Medical and Surgical Management of Male Infertility

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Abstract

The current challenges in the era of Assisted Reproductive Techniques (ART) are to properly accommodate established and new treatment modalities that are both cost-effective and evidence-based. This lecture reviews the evolving concepts in the medical and surgical treatment of male infertility. It is aimed to gynecologists, urologists and reproductive specialists involved in the care of men and women experiencing difficulty in having a child.

Among medical therapy, the use of oral antioxidants has become common. There is now fair evidence indicating that oral antioxidants can improve the outcomes of pregnancy and live birth in subfertile couples undergoing assisted reproduction. In contrast, empirical medical treatment for idiopathic oligozoospermia is usually not effective, and therefore not recommended. Hormonal therapy with hCG, on the other hand, is an established specific medical therapy for the treatment of adult-onset hypogonadotropic hypogonadism (HH). Such patients often show remarkable recovery of spermatogenic function and androgen production when treated with exogenously administered gonadotropins. While the classic treatment of adult-onset HH involves the intramuscular administration of urinary hCG, recombinant hCG is an effective and patient-friendly alternative due to its ready-to-use presentation that allows subcutaneous self-administration.

The effects of obesity on the male fertility status has gained importance in recent years owed to the reported increased risk of infertility in obese/overweight men. An increased aromatase activity and secretion of adipose-derived hormones may result in hormone imbalance and secondary hypogonadism and infertility. The determination of testosterone to estradiol (T/E2) ratio is useful to identify patients who have aromatase hyperactivity, characterized by an T/E ratio below 10. Such patients could be treated with aromatase inhibitors to revert hypogonadism and improve sperm production.

In the surgical field, refinements in microsurgery has optimized the success of several procedures, including varicocele repair, vasal reconstruction and sperm retrieval. Lower postoperative complications and recurrence rates are seen with the microsurgical repair of clinical varicoceles compared with other surgical methods. Microsurgical varicocele
surgery is not only intended to increase the chances of spontaneous conception but also the likelihood of pregnancy in ART. Microsurgery may also improves the likelihood of retrieving testicular sperm in men with non-obstructive azoospermia due to testicular failure. Microdissection testicular sperm extraction (micro-TESE) allows the identification of sperm production sites within dysfunctional testes and minimal testicular parenchyma excision. Despite being based on the type of azoospermia and the attending surgeon’s preferences, the sperm retrieval (SR) method of choice should allow the collection of an adequate number of good quality sperm, which can be immediately used for ICSI or cryopreserved for future ICSI attempts. Yet, the SR method should minimize damage to the reproductive tract, thus preserving the chance of repeated retrievals attempts.

While treating the male partner by medical and surgical therapy, our goals are to not only improving the couple’s chance of obtaining an unassisted pregnancy but also increasing their chances of success in ART.

References


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