

# Results

## **Results**

### **Descriptive statistics:**

Thirty male patients with vasculogenic erectile dysfunction were included in this study, their ages ranged between 34 and 63 years with a mean of  $49 \pm 11.45$  years. The patients were divided into two groups based on haemodynamic evaluation, twenty-one patients with arteriogenic erectile dysfunction and nine patients with venogenic erectile dysfunction.

\*Ten patients with psychogenic erectile dysfunction were also included serving as a control.

### **Haemodynamic evaluation:** table (1)

#### **I papaverine test:**

The frequency of distribution of normal and abnormal responses after intracavernous injection of papaverine hydrochloride was E0 in 2 patients, E1 in 8 patients, E2 in 11 patients, E3 in 11 patients, E4 in 2 patients and E5 in 6 patients (table 1).

**II Duplex sonography :**

The combined right and left cavernosal arteries velocities measured by duplex were less than 25 cm/ sec in 21 patients and more than 25 cm / sec in 19 patients. (Table 1).

**III cavernosometry:**

The maintenance rate was less than 20 cm/ min in 31 patients and more than 20 cm / min in 9 patients. (Table 1)

Table (1): Results of papaverine test, duplex and cavernosometry in patients with vasculogenic and psychogenic erectile dysfunction.

|                 |                     | Psychogenic ED<br>(10 cases) | Venogenic ED<br>(9 cases) | Arteriogenic ED<br>(21 cases) |  |
|-----------------|---------------------|------------------------------|---------------------------|-------------------------------|--|
| Papaverine test | E0                  | —                            | —                         | 2                             |  |
|                 | E1                  | —                            | 2                         | 6                             |  |
|                 | E2                  | —                            | 4                         | 7                             |  |
|                 | E3                  | 2                            | 3                         | 6                             |  |
|                 | E4                  | 2                            | —                         | —                             |  |
|                 | E5                  | 6                            | —                         | —                             |  |
| Duplex          | Less than 25 cm/sec | —                            | —                         | 21                            |  |
|                 | More than 25 cm/sec | 10                           | 9                         | —                             |  |
| Cavernosometry  | Less than 20 cm/sec | 10                           | —                         | 21                            |  |
|                 | More than 20 cm/sec | —                            | 9                         | —                             |  |

**Results of cavernous oxygen tension:**

**A-patients with arteriogenic erectile dysfunction:**

During flaccidity. The mean cavernous oxygen tension was 36.47 mm Hg (range 25-46). After 10 minutes of intracavernous injection of papaverine-phentolamine combination, the mean cavernous oxygen tension was 62.52 mmHg (range 48-90). After 20 minutes of drug injection, the mean cavernous oxygen tension was 63.57 mm Hg (range 48-91) and after 30 minutes of drug injection, the mean cavernous oxygen tension was 72.38 mm Hg (range 50-100).

Finally, the mean cavernous oxygen tension of the results after 10,20,30 minutes of intracavernous drug injection in arterial group was 66.11 mm Hg (range 49-92.6). Table (2) Figure (8)

Table (2): Results of cavernous oxygen tension in 21 patients with arteriogenic erectile dysfunction.

| No.        | Cavernous oxygen tension (mm Hg) |                 |        |        |         |
|------------|----------------------------------|-----------------|--------|--------|---------|
|            | Flaccidity (before injection)    | After injection |        |        | Mean    |
|            |                                  | 10 min          | 20 min | 30 min |         |
| 1          | 40                               | 48              | 50     | 54     | 50.6    |
| 2          | 47                               | 60              | 57     | 80     | 65.6    |
| 3          | 28                               | 53              | 48     | 60     | 53.6    |
| 4          | 27                               | 62              | 58     | 70     | 63.3    |
| 5          | 38                               | 50              | 48     | 52     | 50      |
| 6          | 41                               | 67              | 70     | 81     | 72.6    |
| 7          | 38                               | 69              | 53     | 90     | 70.6    |
| 8          | 26                               | 49              | 48     | 50     | 49      |
| 9          | 40                               | 70              | 69     | 90     | 76.3    |
| 10         | 37                               | 53              | 55     | 61     | 56.3    |
| 11         | 25                               | 82              | 90     | 85     | 85.6    |
| 12         | 43                               | 54              | 70     | 82     | 68.6    |
| 13         | 45                               | 62              | 58     | 68     | 62.6    |
| 14         | 37                               | 54              | 67     | 60     | 60.3    |
| 15         | 28                               | 90              | 87     | 92     | 89.6    |
| 16         | 46                               | 55              | 48     | 52     | 51.6    |
| 17         | 32                               | 60              | 59     | 67     | 62      |
| 18         | 36                               | 87              | 91     | 100    | 92.6    |
| 19         | 30                               | 86              | 85     | 92     | 87.6    |
| 20         | 38                               | 53              | 67     | 72     | 64      |
| 21         | 44                               | 49              | 57     | 62     | 56      |
| Mean       | 36.47                            | 62-52           | 63.57  | 72.38  | 66.11   |
| Min - Maxi | 25.46                            | 48-90           | 48-91  | 50-100 | 49-92.6 |

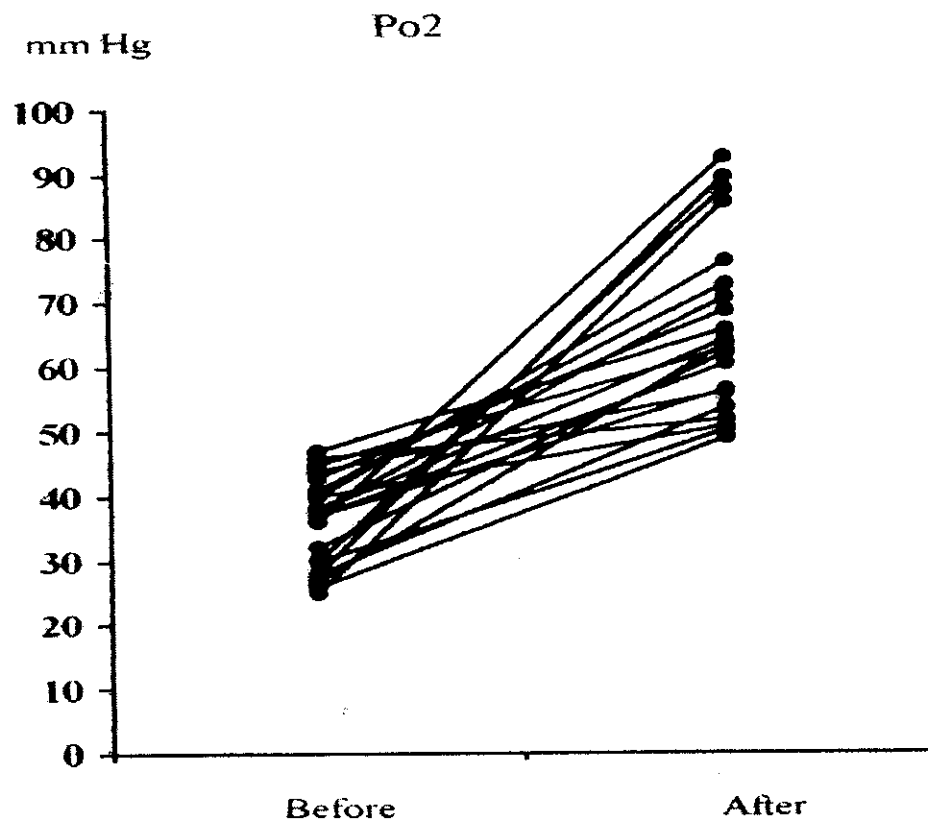


Figure 8: Comparative cavernous oxygen tension values before and after papaverine injection (arterial cases group)

**B-patients with venogenic erectile dysfunction:**

During flaccidity, the mean cavernous oxygen tension was 37.5 mm Hg (range 25-47). After 10 minutes of intracavernous drug injection, the mean cavernous oxygen tension was 62.88 mm Hg (range 52-73). After 20 minutes of drug injection, the mean cavernous oxygen tension was 78.00 mm Hg (range 63-90) and after 30 minutes of drug injection, the mean cavernous oxygen tension was 94.33 mm Hg (range 76-120).

Finally, the mean cavernous oxygen tension of the results after 10,20,30 minutes of intracavernous drug injection in venogenic group was 78.37 mm Hg (range 64-91.6). Table (3), Figure(9)



**Table (3) : Results of cavernous oxygen tension in 9 patients with venogenic erectile dysfunction.**

| No.        | Cavernous oxygen tension (mm Hg) |                 |        |        |         |
|------------|----------------------------------|-----------------|--------|--------|---------|
|            | Flaccidity (Before injection)    | After injection |        |        | Mean    |
|            |                                  | 10 min          | 20 min | 30 min |         |
| 1          | 47                               | 63              | 69     | 78     | 70      |
| 2          | 28                               | 59              | 67     | 88     | 71.3    |
| 3          | 37                               | 70              | 88     | 98     | 85.3    |
| 4          | 48                               | 52              | 64     | 76     | 64      |
| 5          | 47                               | 73              | 89     | 110    | 90.6    |
| 6          | 44                               | 70              | 85     | 120    | 91.6    |
| 7          | 25                               | 52              | 63     | 80     | 65      |
| 8          | 34                               | 59              | 90     | 103    | 84      |
| 9          | 28                               | 68              | 87     | 96     | 83.6    |
| Mean       | 37.5                             | 62.88           | 78     | 94.33  | 78.37   |
| Min - Maxi | 25-47                            | 52-73           | 63-90  | 76-120 | 64-91.6 |

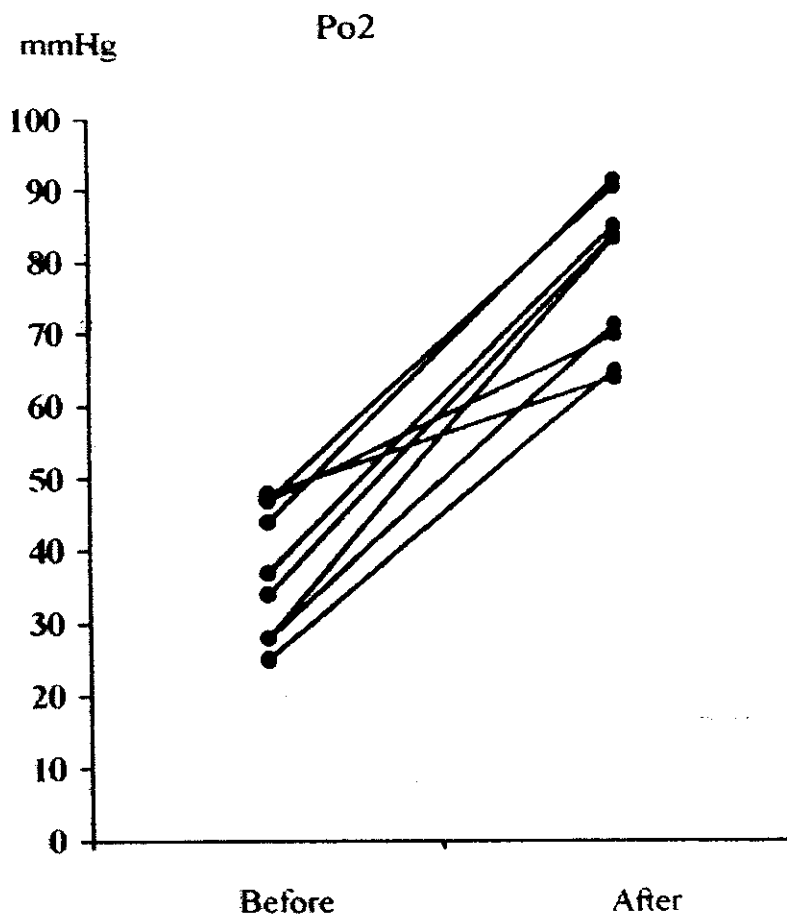


Figure 9: Comparative cavernous oxygen tension values before and after papaverine injection (Venous cases group)

**C-patients with psychogenic erectile dysfunction:**

During flaccidity, the mean cavernous oxygen tension was 35.80 mm Hg (range 26-46). After 10 minutes of intracavernous drug injection, the mean cavernous oxygen tension was 85.30 mm Hg (range 55-103), after 20 minutes of drug injection, the mean cavernous oxygen tension was 90.30 mm Hg (range 63-108) and after 30 minutes of drug injection, the mean cavernous oxygen tension was 100.80 mm Hg (range 78 – 120).

Finally, the mean cavernous oxygen tension of the results after 10,20,30 minutes of intracavernous drug injection in psychogenic group was 92.10 mm Hg (range 65.30 -107.6) Table (4), figure (10).

Table (4) : Results of cavernous oxygen tension in 10 patients with psychogenic erectile dysfunction.

| No.        | Flaccidity (Before injection) | Cavernous oxygen tension (mm Hg) |        |        |              |
|------------|-------------------------------|----------------------------------|--------|--------|--------------|
|            |                               | After injection                  |        |        | Mean         |
|            |                               | 10 min                           | 20 min | 30 min |              |
| 1          | 37                            | 80                               | 85     | 86     | 83.6         |
| 2          | 31                            | 90                               | 87     | 110    | 95.6         |
| 3          | 28                            | 97                               | 108    | 113    | 106          |
| 4          | 36                            | 98                               | 105    | 120    | 107.6        |
| 5          | 43                            | 56                               | 65     | 80     | 67           |
| 6          | 45                            | 55                               | 63     | 78     | 65.3         |
| 7          | 26                            | 93                               | 89     | 107    | 96.3         |
| 8          | 46                            | 103                              | 99     | 101    | 101          |
| 9          | 28                            | 83                               | 97     | 103    | 94.3         |
| 10         | 38                            | 98                               | 105    | 110    | 104.3        |
| Mean       | 35.80                         | 85.30                            | 90.30  | 100.80 | 92.10        |
| Min - Maxi | 26-46                         | 55-103                           | 63-108 | 78-120 | 65.30-107.60 |

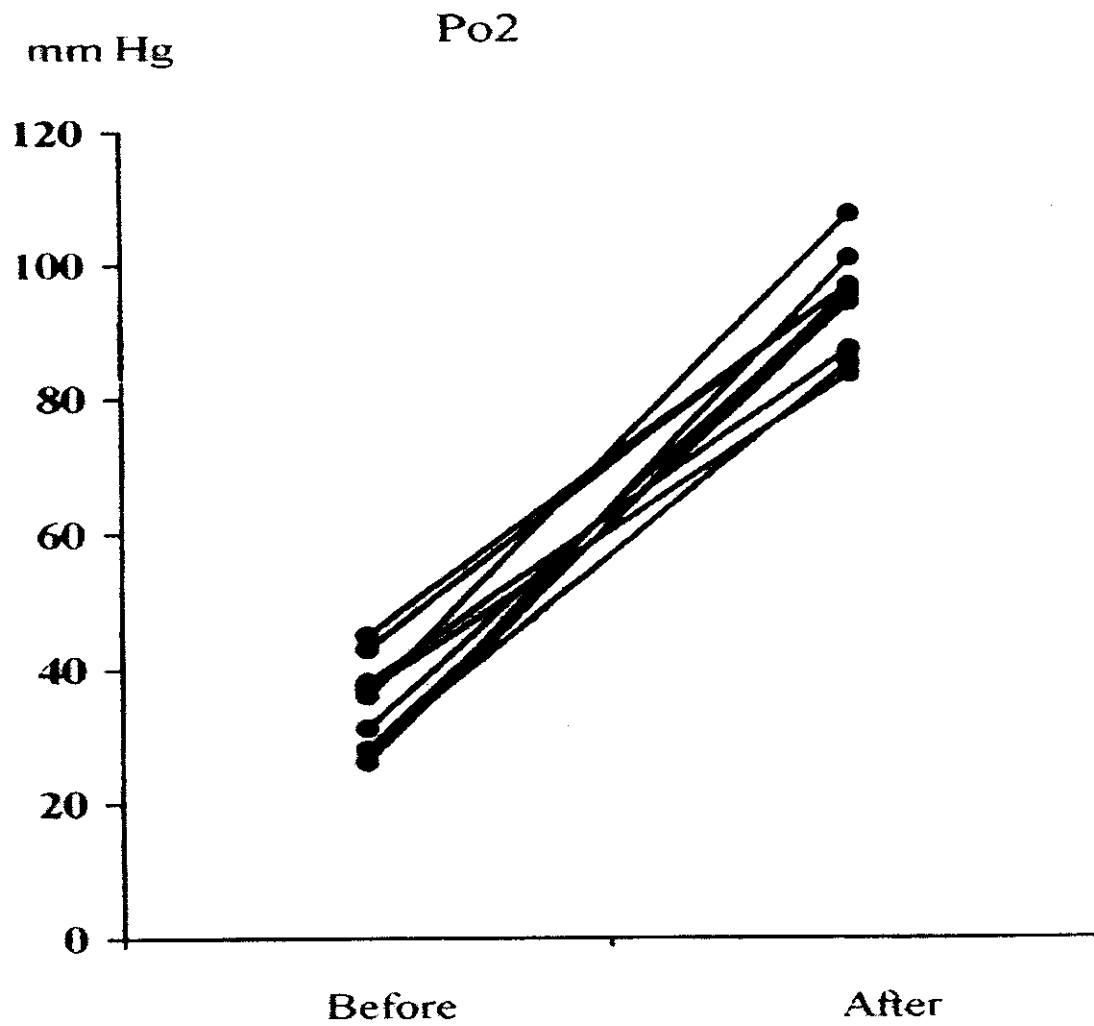


Figure 10: Comparative cavernous oxygen tension values before and after papaverine injection (Psychoginc group)

### **Analytic statistics**

The patients were categorized into three groups, patients with arteriogenic, venogenic and psychogenic erectile dysfunction.

Correlation of the mean cavernous oxygen tension at flaccidity between the three groups showed no significant difference. Figure (11).

**Table (6): correlation of the mean cavernous oxygen tension levels after drug injection between venogenic and psychogenic erectile dysfunction.**

| Patients group | No. of cases | Mean cavernous oxygen tension ( mm. Hg) |
|----------------|--------------|---|
| Venogenic      | 9            | 78.37                                   |
| Psychogenic    | 10           | 92.10                                   |
| P.value        |              | <0.001                                  |

The levels of mean cavernous oxygen tension after drug injection  
Showed a significant correlation between venogenic and psychogenic  
groups. (Figure 11)

**Table (7): correlation of the mean cavernous oxygen tension levels after drug injection between vascular (arteriogenic and venogenic) and psychogenic groups.**

| <b>Patients group</b> | <b>No. of cases</b> | <b>Mean cavernous oxygen tension (mm.Hg)</b> |
|-----------------------|---------------------|--|
| <b>Vascular</b>       | <b>30</b>           | <b>69.79</b>                                 |
| <b>Psychogenic</b>    | <b>10</b>           | <b>92.10</b>                                 |
| <b>P.value</b>        |                     | <b>&lt;0.001</b>                             |

Finally, correlation of the levels of the mean cavernous oxygen tension after drug injection was found to be statistically significant between vascular and psychogenic erectile dysfunction groups.

(Figure 11)



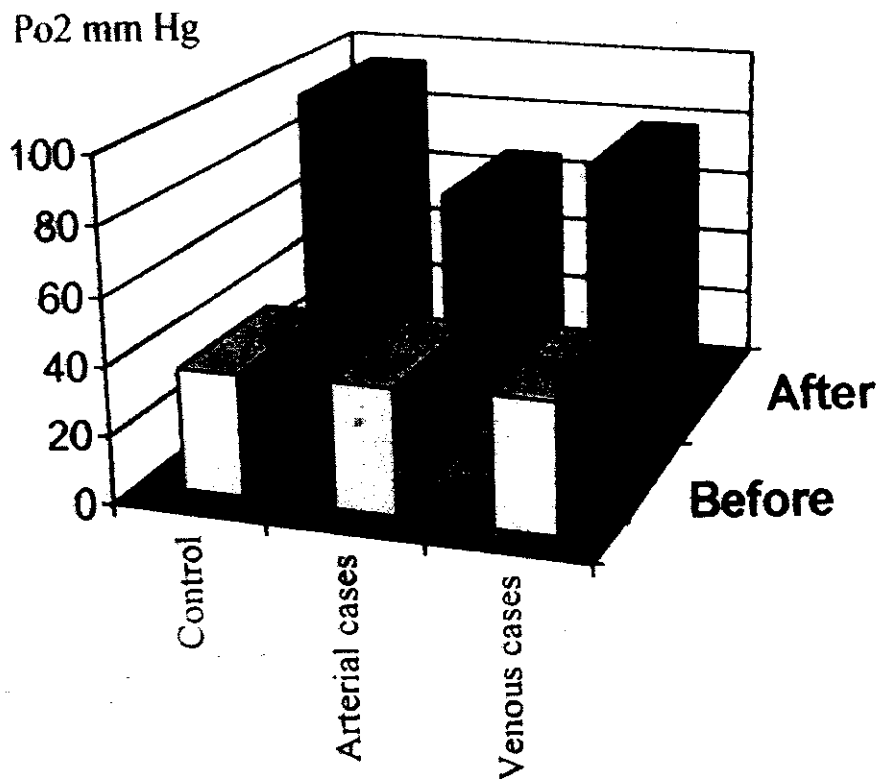


Figure 11: Level of cavernous oxygen tension in the control, arterial and venous cases before and after papaverine injection.