Association Between Infertility and Sexual Dysfunction in Men and Women

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ABSTRACT

Introduction: The relation between infertility and sexual dysfunction can be reciprocal. Causes of sexual dysfunction that affect fertility include erectile dysfunction, Peyronie's disease (abnormal penile curvature), low libido, ejaculatory disorders in men, and genito-pelvic pain/penetration disorder (GPPPD) and low sexual desire in women.

Aim: To review the association between infertility and sexual dysfunction and discuss current management strategies to address sexual disorders in couples with infertility.

Methods: Peer-reviewed publications from PubMed published from 1980 through February 2016 were identified that related to sexual dysfunction and infertility in men and women.

Main Outcome Measures: Pathophysiology and management approach of erectile dysfunction, Peyronie's disease, low libido, ejaculatory disorders in men, and GPPPD and low sexual desire in women and how each etiology contributes to sexual dysfunction and infertility in the couple.

Results: Treating the infertile couple with sexual dysfunction involves addressing underlying conditions such as psychogenic erectile dysfunction, low testosterone, Peyronie's disease in men, and GPPPD and low sexual desire in women. Psychogenic erectile dysfunction can be successfully treated with phosphodiesterase inhibitors. Low testosterone is often identified in men with infertility, but testosterone therapy is contraindicated in men attempting conception. Men with Peyronie's disease have a new treatment option to address their penile curvature—collagenase *Clostridium histolyticum* injection directly into the penile plaque. GPPPD is a broad disorder that includes vulvodynia and vaginismus and can be treated with topical lubricants and moisturizers. We must address psychosocial factors in women with low sexual desire. Flibanserin and transdermal testosterone (off-label) are novel therapies for women with low sexual desire.

Conclusion: Sexual dysfunction in a couple with infertility is a complex issue. Management of infertility and sexual dysfunction should involve appropriate medical therapy and addressing the psychosocial concerns of the couple.

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Key Words: Erectile Dysfunction; Peyronie's Disease; Hypogonadism; Vulvodynia; Vaginismus; Hypoactive Sexual Desire Disorder

INTRODUCTION

Infertility is defined as the failure to conceive after 12 months of unprotected intercourse in women younger than 35 years or after 6 months of unprotected intercourse in women older than 35.[1] Infertility affects up to 15% of couples[2] and is a significant life stressor comparable to chronic illness or the loss of a loved one.[3] In addition to personal stress, infertility puts immense stress on a relationship, because the individuals in the relationship begin to place blame on themselves and on each other. With the degree of stress associated with infertility, it is no surprise that infertility is frequently associated with sexual dysfunction.

Sexual dysfunction is grouped into four general categories: sexual desire, arousal, orgasmic, and pain disorders. Sexual desire

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disorders are further divided into hypoactive sexual desire disorder and sexual aversion disorder. Sexual arousal disorders are grouped based on whether they occur in men or women. In men, sexual arousal disorder commonly manifests as erectile dysfunction (ED), whereas in women, it manifests as inadequate lubrication in response to sexual stimulation. Sexual pain disorders are split into dyspareunia (men or women) or vaginismus (women only) in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* (*DSM-IV-TR*). In the updated *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (*DSM 5*), the definition of sexual dysfunction was altered to reflect more recent studies in sexual behavior. Highlights from the changes include having a diagnostic classification that differs between men and women, merging desire and arousal into a single diagnosis called *female sexual arousal disorder,* and grouping dyspareunia and vaginismus under one diagnosis of genito-pelvic pain/penetration disorder (GPPPD), among numerous other taxonomic changes.[4] Sexual function in a couple should be considered as part of a dyadic unit. If one individual in the couple has sexual dysfunction, the other individual can harbor feelings of guilt or lower self-esteem. For example, women whose partners have ED report decreased sexual satisfaction.[5] Hence, similar to infertility, sexual dysfunction in one individual in a relationship affects the couple as a whole.

Although infertility and sexual dysfunction in a couple can occur in isolation, the two disorders are frequently linked. Childbearing is an integral component of many partnerships and the inability to conceive often leads to sexual difficulty. An infertile couple might associate sexual intercourse with anger, guilt, and depression, and sex becomes a means of trying (and failing) to reproduce, as opposed to a connection between the two partners.[6] This begets further sexual dysfunction, which decreases the chances of successful conception. The concept works reciprocally; men and women with sexual dysfunction simply might be unable or less able to participate in sexual activity, which negatively affects the fertility of the couple.

Thus, a cyclical relation between sexual dysfunction and infertility exists. However, select causes of sexual dysfunction directly affect fertility and include ED, Peyronie's disease (PD), low sexual desire, and anejaculation in men and GPPPD and low sexual desire in women. In this review, we discuss different types of sexual dysfunction and their impact on and associations with infertility. We examine the most common causes of sexual dysfunction and infertility and explore current management strategies.

EPIDEMIOLOGY

Infertility often is a disorder of young people, because the elderly (particularly women) generally do not try to conceive. However, in reproductive-age men and women, infertility increases in incidence with age. In the National Survey of Family Growth, 6.0% of women in the cohort reported infertility, with a much higher prevalence in older women of reproductive age, with 27% of women 35 to 44 years old reporting infertility.[7] In another study focused only on women 15 to 44 years old, infertility was observed in 15.5%, with older women, those with lower education, and those with a history of gynecologic disorders being the most affected.[8] However, these studies do not comment on common causes of infertility. Although up to 50% of cases of infertility involve the male and female partners,[9-11] in a study of 8,500 infertile couples, female factor infertility was identified in 37% of couples. The most common identifiable female factors were ovulatory disorders (25%), endometriosis (15%), pelvic adhesions (12%), tubal blockage (11%), other tubal abnormalities (11%), and hyperprolactinemia (7%). Unknown factors contributed to 19% of infertility attributable to the female partner.[12]

Although men can maintain fertility into older age, evidence supports aging of the male reproductive system and age-related decrements in male fertility. Based on the National Survey of Family Growth study, 9.4% of men 15 to 44 years old and 12% of men 25 to 44 years old reported infertility of some cause.[7] The causes of male infertility can be categorized using four main categories: disorders of sperm transport such as retrograde ejaculation or anejaculation, endocrine disorders, genetic disorders, and idiopathic causes. Disorders of sperm transport account for 10% to 20% of cases of male infertility.[13] Endocrine disorders include primary (1%−2%) and secondary (10%−20%) hypogonadism. Known genetic disorders account for up to 30% of cases of male infertility, and the most commonly implicated abnormalities are Y chromosome microdeletions, monogenic disorders, and cytogenetic disorders.[14] Idiopathic causes account for up to 40% of cases of male infertility.[15] However, because spermatogenesis is a complex process involving the integration of a multitude of genes, genetic aberrations might be implicated in a significant proportion of cases of idiopathic male infertility.[16]

Infertility is a common complaint, but sexual dysfunction is even more prevalent in the general population. Based on the National Health and Social Life Survey (NHSLS), 43% of women reported sexual dysfunction.[17] A study by the Global Study of Sexual Attitudes and Behaviors (GSSAB) specifically explored the prevalence of sexual dysfunction in women. The results from this survey further corroborated the NHSLS data, with the most common complaints being low sexual desire (26%−43%) and anorgasmia (18%−41%).[18] However, neither the NHSLS nor the GSSAB included personal distress as a component of their criteria for sexual dysfunction. However, the Prevalence of Female Sexual Problems Associated with Distress and Determinants of Treatment Seeking study later included personal distress in the definition of sexual dysfunction, finding the overall prevalence of sexual dysfunction to be consistent with the NHSLS and GSSAB results. However, when incorporating sexual distress into the definition, sexual dysfunction was found in only 12% of women.[19] Regardless of the definition used, multiple publications have consistently shown the widespread prevalence of female sexual dysfunction.