

PHARMACOLOGICALLY INDUCED PENILE ERECTION (PIPE) IN ORGANIC AND PSYCOGENIC IMPOTENCE - A STUDY OF THIRTY CASES

ARUN K. SHARMA ● S.K. SHRIVASTAVA ● N. KHARE ● NIRMALA SHARMA

SUMMARY

Impotence is a complex syndrome involving the interaction of psychogenic, hormonal, neurological, arterial, venous & sinusoidal factors. Differential impotence emphasises the importance of the psychogenic element in the sexual activities. Management of impotence has evolved from a time-worn pattern of sympathetic discussion and empiric use of medication to a scientifically planned diagnostic protocol and a specific treatment regime.

The present study was undertaken to assess the effects of pharmacologically induced penile erection in the treatment of organic and psychogenic impotence. The total no. of cases studied were 30, who were given papavarine hydrochloride 40.2 mg., intra cavernosally. The parameters like mean penile length, mean penile circumference, rigidity, duration of erection and overall success rate studied are found to be appreciable and satisfactory in the patients receiving papavarine. Side effects like painful erection, bradycardia are much less. Thus PIPE achieved with papavarine is very effective and easy method of treating psychogenic and organic impotence.

INTRODUCTION

Impotence is a common cause of stress and unhappiness in the male and their

*Dept of General Surgery and Experimental Surgery,
J.A. group of Hospitals & G.R. Medical College, Gwalior
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partners. Since the mid 1970's, the traditional treatment for organic impotence has been the penile prosthesis with a high degree of acceptance. Penile revascularisation procedures although technically difficult, offer another surgical option. The ability of PIPE to induce erection was first reported in 1992 following accidental intracavernosal injection of papavarine during a shunting procedure. (Virag et al, 1982). PIPE were assessed to differentiate between vascular and psychogenic impotence (Jucques Bavat 1986). Papavarine hydrochloride (6, 7, demethoxy veratryl isoquinoline hydrochloride) is an alkaloid present to the extent of about 1% in crude opium. Papavarine HCL is a non-specific smooth muscle relaxant and that produces vasodilation (Needleman. P. & Johnson E. M., 1980)

The present study has been undertaken to thoroughly evaluate the cases of impotence and to assess the effect of papavarine hydrochloride induced penile erection in the treatment of organic and psychogenic impotence.

MATERIAL AND METHODS

Thirty (30) male patients of erectile impotence attending out patient department or referred from Surgical department and Gynaecology department of J.A. group of hospitals, Gwalior, comprised the subject population of the study.

They ranged in the age from 20 yrs. to 60 yrs. Four (4) normal male subjects of the same age group served as controls.

Criteria of selection of the patient :

The patient who showed complete erectile impotence were selected for the study. Detailed clinical history of the patient was

recorded and physical examination was done. Patients were subjected to investigations and psychological assessment.

Method of administration :

Before starting the procedure the length & circumference of penis, blood pressure (brachial) and pulse were measured. A tourniquet (soft rubber catheter) was applied at the root of penis. Parameters measured during next 15 minutes were brachial B.P., Radial pulse, length and circumference of penis and penile rigidity was monitored on Penrig Scale Data as reported by E.A. Kiely et al, 1987. In control group 2.75 cc normal saline was injected 2 cm proximal to corona on the lateral aspect of corpus.

Papavarine HCl 40.2 mg. was given by a single puncture, 2 cm proximal to corona on the lateral aspect of one of the corpus cavernosum. In all the cases, PIPE was given under complete aseptic precautions without local anesthesia and without sexual stimuli.

Patients have been followed up for the duration of 3 months for the frequency of spontaneous erection, frequency of sexual intercourse within a week and frequency of erection after sexual stimulation.

Clinical results were classified as good, fair, insufficient and unchanged.

RESULTS

In the present study 83.33% cases had psychogenic and 16.66% cases had organic impotence. (Table I) Psychological assessment was done on the basis of exclusion of organic lesions and associated stressful underlying events.

Control Cases :

The initial mean penile length in the control group was 7.25 cms. After injection

Table I
INCIDENCE OF PSYCHOGENIC AND ORGANIC IMPOTENCE

S. NO.	Cause	No. of Cases	Percentage
1.	Psychogenic	25	83.33
2.	Organic		
	Diabetic impotence	3	10.00
	Neurogenic (Alcoholic)	1	03.33
	Undiagnosed organic	1	03.33
Total		30	100.00

(n=30)

of normal saline there was no change in the penile length and it remained static at 7.25 cms.

The initial penile circumference in the control group was 8.12 cm. There was little change at 5 min, 10 min (8.25 cm & 8.75) and 15 min (8.62 cms) (Table II).

Impotent Cases :

Mean penile length increased to 8.98 cms as compared to 5.9 cm initially. Mean penile circumference in case of Psychogenic impotence was 11.26 cms as compared to 8.16 cm initially. Mean penile rigidity on Penrig scale was increased to 75 - 100. Mean duration of full erection was 127 min. In five cases the erection lasted for 240 min. (maximum) while in two cases it lasted for 30-35 min. (minimum) (Table III)

Two cases had adverse side effects in which one case had painful erection, may not be due to PIPE but must be related

to old herpes and one case had pain at the site of injection.

Follow UP :

Four cases out of 30, did not turn up after 2 wks, so could not be followed up. 26 cases were followed up at first week; 18 cases in second week and 15 cases upto third week. Only four cases were available after 4 week and 3 cases after 6 week and only one case was followed upto three months (Table IV)

Success rate :

The success rate in the First week was observed to be 90%. In the Second week it was 76.66%, in the Third week it was 63.33%, Fourth week it was 50% and in Three months follow up it was 6.66% as per the follow up attendance. Only two cases could be available for such long follow up (Table V)

Failure rate : (Table VI)

Achievement of Detumescence :

Table II
PARAMETERS OF CONTROL CASES AND IMPOTENT CASES

S. No.	Age in Years	Initial Penile Length	Initial Penile Circumference	After Injection of Saline						Penile Rigidity
				Penile Length			Penile circumference			
		(cms)	(cms)	5 mts.	10 mts.	15 mts.	5 mts.	10 mts.	15 mts.	
1.	23	7.5	8	7.5	7.5	7.5	8	9	9	Nil
2.	37	7.8	8.5	7.0	7.0	7.0	9.0	9.0	8.5	Nil
3.	42	6.5	7.5	6.5	6.5	6.5	7.5	8.0	8.0	Nil
4.	53	8.0	8.5	8.0	8.0	8.0	8.5	9.0	9.0	Nil
Mean	38.75	7.25	8.12	7.25	7.25	7.25	8.25	8.75	8.62	Nil

S. No. Impotent Males	Mean Initial Penile length	Mean Penile length after PIPE	Mean Initial penile Circumference	Mean peak Circumference After PIPE scale	Rigidity as per Penrig
	(cms)	(cms)	(cms)		
1. Psychogenic group	5.9	8.98	8.16	11.26	75-100
2. Organic group	6.4	9.8	8.1	10.9	75-100

In 73.33% cases detumescence was achieved spontaneously and erection phase was associated with coitus. In 26.66% detumescence was achieved spontaneously even without masturbation or coitus. Not a single

case had priapism or needle aspiration of blood.

Involvement of surgical intervention in impotent males :

Out of 30 cases, 23.33% cases had undergone minor surgical

Table III
DURATION OF FULL ERECTION IN DIFFERENT
CASES AFTER PIPE

Time of full erection (in minutes)	No of cases	Percentage
30-35	2	6.67
56-60	2	6.67
75	1	3.33
90	3	10.00
120	3	10.00
135	1	3.33
150	5	16.66
165	2	6.66
180	4	13.33
210	2	6.67
240	5	16.66

(n=30)

Table IV
FOLLOW UP OF THE PATIENTS DONE IN
WEEKS AND IN 3 MONTHS

No. of Cases	W E E K S					Months 3
	I	II	III	IV	V	
30	30	26	18	15	3	2
	(8)	(3)	(11)	(1)	(2)	(1)
Percentage	100	86	60	50	10	6.67

(n=30)

**Table V
SUCCESS RATE**

No. of Cases	W E E K S				Months 3
	I	II	III	IV	
30	27	23	19	15	2
Percentage	90	76.66	63.66	50	6.66

**Table VI
FAILURE RATE**

Total No. of cases	W E E K S				Months 3
	I	II	III	IV	
30	3	3	3	0	0
Percentage	10	10	10	-	-

(n=30)

**Table VIII
INVOLVEMENT OF SURGICAL INTERVENTION
IN IMPOTENT MALES**

No. of cases Surgery done	No. of cases Surgery advised	No. of cases Surgery Not required
7 23.33%	2 6.67%	21 70%

(n=30)

procedures as a part of their treatment (Table VIII)

DISCUSSION

In our study 85.33% (25 cases) had psychogenic impotence. In this group when PIPE was achieved by 40.2 mg papavarine, it was observed that Mean penile length increased to 8.98 cms after the peak response obtained as compared to 5.9 cm initially (Mean latent period is 1.9 min).

Mean penile circumference in cases of psychogenic impotence was 11.26 cm as compared to 8.16 cm initially. Both these parameters were observed at 5, 10 and 15 minutes showed statistically significant increase in comparison to normal control. The findings of penile circumference changes are not mentioned in earlier studies.

When we consider peak Mean penile rigidity at 5, 10, & 15 min., a significant and satisfactory rigidity on Penrig scale (75-100) was obtained with PIPE with papavarine. The readings in the present study of penile tigrdity in the organic group

are higher probably failure cases are not included in the result as compared to 110.5 + 9 in non-organic group and 65 + 30 in organic group in the study of Virag et al, 1984. The same type of observations were found in the organic group. The mean maximum penile length 9.8 cm was found against 6.4 cm initially, while maximum penile circumference 10.9 cm was observed against initial 8.1 cm sharing the significant rise.

When we consider the mean duration of erection it was found to be 127 min. (Table III). As compared to 2 hrs + 48min. and 2hrs + 15 min. in the study of Virag et al 1984 which matches with the present study.

On following up these cases it was observed that less patients reported for follow up over next 3 months. Majority of cases did not turn up simply for follow up as they responded well and started having spontaneous erection and did not feel the necessity to undergo PIPE again (Table IV). In the study of Cameron &

Table VII
ACHIEVEMENT OF DETUMESCENCE

Cause of Detumescence	No of cases	Percentage
1. Spontaneous associated with coitus	22	73.33
2. Spontaneous without coitus	8	26.66
Total	30	100

(n=30)

Wood ruff 1980 11/13 cases experienced lasting beneficial response after only one dose, quite comparable to the present study.

The success rate achieved at first week was 90% in comparison to Zorngiotti and Lafleur (1985) 95% with 30 mg papavarine, Abber and Associates 60% with 60 mg papavarine.

Detumescence was achieved spontaneously in 100% cases (Table VII). In the study of Sidi and associates detumescence was achieved in 81% cases.

CONCLUSION

PIPE achieved with papavarine is very effective and easy method of treating psychogenic and organic impotence.

Although the results obtained in the organic group are poorer than those obtained in the psychogenic group, but still the procedure is of paramount importance in the treatment of such patients as they would otherwise be considered for nothing less than a penile prosthesis which is exorbitantly costly and complicated operation.

REFERENCES

1. Abber et al, *J Urol.* : 135 : 923, 1986.
2. Cameron L., Woodruff. P. *Brit J. Psych.*, :148:107; 1986.
3. Sidi et al *J. Urol.* : 135: 704; 1986.
4. Virag. R., Ottensen B., Fanrank Sug. J., Wagner. *G. Lancet.* : 11: 1160; 1982.
5. Zorngiotti A. W, Lafleur, R.S. *J. Urol* : 133 :39; 1985.