) MSM [69].

Management of Sexual Concerns in Gay Men

Medical therapies for ED include oral phosphodiereterase type 5 inhibitors (PDE5I), vacuum erection devices (VED), intracavernosal injection therapy (ICI), intraurethral prostaglandin suppositories, and surgical implantation of inflatable or malleable penile prostheses [69].

PDE5I drugs are the first line agents of choice in medical management of ED. In the United States four PDE5I are currently available; sildenafil (Viagra®), vardenafil (Levitra® or Staxyn®), tadalafil (Cialis®), and avanafil (Stendra®). Other PDE5I are approved for use in other regions of the world. These drugs are highly effective but must be taken at least 1–2 h before planned intercourse. Potential side effects include congestion, headache, flushing, visual disturbance, and myalgia. Side effects are typically mild and self-limited. PDE5I should not be used in patients taking nitrate based therapy for angina and should not be taken within 4 h of alpha blocker medications [70].

Second and third line therapies for ED are often effective in cases where oral pharmacotherapy fails [70]. A complete discussion of these modalities is beyond the scope of this chapter but interested readers are referred to recent publications on management of ED in men [70] and to national and international organizations dedicated to sexual wellness in men such as the Sexual Medicine Society of North America (www.smsna.org) and the International Society for Sexual Medicine (www.ISSM.info)

ED in HIV Positive Men

The issue of ED in HIV positive men is one of marked public health consequence as ED has been associated with failure to utilize safer sex practices (i.e. condoms) [68]. The treatment of ED in HIV positive persons has been controversial in the past due to concerns that this might promote sexual transmission of the virus [71]. A pilot study by Goltz attempted to identify any possible increased risk for contracting STIs amongst MSM receiving therapy for erectile dysfunction. The authors found that 1/3 of the sample had engaged in unprotected anal sex at the last erectile dysfunction medication use. Risks for engaging in unprotected sex were younger age and receiving the medication from the sexual partner [72].

While counseling on safer sex practices should accompany provision of erectogenic therapy in all contexts, there are no data suggesting that treatment of ED in and of itself increases risk of HIV infection. Treatment of ED may help some men with marginal erectile capacity retain erections despite condom use, thus facilitating safer sex [73]. Respect for persons and social justice are fundamental tenets of medical practice and indicate that HIV positive men with ED receive appropriate counseling and treatment for sexual issues, including ED [74].

Management of Other Sexual Problems in Men

Hypoactive sexual desire disorder, orgasmic dysfunction, and Peyronie's Disease (a condition of acquired deformity of the penis) are present in gay men but are poorly characterized. Management of these concerns in gay men should follow

established treatment protocols, including attention to general health, relationship status, and medications that may contribute to sexual issues (e.g. beta blockers, thiazide diuretics, antidepressants, anti-androgens, etc). It should be borne in mind that there is only one FDA approved medical therapy for Peyronie's Disease (injectable collagenase) and no approved pharmacotherapy for any other sexual concern in men.

Sexual Function in Natal Women

Scientific understanding of female sexual response lags far behind where we stand with respect to understanding of male sexual response. In general the same molecular and vascular events occur during female sexual arousal although the end result is markedly different from what is observed in men [75]. The clitoris becomes erect in a fashion similar to the penis but does not become as rigid due to size and the relative thinness of the clitoral tunica. Vasodilation also plays an important role in promoting vaginal engorgement, lengthening, and lubrication [75]. There are no glandular elements within the vagina that produce lubrication. However, with increased vascular engorgement of the vaginal submucosa oncotic pressure leads to production of a transudative fluid that is passed through aquaporins on the vaginal mucosa into the vaginal lumen [76, 77].

Vascular and neurologic health factors in women have not been clearly and universally linked to sexual distress/dissatisfaction as they have been in men although women with severe injuries (e.g. spinal cord injury) do have marked impairments of sexual function [78].

Sexual Dysfunction in WSW

Public health concerns about HIV spawned interest from the research community on sexual wellness in gay men; sexual wellness in lesbian and bisexual WSW remains very poorly studied in the mainstream biomedical literature. There is a dearth of validated tools for the quantitative assessment of sexual function in lesbian women. Tracy and Junginger developed a version of the Female Sexual Function Index (FSFI) for use in lesbian women. The FSFI explores six domains relevant to female sexuality; Desire, Arousal, Lubrication, Orgasm, Satisfaction, and Pain. Women with lower scores on this index were identified to have "higher risk for sexual dysfunction." In the initial validation study, older age was associated with decreased sexual desire and overall sexual function. Stress was associated with worse sexual function whereas satisfying relationship with a partner were associated with better sexual function [79].

Shindel et al. utilized a version of this FSFI in an internet study of sexual function in 1566 WSW. Risk of distress sexual problems was calculated using previously established cut-off scores for the FSFI which were shown to approximate endorsement of sexual dissatisfaction in this cohort. After multivariable adjustment nulligravid women, women with OAB, and women with no partners or non-female partners were found to be at greatest risk of distress sexual issues [61].

There is a common perception among both providers and patients that STI risk is low in same-sex encounters between women. This may predispose WSW to entirely preventable STI. A study on barrier use in WSW was derived from this same data set and indicated that many WSW do not use barriers during sexual encounters, even outside the context of a monogamous relationship [80]. These data speak to the need for education on safer sex practices for WSW [5, 81, 82].

Shindel et al. found that while almost a quarter of the WSW sample reported symptoms of sexual dysfunction, only 11 % had actually sought help from a physician for these problems [61]. This highlights the importance of sexual health screening by physicians to help identify at risk patients and provide intervention to help improve sexual health in general but particularly in WSW.

Biomedical treatment options for sexual dysfunction in women in general are very limited; a selective estrogen receptor modulator has been approved for management of dyspareunia from vaginal penetration [83]. Other pharmaceuticals are used off label by some experts. A discussion of these medical treatment modalities is beyond

the scope of this chapter but interested readers are referred to recent publication on this topic and the International Society for the Study of Women's Sexual Health (www.ISSWSH.org) for more information. Attention to psychosocial factors and relationship context remains an important consideration for sexual concerns in women.

Genitourinary Malignancy

Prostate Cancer in MSM

Prostate cancer is the number one noncutaneous cancer in men with a lifetime risk of the malignancy of almost 17 % [84]. No study has ever demonstrated an increased risk or incidence of prostate cancer in MSM. However, MSM are known to be less aware of the pathophysiology of prostate cancer and the impacts of its treatment as compared to their heterosexual counterparts [85]. Many factors contribute to this knowledge gap between MSM and heterosexual patients regarding prostate cancer and the effects of its treatment. The aforementioned concerns about disclosure of gay identity to a provider may dissuade some MSM from mentioning their particular concerns about sexual function to their provider [86]. Furthermore, the vast majority of survey tools for assessment of treatment response after prostate cancer have a heterosexist focus (e.g. questionnaires that ask if erection is sufficient for vaginal penetration) [87].

Helpful Hint
All men (including gay and bisexual men) are at risk for prostate cancer. Screening for prostate cancer is controversial but should be discussed with all men regardless of sexual orientation.

Given recent trends towards early treatment of prostate cancer the majority of the negative effects of the disease arise from treatment and not the malignancy itself. Treatments for prostate cancer include prostatectomy, external beam radiation therapy, brachytherapy and hormone deprivation therapy. Although these interventions can result in excellent disease free survival benefit, they also can result in significant comorbidities. The most common side effects resulting from prostate cancer treatment include ED, loss of ejaculation, painful anal receptive intercourse, urinary incontinence, and penile shortening. These side effects can have important consequences on quality of life for all men.

Although MSM and heterosexual men have similar concerns regarding prostate cancer and desire for cure, there are several unique differences regarding sexual behavior, which can impact the experience of the potential side effects. Although anal intercourse is not an exclusively gay male practice nor is it practiced by all MSM, it is more frequent in MSM. Anal penetration requires a more rigid erection than vaginal penetration due to anal muscle tone. Hence, even a small decrease in the firmness of the erection may have a greater impact on sexual performance for MSM who penetrate their partner anally (tops) as compared to heterosexual men engaging in vaginal intercourse. Anal receptive partners (bottoms) may experience pleasure from stimulation of the prostate gland. Loss of the prostate to surgery, rectal wall fibrosis from radiation, or anatomical changes in the pelvis which predispose men to anodyspareunia may exert a disproportionate influence on sexual enjoyment for MSM who bottom.

Despite an obvious impact of prostate cancer treatment on anal intercourse the paucity of research on this behavior makes counseling extremely difficult. Clinicians should ask patients (particularly MSM) preoperatively about the importance of insertive and receptive anal intercourse to their sexual expression. Pending the results of this revelation, clinicians can at least introduce the possibility of side effects following treatment and may even use this clinically relevant data to inform the type of intervention recommended.

The importance of ejaculation has also been demonstrated to be higher amongst MSM as compared to heterosexual men. It has been hypothesized that ejaculation is an important sign

of sexual gratification among MSM. Furthermore, Wassersug hypothesized that the impact of the HIV epidemic changed the act of ejaculation making a visible ejaculation important from a disease transmission standpoint [35]. Given that ejaculation is dependent on an intact prostate, it is very important to counsel patients on the likelihood of ejaculation loss after surgery or radiation for prostate cancer.

Research also suggests that penis size plays a more important role in the psychosexual health of MSM, in that men with larger penises report improved health. A study by Grov et al. found that men with "below average" penis size fared significantly worse on a multifaceted score of psychosocial adjustment [88]. Given the incidence of penile shortening has been shown to be as high as 68–71 % of men following radical prostatectomy with a mean decrease of 1.1–4.0 cm [89, 90], it is important that MSM be informed of this potential side effect.

Qualitative research performed by Hartman et al. of same sex couples impacted by sexual dysfunction following radical prostatectomy highlight important differences between heterosexual and same sex relationships [91]. For example, navigating changing sexual roles following surgery is a unique challenge faced by same sex couples. For some couples, sexual roles may include one partner preferring anal receptive intercourse and the other anal insertive. Following surgery, these roles can evolve and impact the pre-surgical dynamic. Furthermore, the study identified the use of open relationship as a coping strategy for maintaining sexual satisfaction that has not been identified previously among heterosexual couples [91]. Such studies, illustrate the importance of tailored pre and postoperative counseling for same sex couples focusing on their unique dynamics and needs.

Transgender Patients and Prostate Cancer

In male to female gender affirming surgery (GAS), the prostate is normally left in place given its intimate relationship with the urethra and the neurovascular bundles involved in sexual arousal and orgasm. Prostatectomy also carries substantial potential for urinary and sexual morbidity so there is little motivation to remove it in GAS. Despite this fact, the rates of prostate cancer in male to female transgender patients are extremely low. The exact numbers are unknown but there have been a few case reports of transgender patients on hormone therapy presenting with prostate cancer [92, 93]. By definition, these patients have castrate resistant prostate cancer and are treated as such. It is thought that the lower rate of prostate cancer among transgender patients is the deprivation of testosterone. For this reason, transgender patients who are not on hormonal supplementation or on incomplete blockade carry a risk of developing prostate cancer and should be screened similarly to men. Although controversial, this screening should include shared decision making with a discussion of risks of screening based on family history. Following this conversation, prostate cancer screening can include a PSA serum level and digital rectal exam. The most important concept is that transgender patients still have a prostate and therefore carry a risk for prostate cancer which varies based on the duration of hormone therapy.

Bladder Cancer in LGBT Patients

The number one risk factor for developing urothelial cell carcinoma of the bladder is cigarette smoking [94–97]. Given the increased incidence of smoking among LGBT persons as compared to heterosexuals [98], there is a resultant increase in risk for developing bladder cancer. For this reason, screening LGBT patients for smoking is critical, so smoking cessation counseling can be appropriately initiated.

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