



Short term use of intracavernous vasoactive drugs in the treatment of persistent psychogenic erectile dysfunction

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The objective of this retrospective study is to evaluate the effectiveness of short term intracavernous pharmacotherapy in the treatment of persistent psychogenic impotence. The study included 153 patients evaluated within an Andrology clinic in a general hospital working in close relation to three psychiatry clinics in three hospitals. Patients underwent an average of two office sessions of intracavernous injections for the selection of the appropriate intracavernous agent and dose, and for self injection training. Of the 153 patients included in our study 98 (64%) needed the injection for less than three months, only 18 (12%) patients needed the injections up to one year. We concluded that intracavernous self injection of vasoactive drugs is an effective alternative in the treatment of men with persistent psychogenic impotence when sex therapy is unsuccessful.

Keywords: erectile dysfunction; impotence; intracavernous injection; pharmacological erections

Introduction

The use of intracavernous vasoactive pharmacotherapy helped resolve a great deal of frustration on the part of the patient as well as the physician treating patients with organic impotence.^{1,2} Although the gold standard in the treatment of psychogenic impotence is still sexually focused behavioral therapy (sex therapy), yet many cases of treatment failure still do occur.^{3,4} Social and interpersonal factors may also interfere with the couples' acceptance and compliance with sex therapy. In such situations, it may be tempting to initiate a short course of intracavernous injection of vasoactive drugs hoping to break the performance anxiety cycle. In this study we reviewed our experience with 153 patients with persistent psychogenic impotence treated with intracavernous vasoactive drugs.

Patients and methods

One hundred and ninety four patients with psychogenic erectile dysfunction received intracavernous injections for the treatment of psychogenic impotence over a four year period. Follow-up data was available for a total of 153 (79%) patients. All patients were being treated for psychogenic impotence diagnosed as performance anxiety and have failed to respond to repeated trials with sex therapy.

Attempts were made at treatment with couple therapy, using Masters and Johnson's behavioral techniques, and counseling. Patients were given at least four sessions of therapy before the attempt was considered unsuccessful. The patients were also seen usually after failure of self-management with the use of various aphrodisiacs including yohimbine, ginseng, and mestrolone. Patients with psychotic disorders, depression and a history of substance abuse were not included in this study. Patients were evaluated by three psychiatrists from two general and one military hospitals.

The diagnosis of a psychogenic etiology for impotence was based on a clear history of full rigid morning or night erections, or rigidity of 70% or more recorded at the base and tip of the penis, and sustained for more than five minutes on at least one erectile episode during the Rigiscan monitoring of

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Table 1 Patients' age and duration of impotence

Patient group	Number	Mean age	Duration of impotence (years)
Study group	153	34 (19–58)	3 (<1–17)
Drop out group	41	33 (26–55)	4 (<1–13)
Fear of marriage	32	35 (23–47)	7 (2–17)
Honeymoon impotence	72	27 (19–41)	0.3 (0.1–2)
Married patients	49	44 (27–58)	5 (1–15)

nocturnal penile rigidity. The mean age was 34 y (range 19–58). The mean duration of impotence was three years (range 1–17), (Table 1).

Serum testosterone and prolactin levels were evaluated only in patients older than fifty years, or in younger patients with suspected abnormalities based on their medical history or physical examination. Penile biothesiometry was performed for all patients during their initial physical examination. Penile color flow duplex ultrasonography and dynamic infusion cavernosometry/cavernosography were not performed as part of the initial evolution.

Patients underwent an average of two office sessions of intracavernous injection. In the first session, a test dose of 10 µg PGE1 was injected into the lateral corpus through a 30 G needle fixed on a tuberculin syringe. The injection technique was demonstrated and explained to the patient with special emphasis on the sterile technique and the firm compression of 5 min after the injection. If the erection achieved was judged to be inadequate, a booster injection of 0.5 ml of a trimix solution of PGE1 10 µg, Papaverine 6 mg, and Phentolamine 1 mg was used. In the second session, patients performed the injection themselves in the office and the dose was adjusted. Heyden *et al*⁵ described a similar protocol for the selection of the appropriate agent and dose for intracavernous injections. Patients were then sent home with eight preloaded syringes in separate sealed packets of the appropriate concentration, and with written instructions of the injection protocol. The number of injections was limited to twice per week for the first month then once weekly thereafter, if needed

Results

Of the 153 patients included in our study only 18 (12%) patients needed the injections more than one

year (Table 2). Of the 32 patients who were trained and provided with self injections before marriage because of fear of failure, only 9 (28%) patients reported that they needed to use it all. Eight patients (25%) used the injections for less than three months while only one patient (3%) needed to continue using the injections for more than one year after marriage (Table 3).

Of the 72 patients presenting with honeymoon impotence—an episode of impotence that started on the honeymoon—67 (93%) reported successful defloration and subsequent intercourse, while 5 (7%) were still unable to perform due to severe vaginismus. Forty-six (64%) patients were able to discontinue the treatment in less than three months of self injections while 15 (21%) were able to discontinue the medication from three months to less than one year. Six (8%) patients still needed long term self injection for more than one year.

Out of the 49 married patients with performance anxiety, 21 (43%) discontinued the treatment in less than three months, 17 (35%) from three months to less than one year, while 11 (22%) patients continued the injections for more than one year.

No systemic complications occurred in our series. Local complications included prolonged erections in four patients (2.6%) for more than four hours, they all occurred during the dose adjusting phase of the program. All prolonged erections occurred when using the trimix solution and they all resolved with aspiration/saline irrigation, and direct intracavernous injection of one ampoule of ephedrine (50 mg). No penile fibrous nodules, hematomas or infections occurred during our short term study period.

Pain occurred in 31 (20%) patients but the problem resolved by decreasing the volume of the PGE1 or trimix used. In one patient a Papaverine/Phentolamine mixture was used with no PGE1 to overcome the pain.

Table 3 Fear of marriage

Patients trained for self injections	32
Patients actually using the injection	9 (27%)
Patients using the injections for less than three months	8 (25%)
Patients using the injections for more than one year	1 (3%)

Table 2 Use of intracavernous self injection

Presentation	<3 months	3 months to 1 year	>1 year	Total
Fear of marriage	31	0	1	32
Honeymoon impotence	46	15	6	72 ^a
Married	21	17	11	49
Total	98 (64%)	32 (21%)	18 (12%)	153

^a Five patients failed at vaginal penetration due to vaginismus.

Discussion

Physicians attending patients with erectile dysfunction in certain conservative societies frequently face unique situations related to the culture and family attitudes. Newly married couples in conservative societies probably have limited premarital sexual experiences. Although this makes the wedding night a very special event, yet men with fear of failure are under a significant amount of stress, not only do they fear embarrassment with their wives but also possible humiliation with the bride's family.

The varying degree of success of sex therapy with a response rate of 40–66% has been frustrating to therapists and patients alike. In addition, sex therapy involves an increasing demand on limited resources. This demand is also on the time of both therapists and patients over six visits, with sessions lasting at least an hour. Therapy which lasts for long periods increases the performance related anxiety.

Sex therapy requires a level of understanding and cognitive ability to conceptualise the problem and challenge its basis. The cultural acceptance of joint couple therapy, which is the mainstay of sex therapy, is greatly compromised in our population and probably for many in the developing world. These factors seem to have encouraged non-compliance with sex therapy in the majority of the sample studied.

Vickers *et al*⁷ evaluated 18 cases of psychogenic erectile dysfunction and suggested the pharmacological erection program or the vacuum constriction devices as an immediate answer followed by sensate focus/psychodynamic specific therapy if needed. Penile prosthesis was considered for treatment failures.

In our study 32 men were postponing their marriage indefinitely hoping for the magic drug that would ensure their potency and protect them from embarrassment. Intracavernous vasoactive drugs resolved this problem and only nine patients ended using the injections. Only one (3%) patient was unable to discontinue the self injections in this group. In the honeymoon impotence group, self injections were successful in 67 (93%) of the 72 patients, the five failures were due to vaginismus. Only 6 (8%) patients needed long term use. We believe that intracavernous vasocactive pharmacotherapy has been very successful in these two groups (fear of marriage and honeymoon impotence) considering the fate of these patients after failing with sex therapy.

In the married group, 11 (22%) of 49 patients needed long term use of the drugs, these results appear to justify the use of intracavernous vasoactive drugs in the treatment of performance anxiety not responding to sex therapy. They also compare well with reported success of behavioral techniques varying from 30% (Schmidt)³ to 80% (Masters *et al*).⁴

The use of short term intracavernous vasoactive drugs was also quite safe. The four cases of prolonged erections were easily resolved with aspiration/irrigation and ephedrine injection. No penile fibrous plaques occurred. This might be related to the limited number and frequency of self injections, the minimal trauma of the 30 gauge needle, and stressing the importance of the five minute compression after the injection.

Although pain occurred in 31 (22%) patients, yet this was overcome by decreasing the dose of PGE1 or using a drug combination to achieve an erection adequate for sexual intercourse with minimal pain.

The problems encountered with sex therapy in addition to the above mentioned advantages, encourage one to consider a biological form of therapy when behavioral management becomes difficult. When planning treatment one needs to consider the cultural, educational and non-compliance issues associated with and blocking further management.

Although good success was noted in our trial, further follow-up is needed to determine the recurrence rate of the problem and if a brief course of intracavernous injections is sufficient to overcome the psychogenic barriers.

We declined from performing Penile color flow duplex ultrasonography and dynamic infusion cavernosometry/cavernosography as part of the initial evaluation. These investigations are not yet gold standards, and diagnostic criteria remain poorly defined.^{8–11} We judged that false positive results would add to the patient's anxiety and could thus be counterproductive to the outcome of therapy. One must weigh the benefit of performing these tests for a patient with clear history of full rigid morning or night erections, or rigidity of 70% or more recorded at the base and tip of the penis, and sustained for more than five minutes on at least one erectile episode during Rigiscan monitoring of nocturnal penile rigidity versus the risk of adding to the patient's anxiety with a false positive result on penile vascular studies. On the other hand, using pharmacarteriography which is widely regarded as the gold standard in the diagnosis of arteriogenic impotence, would be excessively invasive during a patient's initial evaluation and would not be in line with a goal directed approach to treatment.¹²

We evaluated serum testosterone and prolactin levels only when we suspected them to be abnormal on the basis of the patient's age, medical history and physical examination. Our goal was to be cost-effective. Buvat and Lemaire¹³ screened 1022 men with erectile dysfunction and concluded that low prevalences and effects of low testosterone and high prolactin levels in erectile dysfunction cannot justify their routine determination.

Treatment was completed with 153 (79%) patients. This is similar to follow-up rates in other sexuality studies.^{6,14,15} Unfortunately, little is

known about the 41 (21%) patients for whom follow-up data was not available. While demographically they may not differ, one cannot even hazard a guess as to the outcome of their treatment.

Conclusions

Although sexually focused behavioral therapy (sex therapy) is the preferred method of treatment for patients with psychogenic impotence, yet we believe that intracavernous self injection of vasoactive drugs is a safe and effective alternative when sex therapy fails or is refused by the patient.

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