AUTO INJECTION OF PAPAVERINE FOR ERECTILE DYSFUNCTION FOLLOWING SPINAL CORD INJURY

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Erectile dysfunction is a common complication in men following spinal cord injury (SCI). This leads to failure to achieve satisfactory sexual intercourse. Intracavernous injection (ICI) of vasoactive drugs is the modern choice of treatment. Auto injection programme (self injection) of ICI of papaverine HCL of 26 young traumatic paraplegics were studied for a duration of 3 years. Thirty patients were selected for auto injection, but 26 patients entered the auto injection programme. Their mean age was 30 years (range 24-38 yrs.), average dose for full erection was 15 mg. (range 9-60 mg.) and mean duration of erection was 30 minutes (range 15-180 minutes). None had priapism after entering the auto injection programme.

Echymosis and/or haematoma requiring no treatment was the only complication noticed. Selected young paraplegics are highly successful with auto injection programme. Priapism occurs only while titrating for appropriate dose. Papaverine is considerably safer and more suitable for developing and under developed countries in treating the erectile problems of SCIED men.

Irreversible spinal cord injury is usually followed by tetraplegia or paraplegia and loss of normal bowel, bladder and sexual function.[1] Men with spinal injuries seek help from experts on sex and reproduction chiefly for three problems.

1) to improve the quality of (especially) the duration of their erections so they can coitus for pleasure.
2) to obtain semen.
3) to improve the quality of the semen.[2]

Options to overcome erectile impairment include alternative sexual practices, vacuum tumescence devices, penile prostheses and more recently, the use of intracavernous injections of vasoactive medications3. Studies have examined the use of intracavernous injection 4, 5, 6, 7, 8, 9, 10, vacuum tumescence devices 11, 12, 13, penile prostheses 14, 15, oral medication16, and topical drugs17, 18.

This prospective study focuses on auto-injection of papaverine HCL in young traumatic paraplegics and evaluates the merits and demerits for use in both developing and under-developed countries.

MATERIAL AND METHODS

Thirty traumatic SCIED paraplegic men from the Rehabilitation Ward and Outpatient Clinic, who fulfilled the following selection criteria, were offered the auto-injection programme.

Selection criteria

Paraplegics of age group 20-40 years, (having erectile dysfunction), who have successfully reintegrated in the society with no preventable pressure sores for at least six months.

Informed consent was obtained from the patients after fully explaining the complications of papaverine ICI. Following that, the patient is titrated for appropriate dose. The dosage regime for titration was as follows :- 9 mg., 15 mg., 30 mg. and 45 mg. and 60 mg. The desired duration of erection was left to the choice of the patient but not exceeding 4 hours. It was explained that papaverine does not have a linear dose related response on the duration of erection.

Once the appropriate dose is known, the patient is taught self ICI (one session of 15 minutes with audio visual aids).

The patient was provided with three months' supply of papaverine multidose vial, 2.5 ml.

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syringes, 25 gauge needles and alcohol swabs and reviewed every three months in the Rehabilitation OPD Clinic. The interval between injury and inclusion in the programme averaged 3.5 years (range 6 months to 5 years).

RESULTS

Among the 30 selected paraplegics, 4 were dropped before entering the programme because their partners objected to the procedure. Twenty-six patients entered the auto injection of ICI of papaverine HCL. Of these 1 (4%) developed priapism while titrating for the dose. None of the patients had priapism after entering the programme. Satisfactory erection achieved within one to three minutes following the ICI (average 1 minute). Mean duration of erection lasted was 30 minutes (range 15 minutes - 180 minutes). The dosage received was 9 mg. to 60 mg. (average 15 mg.).

Fifteen (58%) of the patients had echymosis and/or haematoma which required no treatment. There was no fibrosis or scarring of the cavernous tissue.

After entering the programme, 7 out of 8 single marital status paraplegics got married. The patient's satisfaction level was as follows :–

	Satisfaction level	Percentage
Overall	satisfied	100%
Penile Regidity	satisfied	63%
	disatisfied	37%
Duration	satisfied	90%
	disatisfied	10%

DISCUSSION

Auto-injection of vasoactive medications have gained great popularity since Virage first reported their use in the erectile dysfunction in 1982[19]. Papaverine is a smooth muscle relaxant that causes vasodilation. It's exact mechanism of action is unknown.

PGE1, is claimed to be superior than papaverine because more physiological, erection is linearly dosage related and incidence of priapism is less. But PGE1, or the combination drugs, have short expiry periods and require refrigeration. Moreover, the patient needs to visit the hospital which practices the above programme more frequently to obtain the drug as it requires mixing up.

All of our patients kept their multidosage vial, syringe and needle in the bath room. Keeping the medicine in the refrigerator, which is located in the kitchen in almost all houses, according to our patients seems more embarrassing and also they lose their privacy in the joint family environment.

CONCLUSION

To conclude, carefully selected SCIED patients and very low starting dosage for titration (9 mg.) definitely reduced the complications of papaverine to an acceptable level.

The requirements of refrigeration, frequent attendance to the hospitals which provide the above programme for supply of vaso active drugs such as PGE1, or combination drugs, outnumber the superiority of these drugs to papaverine HCL in developing and under-developed countries.

Therefore, papaverine HCL ICI is still a safer drug of choice for erectile dysfunction of SCIED patients.

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