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Role of Withania somnifera (Ashwagandha) in the management of male infertility.

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Abstract

To manage male infertility caused by hormonal imbalance, infections and other predicaments, multifarious treatment strategies are emerging worldwide. Contemporary treatments, such as assisted reproductive techniques, are costly with low success rates of only 10-30%; however, herbal remedies are gaining more attention as an alternative or supplementary therapeutic modality for male infertility. The beneficial effects induced by oral intake of the roots of a small evergreen shrub, Withania sominifera (Ashwagandha) on semen quality of infertile men have previously been studied. Oral intake of Ashwagandha roots has been found to inhibit lipid peroxidation, improve sperm count and motility, and regulate reproductive hormone levels. The molecular mechanisms of these effects, however, are yet to be unveiled. In this review, we will discuss the role of herbal medicines in male infertility; provide a detailed analysis of various human and animal studies involving Withania somnifera; describe a proposed direct oxidative mechanism involving mitigation of oxidative stress as well as an indirect mechanism consisting of a gamma-aminobutyric acid-like-mimetic pathway ameliorating hormonal balance through crosstalk among different endocrine glands to improve male fertility; and how Withania somnifera supplementation mitigates risk factor-induced male infertility as well as ameliorates male fertility.

KEYWORDS: Ashwagandha; Male infertility; Semen quality; Withania somnifera

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