





OPTIMIZED TREATMENT OF MEN'S HYPOHONADISM

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ABSTRACT

Aim: to study the effectiveness of different treatment options for male hypogonadism.

Material and methods: the paper investigates outcomes in treating male hypogonadism (86 patients with secondary male hypogonadism). Scientific literature was reviewed to single out the following methods:

1. androgen replacement therapy
2. subcutaneous testosterone pellet implants
3. use of long-acting subcutaneous testosterone tablets (the use of subcutaneous long-acting testosterone tablets as replacement therapy),
4. a combination of traction therapy and medication Testosterone undecanoate.

Results: androgen replacement therapy promotes the development of a number of beneficial effects in terms of physique, metabolic control, psychological and sexual indicators. The use of long-acting subcutaneous testosterone pellets can enhance the androgenic effect at the receptor level. The combined method of treatment traction therapy and medication Testosterone undecanoate is relevant for men with concomitant micropenia. The surgical method of subcutaneous testosterone pellet implants is recommended for patients with contraindications to testosterone replacement therapy. The determination of sexual constitution's indicators testified to persistent sexual rehabilitation in the long term after transplantation of testicle.

Conclusions: Each clinical case should be approached individually and optimized in case of concomitant pathologies. According to the scientific literature, androgen replacement therapy is optimized as an application of long-acting subcutaneous testosterone tablets, which shows good results in case of concomitant pathologies. For men with concomitant micropenia, it is suggested to apply the combined treatment of traction therapy and medication Testosterone undecanoate. In case of contraindication to hormone therapy, subcutaneous testosterone pellet implants are the optimal option.

Keywords: hypogonadism, gynecomastia, quality of life, ligamentotomy, testicular prosthetics, arterial venous pedicle, pituitary gland, gonads, allotransplantation.

INTRODUCTION

In most cases, male hypogonadism occurs with disruption of both the endocrine and excretory functions. Male hypogonadism is clinically accompanied by the feminization of the male figure: onset of

gynecomastia, narrow shoulders, wide pelvis, obesity and female-type hair loss, which significantly worsens the quality of life and affects social adjustment. With a variety of phenotypic abnormalities, the patient may have the appearance of a supposedly healthy man, which makes it difficult to diagnose and treatment in the future [9].

Currently, androgen replacement therapy remains the most common method of treating primary male hypogonadism. However, it is worth mentioning that this therapy has a number of contraindications and side effects. Exogenous testosterone suppresses spermatogenesis and aggravates the manifestation of hypogonadism as male infertility. According to the European recommendations of 2019, testosterone replacement therapy has been questioned as part of the treatment of male infertility. This leads to the conclusion that there is a demand to find new or improve already known approaches to the treatment of male hypogonadism [7,9].

Due to the research of the European Association of Urologists, it turned out that there is a distinctive tendency to improve the quality of life of men with hypogonadism after undergoing a course of traction correction [2]. The results of study demonstrated a certain spread of depression, despite a full course of surgical correction [3,6]. It was defined that after surgical treatment with additional hormone therapy, there is a significant increase in erectile function for men with hypogonadism [3,5]. The majority of patients noted a relief in meeting with sexual partners and a significant increase in their overall ability to work after surgical interventions [3,5,6].

RESEARCH METHODS

Relevant scientific literature on the following treatment methods have been reviewed: androgen replacement therapy, use of long-acting subcutaneous testosterone tablets, a combination of traction therapy and medication Testosterone undecanoate. Evaluation based on the subcutaneous testosterone pellet implants method was conducted. 86 male patients aged 49 - 71 years with secondary male hypogonadism were examined before and after a full treatment course in the clinical Center No. 25 at RUDN University (Moscow, Russia). Patients were under control within 63 months. All patients underwent orthotopic transplantation of testicle on arterial venous pedicle using the subcutaneous testosterone pellet implants technique. The essence of the operations consists of connecting the testicular artery and vein of the allogeneic graft to the lower epigastric vessels of the recipient and transposition of vascular pedicle into the inguinal canal. In the early postoperative period, immunosuppressive therapy was used under the control of immunological monitoring [1]. Hormone replacement therapy was canceled immediately after transplantation. In case a rejection crisis occurs, correction with immunosuppressive therapy was proceeded. Influence of transplantation on quality of life was assessed with data from self-observation cards.

RESULTS

Over the past two decades, significant advances have been made in the development of new delivery systems for testosterone replacement. This has led to the appearance of new usage options for doctors and new methods of testosterone delivery, other than, for example, injections, which are currently considered unprofitable.

The goal of androgen replacement therapy is to increase the level of testosterone in the blood serum to the average normal range of 400-700 ng/dl and resolve or reduce the symptoms of hypogonadism. Androgen replacement therapy promotes development for a number of beneficial effects in terms of physique, metabolic control, psychological and sexual indicators. However, testosterone therapy is questionable, especially for older men, due to the potential risk of possible consequences for prostate and breast tissues, disorders of the cardiovascular system.

Scientific researches on use of long-acting subcutaneous testosterone tablets show positive results, as they lead to adequate accumulation of bone mass and maintenance of normal bone mineral density. According to the assessment of bone mineral density for all patients using dual-energy X-ray absorptiometry, as well as measuring the level of testosterone in the blood serum 3-4 months after administration of tablets, there were increases in the average bone mineral density in the lumbar spine and hip neck, respectively. The average level of testosterone in the blood serum 3-4 months after administration was 15.45 nmol/ l (SD 4.2 nmol/l). Thus, subcutaneous implants in form of testosterone tablets, providing a stable physiological level of testosterone, can enhance the androgenic effect at the receptor level [8].

Optimized conservative therapy for men with hypogonadism and concomitant micropenia based on combination of traction therapy with androgen replacement therapy with prolonged injectable Testosterone undecanoate, during study of scientific sources, indicates a significantly positive effect on

length of the penis. It is worth noting that the earlier hormone therapy is started, the more chances there are to achieve an acceptable penis length. Research included 16 adult men aged 22-62 years with micropenia and hypogonadism for 12 months. 10 men were diagnosed with primary hypogonadism, 6 with secondary without reserve gonads function, as a result of which all 16 patients received Testosterone undecanoate therapy (1000 mg). By the end of treatment, length of the penis increased in a soft state with maximum stretching by 58% from original one. During 12 months of treatment, the volume of the testicle for all men increased from 3.4 to 16, which corresponds to the size of healthy man's gland [2].

Patients with hypogonadism with androgen insufficiency, treated by subcutaneous testosterone pellet implants, noted violations of somatic androgen-dependent signs. Prior to the operation, among 86 patients, 20 had no sexual enterprise, 26 had a significant decrease in it, and 40 had a slight decrease. In the late postoperative period, the consistency of sexual rehabilitation was expressed in a fairly high number of marriages. After testicle's transplantation in 2-4 years, 90% of patients were married, even though they had reduced or significantly reduced sexual enterprise before surgery. In some cases, sexual rehabilitation was accompanied by andrological rehabilitation: enlargement of the genitals, increased hair growth on the face, body according to the male type. Satisfaction and frequency of sexual life after surgery were noted by 58 people (51%) compared to the numbers before the transplant (10 people). In the late postoperative period (3-5 years after transplantation), an increase in sociability with other people was recorded for 62 patients (54%). This method should be recommended to men with absolute contraindications to testosterone replacement therapy, since this method frees the patient from lifelong hormone therapy.

CONCLUSION

Nowadays, the most commonly used method for the treatment hypogonadism for men is androgen replacement therapy. This method is optimized as an application of long-acting subcutaneous testosterone tablets. Its use leads to the accumulation of bone mass and the maintenance of normal bone mineral density, which is relevant for concomitant pathologies (for example, osteoporosis). Also, for men with concomitant micropenia, there are indications for the combined treatment of traction therapy and medication Testosterone undecanoate.

It is worth remembering the individualized approach: so, with contraindications to hormone therapy, the optimal method is surgical intervention - subcutaneous testosterone pellet implants. Allotransplantation of the testicle on arteriovenous pedicle is recommended for patients with hypogonadism with androgen deficiency in order to achieve sexual rehabilitation.

Dynamic monitoring of the level of hormones of the pituitary-gonadal system allows to control the condition of transplanted organ. The improvement of the hormonal profile indicates an uncomplicated course of the postoperative period and satisfactory sexual rehabilitation of patient.

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