

Introduction

Infertility is defined as the inability of a couple to achieve a pregnancy after 1 year of unprotected intercourse. Infertility affects about 7.3 million women and their partners in the United States, about 12% of the childbearing-age population. A male factor is solely responsible for infertility in 20% of couples and is a contributing factor in another 30 - 40%. In the evaluation of male infertility, the goal of assessment and diagnosis is to determine reversible and non-reversible infertility factors. There may be hormonal abnormalities that can lead to decreased sperm production, abnormalities in testicular function, or abnormal sperm transport or delivery. Other factors that may affect fertility are medications, alcohol use, and illicit drug use. The comprehensive infertility evaluation includes a complete health history, physical exam with a focus on male genitalia, labs, and an initial semen analysis.

Signs and Symptoms

Men typically do not have any signs or symptoms, but may experience low energy, low sex drive, swelling or enlarged scrotum, scrotal pain or discomfort, or erectile dysfunction. Abnormal testicular size/shape, abnormal shape of the epididymis, absence of the vas deferens, or pain/tenderness to palpation may also be noted on exam. Men may experience increased stress, anxiety, depression, as well as other mental changes related to the inability to achieve pregnancy.

The most common correctable cause of male infertility is a varicocele. A varicocele is a collection of dilated veins that drain the testicle. Varicoceles are thought to result in increased testicular temperature, which in turn may decrease sperm production and motility. A varicocele is present in 15%-20% of all males and up to 40% of infertile males. Some may have scrotal discomfort or pain with varicoceles; more commonly men have no symptoms at all.

Diagnosis

A complete semen analysis is a vital tool in evaluating sperm volume, count, motility, and shape. Semen analysis can vary from sample to sample, so it is important to complete at least two samples within a month between samples. Abstinence of greater than 48 hours but less than or equal to 7 days is recommended.

As part of the evaluation, laboratory analyses are completed to evaluate for testicular and pituitary hypofunction (low testosterone). A thorough exam assists to identify anatomical abnormalities that may impact fertility, and genetic testing such as a karyotype analysis may be recommended. Imaging may be helpful as well and may be ordered to evaluate for or confirm suspicious or difficult physical exam findings.

Testicular biopsy is a useful procedure to identify if there are sperm present within the testicle if semen analyses show a sperm count of zero. The testicular biopsy can assist patients in making decisions regarding future assisted reproduction including testicular or epididymal sperm extraction for use with in-vitro fertilization (IVF).

Treatment

Treatment is aimed at the cause of infertility and may include medications and/or surgical intervention. Medications may include Clomiphene citrate or human chorionic gonadotropin (hCG) to increase testosterone levels and improve sperm production. Varicocelectomy may be discussed if a varicocele is noted on exam or on scrotal ultrasound. There are many ways to do a varicocele repair but all involve blocking the blood flow in the veins. Improvement in the semen analysis may take up to 12 months after the procedure is performed.

Prevention

Living a healthy lifestyle is important in fertility. It is recommended to abstain from heavy alcohol consumption, illicit drug use, and tobacco use. If overweight or obese, weight loss is encouraged. Other recommendations include daily exercise, a healthy diet, and avoidance of environmental / occupational hazards such as exposure to dangerous chemicals or heavy metals. Taking a daily multi-vitamin and Coenzyme10 (CoQ10) 100 mg daily may also be recommended for overall health and improvement of sperm parameters.

Conclusion

There are both male and female factors that impact fertility. If efforts to achieve pregnancy have failed for 1 year or more, it is recommended both members of the couple be evaluated to assist in identifying correctable causes, and to discuss available treatment options.

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References

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