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ORIGINAL RESEARCH—ERECTILE DYSFUNCTION

Is It Worth Continuing Sexual Rehabilitation after Radical Prostatectomy with Intracavernous Injection of Alprostadil for More than 1 Year?

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ABSTRACT

Introduction. Intracavernous alprostadil injection (IAI) is a widely used treatment for sexual rehabilitation (SR) after radical prostatectomy (RP). It is unknown whether the continuation of IAI beyond 1 year continues to improve erectile function.

Aims. To assess evolution of sexual function in patients using IAI who are nonresponsive to phosphodiesterase type 5 inhibitors (PDE5i) between 12 (M12) and 24 (M24) months after RP.

Methods. We retrospectively studied 75 men with a nerve-sparing laparoscopic RP, who had normal preoperative erectile function, and who regularly used IAI for SR for at least 24 months. At M12, no patients had responded to PDE5i.

Main Outcome Measures. At 12 and 24 months, sexual function was assessed with the UCLA Prostate Cancer Index (UCLA-PCI), International Index of Erectile Function (IIEF)-15, and erection hardness score (EHS) with and without IAI. We also assessed the satisfaction rate with IAI, injection-related penile pain, and satisfaction of treatment. Statistical analysis was performed by using *t*-tests for paired data and Spearman's rho correlation coefficients to assess the relationships between scores at M12 and M24.

Results. Improvement of nocturnal erection was noted (UCLA-PCI, question 25); however, no significant difference was found for IIEF-erectile function with (19.60 ± 9.80 vs. 18.07 ± 10.44) and without IAI (4.63 ± 2.93 vs. 4.92 ± 4.15), UCLA-PCI-sexual bother (37.14 ± 21.45 vs. 37.54 ± 19.67), nor the EHS score with (2.97 ± 1.30 vs. 2.57 ± 1.30) and without IAI (0.67 ± 1.11 vs. 0.76 ± 0.10). The rate of satisfaction with treatment decreased over time (66.6% vs. 46.7%, $P = 0.013$). Improved response to IAI at M12 was not correlated to improvement in spontaneous erections at M24.

Conclusion. The response to IAI remained stable after 2 years of treatment, and no significant improvement of spontaneous erections during intercourse attempts was found between M12 and M24. Patients should be informed of the limited effect of IAI on natural erections after 1 year. **Yiou R, Bütow Z, Parisot J, Binhas M, Lingombet O, Augustin D, de la Taille A, and Audureau E. Is it worth continuing sexual rehabilitation after radical prostatectomy with intracavernous injection of alprostadil for more than 1 year? Sex Med 2015;3:42–48.**

Key Words. Erectile Dysfunction; Sexual Rehabilitation; Radical Prostatectomy; Alprostadil; Sexual Pain

Introduction

Radical prostatectomy (RP) remains the standard treatment for organ-confined prostate cancer but continues to cause erectile dysfunction related primarily to cavernous nerve injury [1]. Despite the use of nerve-sparing techniques, cavernous nerve dissection induces neuropraxia with a decrease in nitric oxide production. The resulting absence of erections during the postoperative period may cause cavernous tissue fibrosis and veno-occlusive dysfunction, ultimately leading to permanent erectile dysfunction [2]. To prevent this sequence of events, early treatment with either oral erectogenic drugs such as phosphodiesterase 5 inhibitors (PDE5i) [3–5] or intracavernous injection of vasoactive substances [6–8] is now considered in patients who wish to recover sexual activity after RP. The objective of this treatment is to resume satisfactory intercourse and prevent cavernous tissue damage by improvement in local oxygen supply [9]. The regular use of erectogenic drugs is believed to improve spontaneous erections and is therefore widely advocated for sexual rehabilitation (SR) after RP [2,9–12].

In our department, SR after RP relies chiefly on the use of intracavernous alprostadil injections (IAIs). IAI remains one of the most widely prescribed treatments for post-RP erectile dysfunction (pRPED) in France [13], predominately because the costs of this treatment following RP surgery are reimbursed by public health insurance. Several studies have demonstrated that erectile function improves with the early and regular use of IAI alone [6,14–16] or combined with other vasoactive substances [3–17]. However, it is not known how long this treatment should be continued before the maximal effect is reached. Moreover, IAI often causes penile pain [18], which leads to a high treatment discontinuation rate (35% in our experience at 1 year) and hinders the SR process [16–19]. We have previously shown in a population of patients with pRPED, and treatment with or without IAI, that erectile function improves between the 6th and 12th month after starting IAI. However, the overall erectile function remained low after 1 year, and significant pain on erection (>4/10) was still reported by some patients. Consequently, after 1 year of treatment with IAI, some patients still have insufficient erections even when using PDE5i and may express lassitude toward IAI and/or subsequently report impaired quality of life due to the constraints of the treatment. In such situations, it is unknown whether the SR process should be continued with further IAI treatment in order to increase the chances of developing a natural erectile function or if another therapeutic strategy should be considered. Other injectable erectogenic preparations such as Tri-Mix [7] and alprostadil combined with lidocaine [20] may cause less pain than alprostadil alone and therefore may be more efficient. However, in France, one of the Tri-Mix components, phentolamine, is not available, and another, papaverine, is not licensed for intracavernous use. At present, Tri-Mix is not among the treatments recommended by the French Urological Association (AFU) for erectile dysfunction after RP [21]. As a consequence, IAI and PDE5i represent the main therapeutic options for SR in France.

Aims

In this study, we investigated whether patients using IAI for pRPED, who were unresponsive to PDE5i at 1 year following RP, would continue to improve their sexual function, whether IAI-induced or spontaneous erections, when the IAI treatment was continued for a further year.

Methods

Charts of patients undergoing bilateral nerve-sparing laparoscopic RP between July 2007 and July 2010 for localized prostate cancer and who were enrolled in a SR program consisting of IAI for at least 2 years were reviewed retrospectively. All RP procedures were performed by one of three experienced surgeons in our department.

The SR program consisted of alprostadil injections (Edex®, Schwarz Pharma, Boulogne Billancourt, France) self-administered intracavernously commencing 1 month after RP surgery under the supervision of a physician and a nurse. An information letter explaining the concept of SR was given to all patients. Patients were advised to perform the injection at home twice a week. They received follow-up at the uro-oncology department once a week until the injections could be performed competently. Patients were then reviewed every 6 months. We advised patients to attempt intercourse as often as possible as part of the SR process. PDE5i (Viagra® 100 mg, Pfizer, New York, NY, USA) treatment was systematically offered after 1 year of IAI use or before if spontaneous erections were reported. PDE5i was considered a failure when patients achieved an erection hardness score (EHS) of less than two, and therefore were unable to