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Editorial

Male Infertility

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Male infertility affects approximately 12% of men aged 15−44 years in the United States. However, the risks of infertility in male physicians compared to the general population remain poorly studied [1]. Fertility declines with increasing age in both men and women. There have been concerns regarding the potential effects of older paternal age on male reproductive function. [2] However, currently available data on this topic are insufficient. The young group consisted of men under 35 years old, and the middle-aged group consisted of men over 45 years old. The two groups had no significant differences in sperm concentration or sperm morphology. However, the middle-aged group had a smaller semen volume. The Mean paternal age increased over the past 44 years from 27.4 to 30.9 years. College education and Northeastern birth states were associated with higher paternal age. [3] Racial and ethnic differences were also identified, whereby Asian fathers were the oldest and Black fathers were the youngest. The parental age difference (paternal age minus maternal age) has decreased over the past 44 years. Male infertility due to testicular failure has traditionally been viewed as unmodifiable. In the absence of effective pharmacological therapies, delivery of lifestyle advice is a potentially important treatment option. Future research efforts are needed to determine unidentified factors causative in “idiopathic” male infertility and long-term follow-up studies of babies conceived through Assisted Reproductive Techniques (ART). [4] Varicocele is defined as the abnormal dilatation of the pampiniform plexus of veins within the scrotum. its incidence in infertile men ranges from 35% to 40%, although may occur in up to 15% of the normal male population. Most clinically detectable varicoceles are left sided. Varicoceles may impair spermatogenesis by mechanisms including compromised testicular cooling, hypoxia and sperm DNA damage. Varicocele repair is not recommended in subclinical varicoceles or in men with normal semen parameters. Varicoceles are present in 15% of normal men and in approximately 40% of men presenting with infertility.

Elevated testicular temperature and venous reflux appear to play an important role in varicocele-induced testicular dysfunction. The physical examination should be performed with the patient in the recumbent and upright positions. Only palpable varicoceles have been documented to be associated with infertility. Varicocele treatment should be offered to the male partner of a couple attempting to conceive when all of the following factors are present: [1] a varicocele is palpable, [2] the couple has documented infertility, [3] the female partner has normal fertility or potentially correctable infertility. [4]. Treatment of varicocele is not indicated in patients with normal results on semen analyses or subclinical nonpalpable varicoceles. Adult men who have a palpable varicocele and abnormal semen analyses but are not attempting to conceive may also be offered varicocele repair. Adolescents who have a varicocele and objective evidence of reduced ipsilateral testicular size should be offered varicocele repair. Adolescents with a varicocele and normal ipsilateral testicular size should be offered follow-up monitoring, including annual objective measurement of testicular size or semen analysis (or both). The two approaches to varicocele treatment are surgery and percutaneous embolization. Surgical repair of a varicocele may be accomplished by various open surgical methods, including retroperitoneal, inguinal, and subinguinal approaches, or by laparoscopy. All approaches to varicocele surgery are associated with a small risk of wound infection, hydrocele, persistence or recurrence of varicocele, bleeding, and, rarely, testicular atrophy. Potential complications of an inguinal incision for varicocele repair include scrotal numbness and prolonged pain. Results of Varicocele surgical treatment successfully eliminate more than 90% of varicoceles. Most studies have reported that semen quality improves in a majority of patients after varicocele repair. Of hundreds of studies on varicoceles, only two well-designed, randomized, prospective, controlled studies of men with palpable varicoceles, abnormal semen variables, and normal female partners have been published. One of these studies showed no greater likelihood of pregnancy after varicocele repair but did show significant improvement in testicular volume and semen variables. The other study showed a conception rate of 60% in couples in whom the male partner had a varicocele repair compared with only 10% in the untreated control group [5]. Of the many other studies on the fertility outcome of varicocele repair, most show improvement in fertility; few have shown little or no effect on fertility. One review of the literature found a pregnancy

rate of 33% in couples after varicocele repair compared with 16% in untreated couples over 1 year. Intrauterine insemination and assisted reproductive techniques should be considered for couples in whom infertility persists after anatomically successful varicocele repair. The full reports of the Male Infertility Best Practice Policy Committee of the American Urological Association and the Practice Committee of the American Society for Reproductive Medicine are available on the website of the AUA (http://shop.auanet.org/timssnet/products/best_practice/) and on the website of the ASRM (http://www. asrm.org/Media/Practice/practice.html). These reports are intended to provide medical practitioners with a peer-reviewed consensus of principles and strategies for the health care of couples with male infertility problems. The reports are based on current professional literature, clinical experience, and expert opinion. They do not establish a fixed set of rules or define the legal standard of care, and they do not preempt physician judgment in individual cases. [6] There is a developing body of evidence suggesting that male infertility may be a sign of future health. Potential associations between infertility and health may arise from genetic, developmental, and lifestyle factors. Studies have explored possible links between male infertility and oncologic, cardiovascular, metabolic, and autoimmune diseases. Male infertility may also be a predictor of hospitalization and mortality. Additional research is required to elucidate how male infertility affects overall health. [7] Overall, 44 and 16 studies were retrieved for gonadotropin and GnRH therapy, respectively. Of those, 43 and 16 considered the appearance of at least one spermatozoon in semen, whereas 26 and 10 considered sperm concentration upon gonadotropin and GnRH, respectively.

The combination of the study results showed an overall success rate of 75% (69–81) and 75% (60–85) in achieving spermatogenesis, with a mean sperm concentration obtained of 5.92 (4.72–7.13) and 4.27 (1.80–6.74) million/ mL for gonadotropin and GnRH therapy, respectively. No difference in terms of successful achievement of spermatogenesis and sperm concentration was found for different FSH preparations. Previous use of Testosterone Replacement Therapy (TRT) did not affect the results obtained with gonadotropins. Finally, a higher success rate was found for subjects with lower levels of gonadotropins at the baseline and for those using both human chorionic gonadotropin and FSH. Gonadotropin therapy, even with urinary derivatives, is a suitable option in inducing/restoring fertility in azoospermic HHG subjects. Gonadotropins appear to be more efficacious in subjects with a pure secondary nature (low gonadotropins) and a post-pubertal onset of the disorder. [8] The variability observed in healthy men suggests that characteristics such as the epididymal reservoir effect may influence the modeling of in vivo spermatogenesis. [9] Measures of semen quality are used as backup measures of male fertility in clinical andrology, reproductive toxicology, epidemiology, and risk assessment. However, only limited data are available to relate those measures to fertility. A study involving 210 reproductive-age couples was conducted to provide information on the value of semen quality measures in predicting human male fertility potential and for developing models to estimate the effects of changes in semen quality on fertility in a given population for risk assessment. The study followed each couple for up to 12 menstrual cycles while they attempted to conceive and evaluated semen quality measures from multiple ejaculates per man with known abstinence intervals. For each cycle, the day of ovulation was predicted, and the couple was advised to have intercourse multiple times on that day and on the days around it. [10] In my opinion, I do recommend that my colleagues follow the full reports of the Male Infertility Best Practice Policy Committee of the American Urological Association and the Practice Committee of the American Society for Reproductive Medicine, which are available on the website of the AUA.

Reference

1. Joshua A. Halpern, Justin M. Dubin , Robert E (2025) Prevalence of Infertility and barriers to Family Building among Male Physicians, Andrology. 13: 251-258.
2. Tae Ho Lee, Dong Suk Kim, Dae Keun Kim, Seung-Hun Song (2023) Effect of male age on reproductive function: A comparison of young and middle-aged men, Investig Clin Urol 64: 51-55.
3. YashS.Khandwala, Chiyuan A.Zhang, YingLu, Michael L.Eisenberg (2017) The age of fathers e USA is rising: an analysis of 168867480 births from 1972 to 2015, Human Reproduction. 32: 2110-2116.
4. Aditi Sharma, Suks Minhas, Waljit S Dhillo, Channa N Jayasena (2021) Male infertility due to testicular disorders, The Journal of Clinical Endocrinology & Metabolism, 106: e442-e459
5. Ira D. Sharlip, Jonathan P. Jarow, Arnold M. Belker, Larry I. Lipshultz (2002) Best practice policies for male infertility, FERTILITY AND STERILITY. 77: 873-882.
6. Hagai Levine, Niels Jørgensen, Anderson Martino Andrade, Jaime Mendiola (2017) Temporal trends in sperm count: a systematic review and meta-regression analysis, Human Reproduction Update, 23: 646–659.
7. Jeremy T. Choy, Michael L. Eisenberg (2018) Male infertility as a window to health, Fertility and Sterility 110: 810-814
8. G. Rastrelli, G. Corona, E. Mannucci , M. Maggi (2014) Factors affecting spermatogenesis upon gonadotropin-replacement therapy: a meta-analytic study, Andrology, 2: 794-808.
9. L. M. Misell, D. Holochwost, D. Boban, N. Santi (2006) A Stable Isotope-Mass Spectrometric Method for Measuring Human Spermatogenesis Kinetics In Vivo, The journal of urology, 175: 242-246
10. MICHAEL J. ZINAMAN, CHARLES C. BROWN, SHERRY G. SELEVAN, ERIC D. CLEGG (2000) Semen Quality and Human Fertility: A Prospective Study With Healthy Couples, Journal of Andrology, 21: 145-153.