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REVIEW

Male infertility and erectile dysfunction in patients with vasculitis

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ABSTRACT

Erectile dysfunction and male infertility are increasingly recognized complications in patients with vasculitis, arising from both disease-related mechanisms and treatment effects. Chronic inflammation, vascular involvement, and hormonal dysregulation may impair erectile function and reproductive capacity. Furthermore, commonly used medications such as steroids and immunosuppressants can negatively impact semen quality and may exert teratogenic effects. Studies have also demonstrated high rates of hypogonadism and sexual dysfunction in specific vasculitis subtypes, including granulomatosis with polyangiitis and Behçet's disease. Given the limited evidence base, multidisciplinary evaluation and proactive counseling regarding sexual health, fertility intentions, and treatment risks are essential.

Keywords: erectile dysfunction, male infertility, vasculitis.

INTRODUCTION

Male infertility and erectile dysfunction in patients with vasculitis

Erectile dysfunction (ED) is defined as the inability to achieve and/or maintain an erection sufficient for satisfactory sexual performance. The prevalence of ED increases with age; approximately 40% of men in their fifth decade are affected, while the prevalence at the age of 80 is between 30–40%. According to the Massachusetts Male Aging Study conducted in the USA, UK, and Australia among men aged 40–70 years, the prevalence of minimal ED is 17.2%, moderate ED 25.2%, and severe ED 9.6% [1].

It should be emphasized that the attainment of an erection depends on a complex interplay of multiple factors. These include vascular (arterial and cavernosal), neurological (sensory, motor, or autonomic), hormonal (testicular, pituitary, thyroid), systemic, pharmacological, and psychological components.

In clinical practice, a detailed medical and sexual history should be obtained from each patient, including previous and current sexual status, emotional state, duration of symptoms, and any previous treatments. The International Index of Erectile Function (IIEF) and its shortened version, the Sexual Health Inventory for Men (SHIM)—a five-item questionnaire—should be administered to all patients presenting with ED [2,3]. These standardized tools are valuable for both diagnosis and follow-up during treatment.

The first-line treatment for ED typically involves phosphodiesterase type 5 (PDE5) inhibitors, which are widely available and easy to use. Sildenafil, tadalafil, vardenafil, and avanafil have been used for many years and have success rates of up to 70%. Chronic sildenafil use has been shown to improve erectile function and enhance endothelium-dependent cavernosal relaxation [4].

Infertility is defined as the inability of a sexually active couple to achieve pregnancy after one year of regular, unprotected intercourse [5]. It affects approximately 15% of couples, with male factors accounting for nearly 50% of cases, often due to abnormal sperm parameters. Male infertility may result from endocrinological or systemic disorders, spermatogenic or transport defects, or idiopathic/unexplained causes. Abnormal sperm parameters are frequently observed in infertile men and may also be influenced by pharmacological treatments used for other diseases.

Steroids, immunosuppressants, and immunomodulatory drugs frequently used in patients with vasculitis may impair semen parameters and, in some cases, exert teratogenic effects. Clinicians should inform patients and their partners of these risks. Although the level of evidence regarding drug effects is generally low, the potential impact can be significant. For example, Clowse et al. reported increased rates of pregnancy loss and miscarriage among partners of male patients with vasculitis [6]. In clinical practice, cryopreservation and contraception should be discussed with patients receiving treatments known to impact fertility, such as sirolimus, ipilimumab, or dabrafenib. [7].

Beyond treatment, vasculitis itself can contribute to urological complications. For instance, Richter et al. reported hypogonadism in 50% of patients with Granulomatosis with Polyangiitis (GPA), independent of treatment response [8]. Androgen deficiency has also been associated with fatigue and reduced health-related quality of life in patients with ANCA-associated vasculitis [9]. Several studies have demonstrated a relationship between Behçet's syndrome and ED, with lower IIEF scores in affected patients compared to controls, independent of disease activity [10–12]. A systematic review by Talarico et al. concluded that multidisciplinary care is essential to address the significant impact on sexual health in Behçet's syndrome [13].

Although several studies have addressed the effects of vasculitis and its treatments on sexual function, the current literature remains limited. Further research is required to better understand the relationship between vasculitis and ED and to develop interventions that improve sexual function in this patient group. Until more evidence is available, a multidisciplinary approach to sexual health should be integrated into routine clinical practice. This should include assessment of pre- and post-disease sexual status, evaluation of drug side effects, hormonal influences, and fertility intentions. Such an approach can help preserve sexual function and improve overall quality of life.

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