

## RESULTS

This study was carried on 90 patients suffering from chronic tonsillitis with or without adenoid hypertrophy. However, some patients were lost during our study and the post operative evaluation was done for; (a) 23 patients of group I (*non hyper-reactive patients*), (b) 21 patients of group II (*non asthmatic patients with bronchial hyper-reactivity*) and (c) 19 patients of group III (*asthmatic patients*). The results were statistically evaluated.

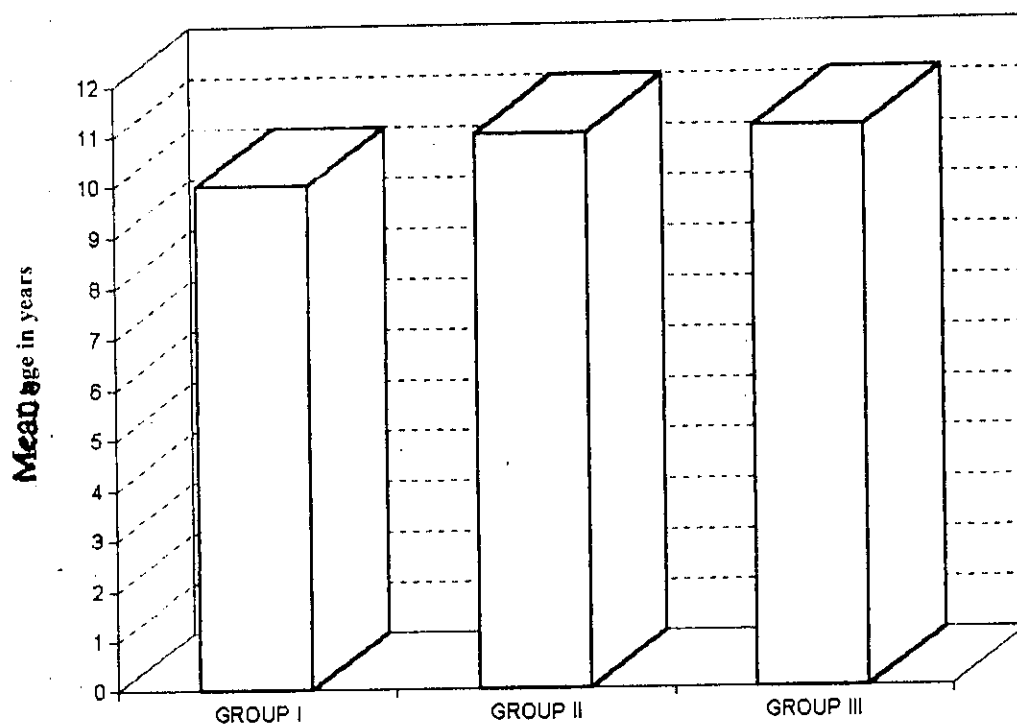
### *Age and Sex Distribution :*

Table (4) shows age and sex distribution of the patients of different groups. In *group I*, the age of the children ranged between 7 and 14 years, the mean average age was  $10 \pm 1.68$  years. Twelve children were males (52%) and eleven children were females (48%). In *group II*, the age of the children ranged between 7 and 14 years, the mean average age was  $11 \pm 2.21$  years. Nine children were males (43%) and twelve children were females (57%). In *group III*, the age of children ranged between 7 and 14 years, the mean average age was  $11.1 \pm 2.13$  years. Eight children were males (42%) and eleven children were females (58%).

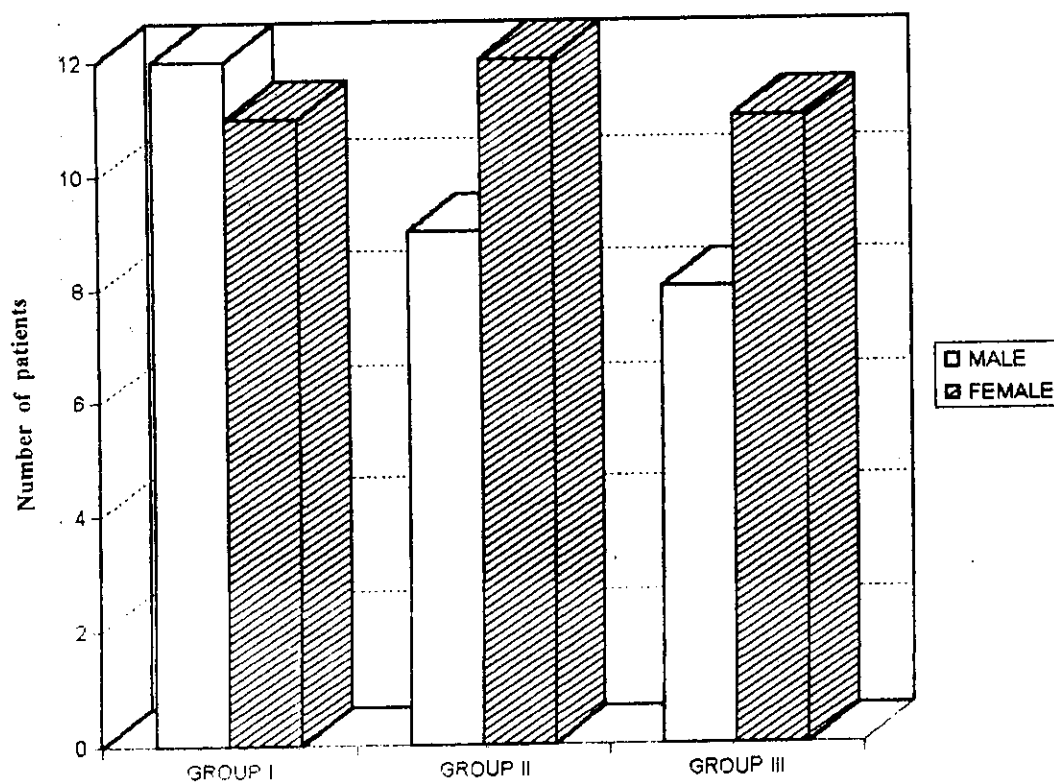
**Table (4) : Patients' Age and Sex Distribution in Different Groups**

|           | Age   |           |            | Sex  |        | Total Number |
|-----------|-------|-----------|------------|------|--------|--------------|
|           | Range | $\bar{X}$ | S.D. $\pm$ | Male | Female |              |
| Group I   | 7-14  | 10        | 1.68       | 12   | 11     | 23           |
| Group II  | 7-14  | 11        | 2.21       | 9    | 12     | 21           |
| Group III | 7-14  | 11.1      | 2.13       | 8    | 11     | 19           |

**FIG. (6): AGE DISTRIBUTION IN DIFFERENT GROUPS**



**FIG. (7) : SEX DISTRIBUTION IN DIFFERENT GROUPS**



***The Type of Surgical Procedure (Table 5) :***

*In group I*, 5 children (22%) underwent adenoidectomy, 6 children (26%) underwent tonsillectomy and 12 children (52%) underwent adenotonsillectomy.

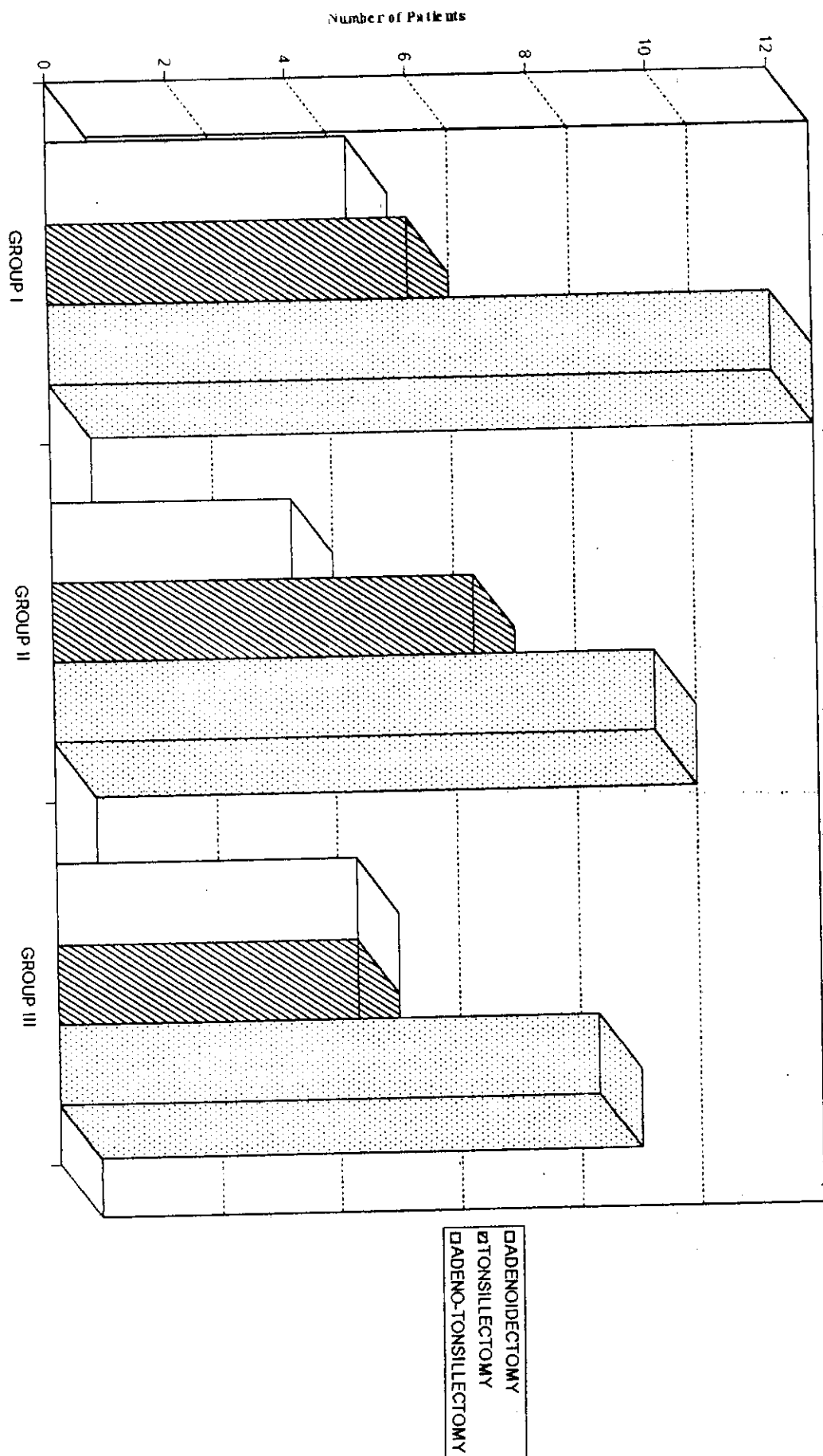
*In group II*, 4 children (19%) underwent adenoidectomy, 7 children (33%) underwent tonsillectomy and 10 children (48%) underwent adenotonsillectomy.

*In group III*, 5 children (26%) underwent adenoidectomy, 5 children (26%) underwent tonsillectomy and 9 children (48%) underwent adenotonsillectomy.

**Table (5) : Type of Surgical Procedure**

| Surgical Procedure | Group I | Group II | Group III |
|--------------------|---------|----------|-----------|
| Adenoidectomy      | 5       | 4        | 5         |
| Tonsillectomy      | 6       | 7        | 5         |
| Adenotonsillectomy | 12      | 10       | 9         |
| Total              | 23      | 21       | 19        |

FIG. (8) : TYPE OF SURGICAL PROCEDURE



### ***Ventilatory Function Tests :***

- (1) The forced vital capacity (FVC) expressed as % of predicted value.
- 2) The forced expiratory volume in the first second (FEV<sub>1</sub>) % of predicted value.
- (3) FEV<sub>1</sub> % of the patient's FVC.
- 4) The forced expiratory flow rates (FEF) (also, expressed as % of predicted values).
  - \* FEF<sub>max</sub> = Forced expiratory flow rate at maximal FVC.
  - \* FEF<sub>25-75%</sub> = Forced expiratory flow rate between 25% and 75% of FVC
  - \* FEF 25%, FEF 50% and FEF 75%.

### ***Group I :***

Table (6) shows the ventilatory functions in group I before and two months after tonsillectomy and/or adenoidectomy. There was no significant difference between the ventilatory function tests before and two months after surgery.

Table (6a) shows that the mean FVC before surgery was  $90.3 \pm 5.7$  and two months after surgery was  $90.5 \pm 5.8$ . The difference is statistically non significant.

Table (6b) shows that the mean FEV<sub>1</sub> was  $87.8 \pm 5.6$  before surgery and  $88.1 \pm 7.7$  two months after surgery. The difference is statistically non significant.

Table (6c) shows that the mean of FEV<sub>1</sub>/FVC % before surgery was  $88.2 \pm 4.1$  and two months after surgery was  $88.7 \pm 5.2$ . The difference is statistically non significant.

Table (6d) shows that the mean  $FEF_{25-75\%}$  was  $85.2 \pm 5.8$  before surgery and  $86.3 \pm 8$  two months after surgery. The difference is statistically non significant.

Table (6e) shows that the mean  $FEF_{max}$  was  $79.9 \pm 4.5$  before surgery and  $79.9 \pm 5.1$  two months after surgery. There is no statistical difference in  $FEF_{max}$ .

Table (6f) shows that the mean  $FEF_{25\%}$  before surgery was  $81.2 \pm 7.4$  and two months after surgery was  $81.2 \pm 7.1$ . The difference is statistically non significant.

Table (6g) shows that the mean  $FEF_{50\%}$  before surgery was  $81.5 \pm 6.2$  and two months after surgery was  $82.1 \pm 8.7$ . The difference is statistically non significant.

Table (6h) shows that the mean  $FEF_{75\%}$  before surgery was  $83 \pm 6.2$  and two months after surgery was  $82.9 \pm 8.5$ . The difference is statistically non significant.

Fig. (9) shows the ventilatory functions in group I before and two months after tonsillectomy and/or adenoidectomy.

**(Table 6) : Ventilatory function study of group (I)  
before and two months after surgery**

**Table (6 a) Showing : Forced Vital Capacity (FVC)**

| Case No.     | Predicted value | Before          |                  | After        |                  |
|--------------|-----------------|-----------------|------------------|--------------|------------------|
|              |                 | Actual value    | % from predicted | Actual value | % from predicted |
| 1            | 1.89            | 1.8             | 95               | 1.7          | 90               |
| 2            | 1.24            | 1.14            | 92               | 1.22         | 98               |
| 3            | 1.35            | 1.3             | 96               | 1.3          | 96               |
| 4            | 1.24            | 1.02            | 82               | 1.22         | 98               |
| 5            | 2.02            | 1.92            | 95               | 1.94         | 96               |
| 6            | 2.11            | 1.73            | 82               | 1.77         | 84               |
| 7            | 1.61            | 1.55            | 96               | 1.48         | 92               |
| 8            | 1.24            | 1.2             | 97               | 1.19         | 96               |
| 9            | 2.04            | 2               | 99               | 1.94         | 96               |
| 10           | 1.89            | 1.64            | 87               | 1.83         | 97               |
| 11           | 2.11            | 1.8             | 85               | 1.69         | 80               |
| 12           | 2.02            | 1.9             | 94               | 1.9          | 94               |
| 13           | 2.11            | 1.72            | 82               | 1.77         | 84               |
| 14           | 1.35            | 1.15            | 85               | 1.15         | 85               |
| 15           | 1.24            | 1.18            | 95               | 1.05         | 86               |
| 16           | 1.35            | 1.31            | 97               | 1.31         | 97               |
| 17           | 1.89            | 1.7             | 90               | 1.6          | 85               |
| 18           | 2.47            | 1.99            | 81               | 1.99         | 81               |
| 19           | 1.89            | 1.66            | 88               | 1.66         | 88               |
| 20           | 1.35            | 1.28            | 95               | 1.28         | 95               |
| 21           | 2.99            | 2.63            | 88               | 2.63         | 88               |
| 22           | 2.5             | 2.27            | 91               | 2.25         | 90               |
| 23           | 1.89            | 1.6             | 85               | 1.6          | 85               |
| Mean         |                 | 90.3            |                  | 90.5         |                  |
| SD. $\pm$    |                 | 5.7             |                  | 5.8          |                  |
| SE. $\pm$    |                 | 1.2             |                  | 1.2          |                  |
| t. value     |                 | 0.88            |                  |              |                  |
| p. value     |                 | > 0.05          |                  |              |                  |
| Significance |                 | Non significant |                  |              |                  |

**Table (6 b) Showing : Forced expiratory volume of one second ( $FEV_1$ )**

| Case No.     | Predicted value | Before          |                  | After        |                  |
|--------------|-----------------|-----------------|------------------|--------------|------------------|
|              |                 | Actual value    | % from predicted | Actual value | % from predicted |
| 1            | 1.7             | 1.36            | 80               | 1.63         | 96               |
| 2            | 1.15            | 1.04            | 90               | 1.12         | 97               |
| 3            | 1.22            | 1.15            | 94               | 1.16         | 95               |
| 4            | 1.15            | 0.92            | 80               | 0.93         | 81               |
| 5            | 1.83            | 1.68            | 92               | 1.68         | 92               |
| 6            | 1.9             | 1.55            | 82               | 1.58         | 83               |
| 7            | 1.44            | 1.32            | 92               | 1.41         | 98               |
| 8            | 1.15            | 1.05            | 91               | 1.04         | 90               |
| 9            | 1.83            | 1.75            | 96               | 1.72         | 94               |
| 10           | 1.7             | 1.36            | 80               | 1.63         | 96               |
| 11           | 1.9             | 1.6             | 84               | 1.33         | 70               |
| 12           | 1.83            | 1.6             | 87               | 1.59         | 87               |
| 13           | 1.9             | 1.55            | 82               | 1.6          | 84               |
| 14           | 1.22            | 0.99            | 81               | 0.99         | 81               |
| 15           | 1.15            | 1.06            | 92               | 0.84         | 73               |
| 16           | 1.22            | 1.11            | 91               | 1.11         | 91               |
| 17           | 1.7             | 1.53            | 90               | 1.4          | 85               |
| 18           | 2.22            | 1.78            | 80               | 1.78         | 80               |
| 19           | 1.7             | 1.6             | 94               | 1.6          | 94               |
| 20           | 1.22            | 1.12            | 92               | 1.12         | 92               |
| 21           | 2.76            | 2.56            | 94               | 2.6          | 94               |
| 22           | 2.22            | 2.01            | 91               | 2.0          | 90               |
| 23           | 1.7             | 1.4             | 84               | 1.4          | 84               |
| Mean         |                 | 87.8            |                  | 88.1         |                  |
| SD. $\pm$    |                 | 5.6             |                  | 7.7          |                  |
| SE. $\pm$    |                 | 1.2             |                  | 1.6          |                  |
| t. value     |                 | 0.23            |                  |              |                  |
| p. value     |                 | > 0.05          |                  |              |                  |
| Significance |                 | Non significant |                  |              |                  |

**Table (6 c) Showing : ( $FEV_1$  / FVC %)**

| Case No.     | Predicted value | Before          |                  | After        |                  |
|--------------|-----------------|-----------------|------------------|--------------|------------------|
|              |                 | Actual value    | % from predicted | Actual value | % from predicted |
| 1            | 90              | 76              | 84               | 96           | 106              |
| 2            | 92              | 91              | 99               | 92           | 100              |
| 3            | 90              | 88              | 98               | 92           | 102              |
| 4            | 92              | 90              | 98               | 76           | 83               |
| 5            | 91              | 88              | 97               | 87           | 95               |
| 6            | 90              | 89              | 99               | 89           | 99               |
| 7            | 91              | 85              | 93               | 95           | 105              |
| 8            | 93              | 88              | 94               | 87           | 94               |
| 9            | 91              | 88              | 97               | 89           | 98               |
| 10           | 90              | 83              | 92               | 89           | 99               |
| 11           | 90              | 89              | 99               | 79           | 88               |
| 12           | 91              | 84              | 93               | 84           | 92               |
| 13           | 90              | 90              | 100              | 90           | 100              |
| 14           | 90              | 86              | 95               | 86           | 96               |
| 15           | 92              | 90              | 97               | 85           | 87               |
| 16           | 90              | 85              | 94               | 85           | 94               |
| 17           | 90              | 90              | 100              | 90           | 100              |
| 18           | 90              | 88              | 98               | 89           | 99               |
| 19           | 90              | 96              | 107              | 96           | 107              |
| 20           | 90              | 88              | 97               | 88           | 97               |
| 21           | 89              | 96              | 108              | 99           | 111              |
| 22           | 89              | 89              | 100              | 89           | 100              |
| 23           | 90              | 89              | 97               | 89           | 99               |
| Mean         |                 | 88.2            |                  | 88.7         |                  |
| SD. $\pm$    |                 | 4.1             |                  | 5.2          |                  |
| SE. $\pm$    |                 | 0.9             |                  | 1.1          |                  |
| t. value     |                 | 0.46            |                  |              |                  |
| p. value     |                 | > 0.05          |                  |              |                  |
| Significance |                 | Non-significant |                  |              |                  |

**Table (6 d) Showing : Forced expiratory flow rate at 25 -75% ( $FEF_{25-75\%}$ )**

| Case No.     | Predicted value | Before          |                  | After        |                  |
|--------------|-----------------|-----------------|------------------|--------------|------------------|
|              |                 | Actual value    | % from predicted | Actual value | % from predicted |
| 1            | 2.11            | 1.7             | 80               | 2.07         | 98               |
| 2            | 1.53            | 1.44            | 94               | 1.44         | 94               |
| 3            | 1.7             | 1.61            | 95               | 1.6          | 94               |
| 4            | 1.53            | 1.4             | 92               | 1.41         | 92               |
| 5            | 2.4             | 2.05            | 85               | 2.04         | 85               |
| 6            | 2.48            | 1.9             | 77               | 1.96         | 79               |
| 7            | 1.8             | 1.53            | 85               | 1.78         | 99               |
| 8            | 1.53            | 1.4             | 92               | 1.41         | 92               |
| 9            | 2.4             | 2               | 83               | 2.11         | 88               |
| 10           | 2.11            | 1.69            | 80               | 2.09         | 99               |
| 11           | 2.98            | 2.1             | 85               | 1.78         | 72               |
| 12           | 2.4             | 2.1             | 88               | 1.75         | 86               |
| 13           | 2.48            | 1.86            | 75               | 1.86         | 75               |
| 14           | 1.7             | 1.31            | 77               | 1.31         | 77               |
| 15           | 1.53            | 1.3             | 85               | 1.13         | 74               |
| 16           | 1.7             | 1.56            | 92               | 1.56         | 92               |
| 17           | 2.11            | 1.94            | 92               | 1.9          | 90               |
| 18           | 2.81            | 2.35            | 83               | 2.33         | 83               |
| 19           | 2.11            | 1.67            | 80               | 1.68         | 80               |
| 20           | 1.7             | 1.45            | 85               | 1.45         | 85               |
| 21           | 3.26            | 2.93            | 90               | 2.77         | 85               |
| 22           | 2.5             | 2               | 80               | 2.00         | 80               |
| 23           | 2.11            | 1.79            | 85               | 1.79         | 85               |
| Mean         |                 | 85.2            |                  | 86.3         |                  |
| SD. $\pm$    |                 | 5.8             |                  | 8            |                  |
| SE. $\pm$    |                 | 1.2             |                  | 1.7          |                  |
| t. value     |                 | 0.68            |                  |              |                  |
| p. value     |                 | > 0.05          |                  |              |                  |
| Significance |                 | Non-significant |                  |              |                  |

**Table (6 e) Showing : Forced expiratory flow rate max. ( $FEF_{max}$ ).**

| Case No.     | Predicted value | Before          |                  | After        |                  |
|--------------|-----------------|-----------------|------------------|--------------|------------------|
|              |                 | Actual value    | % from predicted | Actual value | % from predicted |
| 1            | 4.41            | 3.29            | 75               | 3.31         | 75               |
| 2            | 3.06            | 2.85            | 93               | 2.85         | 93               |
| 3            | 3.4             | 2.9             | 85               | 2.89         | 85               |
| 4            | 3.06            | 2.6             | 85               | 2.57         | 84               |
| 5            | 4.56            | 3.6             | 79               | 3.6          | 79               |
| 6            | 4.73            | 3.6             | 76               | 3.78         | 80               |
| 7            | 3.4             | 2.8             | 82               | 2.86         | 84               |
| 8            | 3.06            | 2.5             | 82               | 2.5          | 82               |
| 9            | 4.56            | 3.6             | 79               | 3.65         | 80               |
| 10           | 4.41            | 3.53            | 80               | 3.75         | 85               |
| 11           | 4.73            | 3.9             | 82               | 3.26         | 69               |
| 12           | 4.56            | 3.4             | 75               | 3.47         | 76               |
| 13           | 4.73            | 3.7             | 78               | 3.78         | 80               |
| 14           | 3.4             | 2.72            | 80               | 2.78         | 82               |
| 15           | 3.06            | 2.42            | 79               | 2.32         | 76               |
| 16           | 3.4             | 2.79            | 82               | 2.79         | 82               |
| 17           | 4.41            | 3.75            | 85               | 3.7          | 84               |
| 18           | 5.42            | 4.13            | 76               | 4.12         | 76               |
| 19           | 4.41            | 3.22            | 73               | 3.22         | 73               |
| 20           | 3.4             | 2.7             | 79               | 2.58         | 76               |
| 21           | 6.37            | 5.09            | 80               | 5.22         | 82               |
| 22           | 5.65            | 4.16            | 74               | 4.18         | 74               |
| 23           | 4.41            | 3.44            | 78               | 1.13         | 80               |
| Mean         |                 | 79.9            |                  | 79.9         |                  |
| SD. $\pm$    |                 | 4.5             |                  | 5.1          |                  |
| SE. $\pm$    |                 | 0.9             |                  | 1.1          |                  |
| t. value     |                 | 0               |                  |              |                  |
| p. value     |                 | > 0.05          |                  |              |                  |
| Significance |                 | Non-significant |                  |              |                  |

**Table (6 f) Showing : Forced expiratory flow rate at 25% ( $FEF_{25\%}$ )**

| Case No.     | Predicted value | Before          |                  | After        |                  |
|--------------|-----------------|-----------------|------------------|--------------|------------------|
|              |                 | Actual value    | % from predicted | Actual value | % from predicted |
| 1            | 3.52            | 3.23            | 92               | 2.24         | 92               |
| 2            | 2.1             | 1.62            | 77               | 1.62         | 77               |
| 3            | 2.33            | 1.8             | 77               | 1.77         | 76               |
| 4            | 2.1             | 1.6             | 76               | 1.6          | 76               |
| 5            | 4.03            | 3.59            | 89               | 3.59         | 89               |
| 6            | 4.11            | 3.08            | 75               | 3.08         | 75               |
| 7            | 2.08            | 1.95            | 94               | 1.87         | 90               |
| 8            | 2.1             | 1.55            | 74               | 1.6          | 76               |
| 9            | 4.03            | 3.55            | 88               | 3.63         | 90               |
| 10           | 3.52            | 3.36            | 95               | 3.34         | 95               |
| 11           | 4.11            | 3.29            | 80               | 3.04         | 74               |
| 12           | 4.03            | 3.5             | 87               | 3.47         | 86               |
| 13           | 4.11            | 3.49            | 85               | 2.79         | 86               |
| 14           | 2.33            | 1.86            | 80               | 1.86         | 80               |
| 15           | 2.1             | 1.87            | 74               | 1.5          | 72               |
| 16           | 2.33            | 1.73            | 74               | 1.72         | 74               |
| 17           | 3.52            | 2.68            | 76               | 2.68         | 76               |
| 18           | 4.75            | 4.1             | 86               | 4.09         | 86               |
| 19           | 3.52            | 2.53            | 72               | 2.06         | 74               |
| 20           | 2.33            | 2.07            | 89               | 2.07         | 89               |
| 21           | 5.34            | 3.95            | 74               | 4.06         | 76               |
| 22           | 4.8             | 3.51            | 73               | 3.74         | 78               |
| 23           | 3.52            | 2.82            | 80               | 2.78         | 79               |
| Mean         |                 | 81.2            |                  | 81.2         |                  |
| SD. $\pm$    |                 | 7.4             |                  | 7.1          |                  |
| SE. $\pm$    |                 | 1.5             |                  | 1.5          |                  |
| t. value     |                 | 0.1             |                  |              |                  |
| p. value     |                 | > 0.05          |                  |              |                  |
| Significance |                 | Non-significant |                  |              |                  |

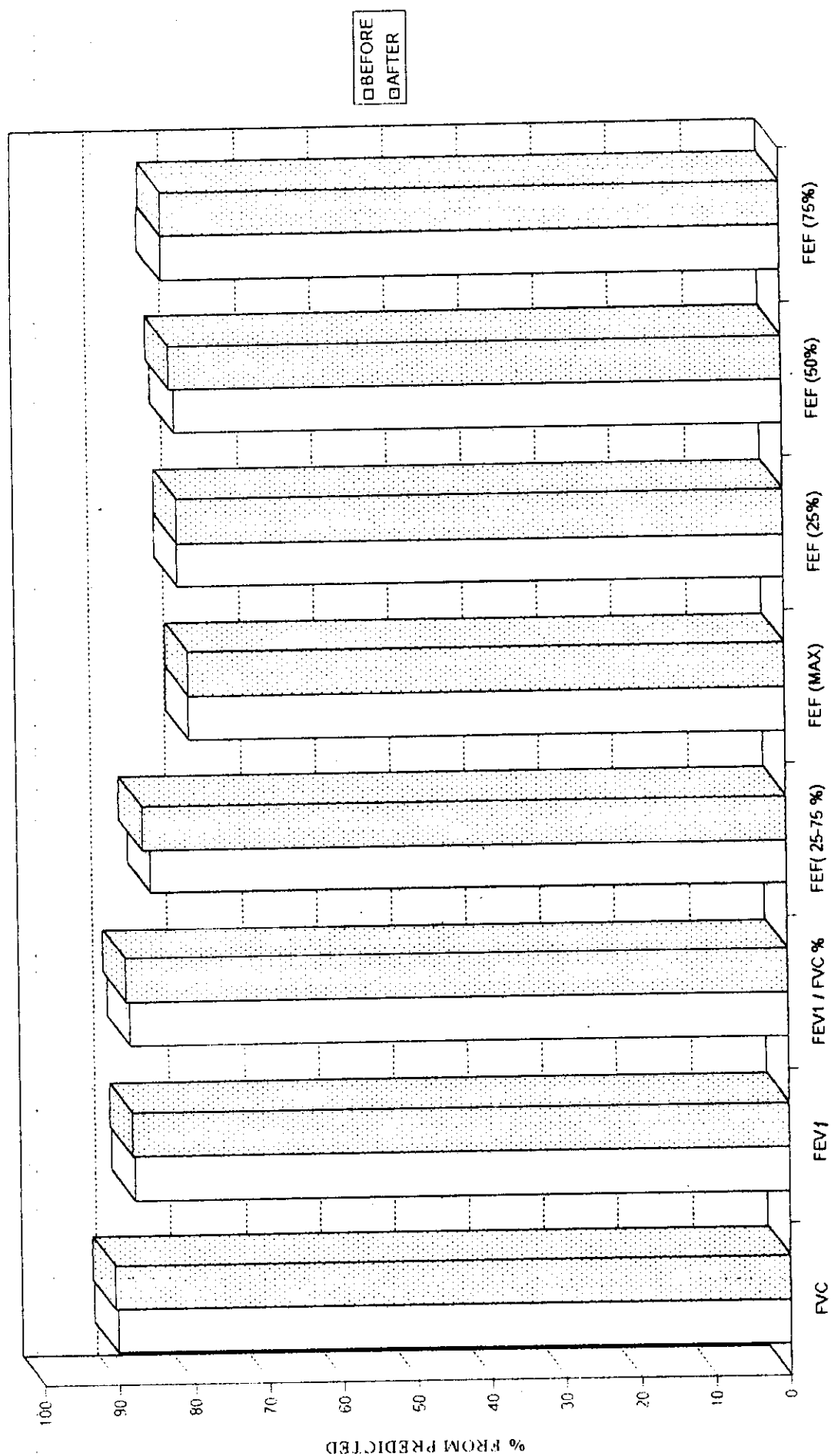
**Table (6 g ) Showing : Forced expiratory flow rate at 50% ( $FEF_{50\%}$ )**

| Case No.     | Predicted value | Before          |                  | After        |                  |
|--------------|-----------------|-----------------|------------------|--------------|------------------|
|              |                 | Actual value    | % from predicted | Actual value | % from predicted |
| 1            | 2.46            | 2.34            | 95               | 2.34         | 95               |
| 2            | 1.44            | 1.15            | 80               | 1.43         | 99               |
| 3            | 1.7             | 1.33            | 78               | 1.67         | 98               |
| 4            | 1.44            | 1.22            | 85               | 1.18         | 82               |
| 5            | 3.28            | 2.56            | 78               | 2.6          | 80               |
| 6            | 3.35            | 2.7             | 80               | 2.34         | 72               |
| 7            | 1.4             | 1.2             | 86               | 1.18         | 84               |
| 8            | 1.44            | 1.18            | 82               | 1.41         | 98               |
| 9            | 3.28            | 2.75            | 84               | 2.46         | 75               |
| 10           | 2.46            | 2.32            | 94               | 2.31         | 94               |
| 11           | 3.35            | 2.48            | 74               | 2.41         | 72               |
| 12           | 3.28            | 2.7             | 82               | 2.36         | 72               |
| 13           | 3.35            | 2.68            | 80               | 2.71         | 81               |
| 14           | 1.7             | 1.28            | 75               | 1.28         | 75               |
| 15           | 1.44            | 1.01            | 70               | 1.08         | 75               |
| 16           | 1.7             | 1.28            | 75               | 1.29         | 76               |
| 17           | 2.46            | 2.1             | 85               | 2.02         | 82               |
| 18           | 3.86            | 2.95            | 76               | 2.94         | 76               |
| 19           | 2.46            | 2.02            | 82               | 1.97         | 80               |
| 20           | 1.7             | 1.39            | 82               | 1.39         | 82               |
| 21           | 4.32            | 3.92            | 91               | 3.46         | 80               |
| 22           | 3.32            | 2.78            | 84               | 2.72         | 82               |
| 23           | 2.46            | 1.87            | 76               | 1.92         | 78               |
| Mean         |                 | 81.5            |                  | 82.1         |                  |
| SD. $\pm$    |                 | 6.2             |                  | 8.7          |                  |
| SE. $\pm$    |                 | 1.3             |                  | 1.8          |                  |
| t. value     |                 | 0.36            |                  |              |                  |
| p. value     |                 | > 0.05          |                  |              |                  |
| Significance |                 | Non-significant |                  |              |                  |

**Table (6 h) Showing : Forced expiratory flow rate at 75% ( $FEF_{75\%}$ )**

| Case No.     | Predicted value | Before          |                  | After        |                  |
|--------------|-----------------|-----------------|------------------|--------------|------------------|
|              |                 | Actual value    | % from predicted | Actual value | % from predicted |
| 1            | 1.71            | 1.54            | 90               | 1.64         | 96               |
| 2            | 1.19            | 1.15            | 90               | 1.12         | 94               |
| 3            | 1.32            | 1.19            | 90               | 1.24         | 94               |
| 4            | 1.19            | 1.04            | 90               | 1.12         | 94               |
| 5            | 2.22            | 1.9             | 86               | 1.86         | 84               |
| 6            | 2.22            | 1.86            | 84               | 1.78         | 80               |
| 7            | 1.19            | 1.05            | 88               | 0.96         | 81               |
| 8            | 1.19            | 0.98            | 82               | 1.05         | 88               |
| 9            | 2.22            | 1.89            | 85               | 1.78         | 80               |
| 10           | 1.71            | 1.6             | 94               | 1.61         | 94               |
| 11           | 2.22            | 1.69            | 76               | 1.64         | 74               |
| 12           | 2.22            | 1.86            | 84               | 1.78         | 80               |
| 13           | 2.22            | 1.6             | 72               | 1.64         | 74               |
| 14           | 1.32            | 1.06            | 80               | 1.03         | 78               |
| 15           | 1.19            | 1.0             | 82               | 0.83         | 70               |
| 16           | 1.32            | 1.08            | 82               | 1.21         | 92               |
| 17           | 1.71            | 1.54            | 90               | 1.64         | 96               |
| 18           | 2.5             | 1.8             | 72               | 1.9          | 76               |
| 19           | 1.71            | 1.35            | 79               | 1.37         | 80               |
| 20           | 1.32            | 1.05            | 80               | 1.03         | 78               |
| 21           | 2.64            | 2.12            | 80               | 1.98         | 75               |
| 22           | 2.09            | 1.55            | 74               | 1.59         | 76               |
| 23           | 1.71            | 1.37            | 80               | 1.27         | 74               |
| Mean         |                 | 83              |                  | 82.9         |                  |
| SD. $\pm$    |                 | 6.2             |                  | 8.5          |                  |
| SE. $\pm$    |                 | 1.2             |                  | 1.8          |                  |
| t. value     |                 | 0.08            |                  |              |                  |
| p. value     |                 | > 0.05          |                  |              |                  |
| Significance |                 | Non-significant |                  |              |                  |

FIG. (9) : STATISTICAL ANALYSIS OF VENTILATORY FUNCTIONS IN GROUP I BEFORE AND TWO MONTHS AFTER SURGERY



### ***Group II :***

Table (7) shows the ventilatory functions in group II before and two months after tonsillectomy and/or adenoidectomy. There is significant increase in the ventilatory functions two months after surgery except for the  $FEV_1/FVC$  % which shows non significant increase.

Table (7a) shows that the mean FVC before surgery was  $82.3 \pm 3.7$  and two months after surgery was  $86 \pm 4.6$ . The difference is statistically significant ( $P < 0.05$ ).

Table (7b) shows that the mean  $FEV_1$  before surgery was  $80.3 \pm 4.2$  and two months after surgery was  $84.4 \pm 5.9$ . The difference is statistically significant ( $P < 0.05$ ).

Table (7c) shows that the mean  $FEV_1/FVC$  % before surgery was  $87.7 \pm 5$  and two months after surgery was  $88.2 \pm 3.8$ . This difference is statistically non significant ( $P > 0.05$ ).

Table (7d) shows that the mean  $FEF_{25-75\%}$  before surgery was  $77.8 \pm 4.4$  and two months after surgery was  $80.7 \pm 5.8$ . The difference is statistically significant.

Table (7e) shows that the mean  $FEF_{max}$  before surgery was  $74.6 \pm 2.9$  and two months after surgery was  $77.5 \pm 3.9$ . The difference is statistically significant.

Table (7f) shows that the mean  $FEF_{25\%}$  was  $76.8 \pm 3.1$  before surgery and two months after surgery was  $82.7 \pm 4.4$ . The difference is statistically significant.

Table (7g) shows that the mean  $FEF_{50\%}$  was  $77.4 \pm 3.7$  before surgery and two months after surgery was  $81.5 \pm 5.2$ . The difference is statistically significant.

Table (7h) shows that the mean  $FEF_{75\%}$  was  $74.8 \pm 3.7$  before surgery and two months after surgery was  $78.4 \pm 4.6$ . The difference is statistically significant.

Table (8) shows no statistical difference in the ventilatory functions between the patients underwent adenoidectomy, tonsillectomy or adenotonsillectomy before surgery.

Table (9) shows no statistical difference in the ventilatory functions between the patients underwent adenoidectomy, tonsillectomy or adenotonsillectomy two months after surgery.

Fig. (10) shows the ventilatory functions in group II before and two months after tonsillectomy and/or adenoidectomy.

**(Table 7) : Ventilatory function study of group (II)  
before and two months after surgery**

**Table (7 a) Showing : Forced Vital Capacity (FVC)**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 2.33            | 1.75         | 75               | 1.86         | 80               |
| 2            | 1.89            | 1.5          | 80               | 1.72         | 91               |
| 3            | 2.11            | 1.88         | 89               | 1.9          | 90               |
| 4            | 1.61            | 1.29         | 80               | 1.29         | 80               |
| 5            | 2.47            | 2.0          | 80               | 1.93         | 78               |
| 6            | 2.02            | 1.61         | 80               | 1.66         | 82               |
| 7            | 2.33            | 1.9          | 82               | 1.96         | 84               |
| 8            | 1.24            | 1.0          | 80               | 1.08         | 87               |
| 9            | 1.89            | 1.58         | 84               | 1.7          | 90               |
| 10           | 1.60            | 1.45         | 90               | 1.51         | 94               |
| 11           | 2.50            | 2.0          | 80               | 2.25         | 90               |
| 12           | 2.99            | 2.45         | 82               | 2.6          | 87               |
| 13           | 2.33            | 1.91         | 82               | 1.91         | 82               |
| 14           | 2.11            | 1.69         | 80               | 1.81         | 86               |
| 15           | 2.02            | 1.8          | 89               | 1.78         | 88               |
| 16           | 2.47            | 2.1          | 85               | 1.98         | 80               |
| 17           | 3.66            | 3.29         | 80               | 3.11         | 85               |
| 18           | 1.24            | 1.05         | 85               | 1.07         | 86               |
| 19           | 1.35            | 1.08         | 80               | 1.24         | 92               |
| 20           | 2.39            | 1.91         | 80               | 2.01         | 84               |
| 21           | 2.5             | 2.13         | 85               | 2.27         | 91               |
| Mean         |                 | 82.3         |                  | 86           |                  |
| SD. $\pm$    |                 | 3.7          |                  | 4.6          |                  |
| SE. $\pm$    |                 | 0.8          |                  | 1            |                  |
| t. value     |                 | 4            |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (7 b) Showing : Forced expiratory volume of one second ( $FEV_1$ )**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 2.1             | 1.64         | 78               | 1.72         | 82               |
| 2            | 1.7             | 1.36         | 80               | 1.56         | 92               |
| 3            | 1.9             | 1.6          | 84               | 1.71         | 90               |
| 4            | 1.44            | 1.22         | 85               | 1.22         | 85               |
| 5            | 2.22            | 1.78         | 80               | 1.6          | 72               |
| 6            | 1.83            | 1.45         | 79               | 1.48         | 81               |
| 7            | 2.1             | 1.64         | 78               | 1.72         | 82               |
| 8            | 1.15            | 0.86         | 75               | 0.98         | 85               |
| 9            | 1.7             | 1.44         | 85               | 1.5          | 88               |
| 10           | 1.44            | 1.27         | 88               | 1.32         | 92               |
| 11           | 2.22            | 1.71         | 77               | 2.0          | 90               |
| 12           | 2.67            | 2.14         | 80               | 2.14         | 80               |
| 13           | 2.1             | 1.64         | 78               | 1.68         | 80               |
| 14           | 1.9             | 1.48         | 78               | 1.61         | 85               |
| 15           | 1.83            | 1.57         | 86               | 1.65         | 90               |
| 16           | 2.32            | 1.9          | 82               | 1.67         | 72               |
| 17           | 3.17            | 2.31         | 73               | 2.54         | 80               |
| 18           | 1.15            | 0.92         | 80               | 0.99         | 86               |
| 19           | 1.22            | 0.9          | 75               | 1.09         | 89               |
| 20           | 2.12            | 1.65         | 78               | 1.7          | 80               |
| 21           | 2.22            | 1.93         | 87               | 2.01         | 91               |
| Mean         |                 | 80.3         |                  | 84.4         |                  |
| SD. $\pm$    |                 | 4.2          |                  | 5.9          |                  |
| SE. $\pm$    |                 | 0.9          |                  | 1.3          |                  |
| t. value     |                 | 3.19         |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (7 c) Showing : ( $FEV_1$  / FVC %)**

| Case No.     | Predicted value | Before           |                  | After        |                  |
|--------------|-----------------|------------------|------------------|--------------|------------------|
|              |                 | Actual value     | % from predicted | Actual value | % from predicted |
| 1            | 90              | 94               | 104              | 92           | 103              |
| 2            | 90              | 91               | 101              | 91           | 101              |
| 3            | 90              | 85               | 94               | 81           | 89               |
| 4            | 91              | 95               | 106              | 95           | 104              |
| 5            | 90              | 89               | 99               | 83           | 92               |
| 6            | 91              | 90               | 99               | 89           | 98               |
| 7            | 90              | 86               | 96               | 88           | 98               |
| 8            | 93              | 86               | 92               | 91           | 99               |
| 9            | 90              | 91               | 101              | 88           | 98               |
| 10           | 91              | 88               | 98               | 88           | 97               |
| 11           | 89              | 91               | 102              | 89           | 100              |
| 12           | 89              | 87               | 98               | 82           | 92               |
| 13           | 90              | 86               | 95               | 88           | 98               |
| 14           | 90              | 88               | 98               | 89           | 99               |
| 15           | 91              | 87               | 96               | 93           | 102              |
| 16           | 90              | 90               | 100              | 88           | 98               |
| 17           | 87              | 70               | 80               | 82           | 94               |
| 18           | 92              | 88               | 96               | 93           | 101              |
| 19           | 90              | 83               | 92               | 88           | 98               |
| 20           | 89              | 86               | 97               | 85           | 95               |
| 21           | 89              | 91               | 102              | 89           | 100              |
| Mean         |                 | 87.7             |                  | 88.2         |                  |
| SD. $\pm$    |                 | 5                |                  | 3.8          |                  |
| SE. $\pm$    |                 | 1.1              |                  | 0.8          |                  |
| t. value     |                 | 0.51             |                  |              |                  |
| p. value     |                 | > 0.05           |                  |              |                  |
| Significance |                 | Non- significant |                  |              |                  |

**Table (7 d) Showing : Forced expiratory flow rate at 25 -75% ( $FEF_{25-75\%}$ )**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 2.69            | 1.88         | 70               | 2.1          | 78               |
| 2            | 2.11            | 1.69         | 80               | 2.05         | 97               |
| 3            | 2.48            | 1.86         | 75               | 1.86         | 75               |
| 4            | 1.8             | 1.44         | 80               | 1.62         | 90               |
| 5            | 2.81            | 2.35         | 83               | 2.11         | 75               |
| 6            | 2.4             | 1.8          | 75               | 2.04         | 85               |
| 7            | 2.69            | 1.99         | 74               | 2.1          | 78               |
| 8            | 1.53            | 1.22         | 80               | 1.24         | 81               |
| 9            | 2.11            | 1.87         | 89               | 1.81         | 86               |
| 10           | 1.8             | 1.48         | 82               | 1.48         | 82               |
| 11           | 2.50            | 1.8          | 72               | 1.88         | 75               |
| 12           | 3.26            | 2.61         | 80               | 2.67         | 82               |
| 13           | 2.69            | 2.04         | 76               | 1.99         | 74               |
| 14           | 2.48            | 1.79         | 72               | 1.84         | 74               |
| 15           | 2.4             | 1.92         | 80               | 1.87         | 78               |
| 16           | 2.81            | 2.22         | 79               | 2.08         | 74               |
| 17           | 3.25            | 2.44         | 75               | 2.6          | 80               |
| 18           | 1.53            | 1.22         | 80               | 1.22         | 80               |
| 19           | 1.7             | 1.33         | 78               | 1.43         | 84               |
| 20           | 2.53            | 1.9          | 75               | 2.07         | 82               |
| 21           | 2.5             | 1.98         | 79               | 2            | 80               |
| Mean         |                 | 77.8         |                  | 80.7         |                  |
| SD. $\pm$    |                 | 4.4          |                  | 5.8          |                  |
| SE. $\pm$    |                 | 1            |                  | 1.3          |                  |
| t. value     |                 | 2.14         |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (7 e) Showing : Forced expiratory flow rate max. ( $FEF_{max}$ ).**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 5.16            | 3.82         | 74               | 3.92         | 76               |
| 2            | 4.41            | 3.26         | 74               | 3.53         | 80               |
| 3            | 4.73            | 3.31         | 70               | 3.31         | 70               |
| 4            | 3.42            | 2.74         | 80               | 2.74         | 80               |
| 5            | 5.42            | 4.13         | 76               | 3.9          | 72               |
| 6            | 3.56            | 2.56         | 72               | 2.56         | 72               |
| 7            | 5.16            | 3.92         | 76               | 4.13         | 80               |
| 8            | 3.06            | 2.39         | 78               | 1.99         | 75               |
| 9            | 4.41            | 3.53         | 80               | 3.53         | 80               |
| 10           | 3.42            | 2.57         | 75               | 2.8          | 82               |
| 11           | 5.65            | 3.96         | 70               | 4.24         | 75               |
| 12           | 6.37            | 4.78         | 75               | 4.97         | 78               |
| 13           | 5.16            | 3.72         | 72               | 3.61         | 70               |
| 14           | 4.73            | 3.59         | 75               | 3.69         | 78               |
| 15           | 4.56            | 3.42         | 75               | 3.65         | 80               |
| 16           | 5.42            | 4.12         | 76               | 3.96         | 73               |
| 17           | 7.88            | 5.83         | 74               | 6.15         | 78               |
| 18           | 3.06            | 2.39         | 78               | 2.45         | 80               |
| 19           | 3.4             | 2.55         | 75               | 2.72         | 80               |
| 20           | 5.43            | 3.8          | 70               | 4.45         | 82               |
| 21           | 2.65            | 1.91         | 72               | 2.23         | 84               |
| Mean         |                 | 74.6         |                  | 77.5         |                  |
| SD. $\pm$    |                 | 2.9          |                  | 3.9          |                  |
| SE. $\pm$    |                 | 0.9          |                  | 0.9          |                  |
| t. value     |                 | 3.07         |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (7 f) Showing : Forced expiratory flow rate at 25% ( $FEF_{25\%}$  ).**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 4.19            | 3.18         | 76               | 3.27         | 78               |
| 2            | 3.52            | 2.92         | 83               | 3.13         | 89               |
| 3            | 4.11            | 3.04         | 74               | 3.29         | 80               |
| 4            | 1.08            | 0.97         | 80               | 0.92         | 85               |
| 5            | 4.75            | 3.8          | 80               | 3.56         | 75               |
| 6            | 4.03            | 3.22         | 80               | 3.22         | 80               |
| 7            | 4.19            | 3.27         | 78               | 3.35         | 80               |
| 8            | 2.10            | 1.6          | 76               | 1.85         | 88               |
| 9            | 3.37            | 2.39         | 78               | 3.03         | 90               |
| 10           | 1.08            | 0.81         | 75               | 0.86         | 80               |
| 11           | 4.8             | 3.51         | 73               | 4.13         | 86               |
| 12           | 5.34            | 3.66         | 69               | 4.22         | 79               |
| 13           | 2.19            | 1.62         | 74               | 1.75         | 80               |
| 14           | 4.11            | 3.12         | 76               | 3.62         | 88               |
| 15           | 4.03            | 3.18         | 79               | 3.39         | 84               |
| 16           | 4.75            | 3.8          | 80               | 3.61         | 76               |
| 17           | 6.65            | 4.99         | 75               | 5.45         | 82               |
| 18           | 2.1             | 1.58         | 75               | 1.7          | 81               |
| 19           | 2.33            | 1.8          | 77               | 2.0          | 86               |
| 20           | 4.03            | 3.22         | 80               | 3.55         | 88               |
| 21           | 4.8             | 3.74         | 78               | 3.84         | 80               |
| Mean         |                 | 76.8         |                  | 82.7         |                  |
| SD. $\pm$    |                 | 3.1          |                  | 4.4          |                  |
| SE. $\pm$    |                 | 0.6          |                  | 1            |                  |
| t. value     |                 | 5.23         |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (7 g) Showing : Forced expiratory flow rate at 50% ( $FEF_{50\%}$  ).**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 3.4             | 2.38         | 70               | 2.51         | 74               |
| 2            | 2.46            | 1.97         | 80               | 2.12         | 86               |
| 3            | 3.35            | 2.41         | 72               | 2.75         | 82               |
| 4            | 1.0             | 0.83         | 83               | 0.88         | 88               |
| 5            | 3.86            | 2.95         | 76               | 2.85         | 74               |
| 6            | 3.28            | 2.49         | 76               | 2.56         | 78               |
| 7            | 3.4             | 2.58         | 76               | 2.65         | 78               |
| 8            | 1.44            | 1.15         | 80               | 1.27         | 88               |
| 9            | 2.38            | 1.95         | 82               | 2.02         | 85               |
| 10           | 1.0             | 0.8          | 80               | 0.9          | 90               |
| 11           | 3.32            | 2.78         | 84               | 2.66         | 80               |
| 12           | 4.32            | 3.24         | 75               | 3.46         | 80               |
| 13           | 3.4             | 2.45         | 72               | 2.65         | 78               |
| 14           | 3.35            | 2.48         | 74               | 2.68         | 80               |
| 15           | 3.28            | 2.31         | 78               | 2.69         | 82               |
| 16           | 3.86            | 2.95         | 76               | 2.78         | 72               |
| 17           | 4.26            | 3.24         | 76               | 3.58         | 84               |
| 18           | 1.44            | 1.15         | 80               | 1.31         | 91               |
| 19           | 1.7             | 1.33         | 78               | 1.36         | 80               |
| 20           | 3.28            | 2.56         | 78               | 2.62         | 80               |
| 21           | 3.32            | 2.66         | 80               | 2.72         | 82               |
| Mean         |                 | 77.4         |                  | 81.5         |                  |
| SD. $\pm$    |                 | 3.7          |                  | 5.2          |                  |
| SE. $\pm$    |                 | 0.8          |                  | 1.1          |                  |
| t. value     |                 | 4.47         |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (7 h) Showing : Forced expiratory flow rate at 75% ( $FEF_{75\%}$ ).**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 2.08            | 1.44         | 69               | 1.58         | 76               |
| 2            | 1.71            | 1.33         | 78               | 1.5          | 88               |
| 3            | 2.22            | 1.55         | 70               | 1.69         | 76               |
| 4            | 0.90            | 0.68         | 75               | 0.68         | 76               |
| 5            | 2.5             | 1.95         | 78               | 1.8          | 72               |
| 6            | 2.22            | 1.64         | 74               | 1.6          | 72               |
| 7            | 2.08            | 1.54         | 74               | 1.58         | 76               |
| 8            | 1.19            | 0.9          | 76               | 0.98         | 82               |
| 9            | 1.71            | 1.28         | 75               | 1.45         | 85               |
| 10           | 0.90            | 0.67         | 74               | 0.68         | 76               |
| 11           | 2.09            | 1.46         | 70               | 1.71         | 82               |
| 12           | 2.64            | 1.98         | 75               | 2.06         | 78               |
| 13           | 2.08            | 1.46         | 70               | 1.56         | 75               |
| 14           | 2.22            | 1.64         | 74               | 1.9          | 86               |
| 15           | 2.22            | 1.55         | 70               | 1.67         | 75               |
| 16           | 2.5             | 1.95         | 78               | 1.8          | 72               |
| 17           | 2.67            | 1.95         | 73               | 2.14         | 80               |
| 18           | 1.19            | 0.98         | 82               | 0.95         | 80               |
| 19           | 1.32            | 1.06         | 80               | 1.03         | 78               |
| 20           | 2.22            | 1.69         | 76               | 1.82         | 82               |
| 21           | 2.09            | 1.67         | 80               | 1.67         | 80               |
| Mean         |                 | 74.8         |                  | 78.4         |                  |
| SD. $\pm$    |                 | 3.7          |                  | 4.6          |                  |
| SE. $\pm$    |                 | 0.8          |                  | 1            |                  |
| t. value     |                 | 3.1          |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (8) : Statistical Analysis of Ventilatory Function in Group (II) Before Surgery**

**(8a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy**

|              | FVC       |          |          | FEV <sub>1</sub> |          |          | FEV <sub>1</sub> /FVC % |          |          | FEF <sub>25-75%</sub> |          |          | FEF <sub>max</sub> |          |          | FEF <sub>25%</sub> |          |          | FEF <sub>50%</sub> |          |          | FEF <sub>75%</sub> |          |          |
|--------------|-----------|----------|----------|------------------|----------|----------|-------------------------|----------|----------|-----------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|
|              | $\bar{X}$ | SD $\pm$ | SE $\pm$ | $\bar{X}$        | SD $\pm$ | SE $\pm$ | $\bar{X}$               | SD $\pm$ | SE $\pm$ | $\bar{X}$             | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ |
| A            | 84.8      | 4.1      | 2.1      | 82               | 5.7      | 2.9      | 88.3                    | 2.1      | 1        | 82.2                  | 4.3      | 2.1      | 77.8               | 2.1      | 1        | 76                 | 1.4      | 0.7      | 80.5               | 1        | 0.5      | 76.8               | 3.6      | 1.8      |
| T            | 83        | 3.5      | 1.3      | 81.4             | 3.8      | 1.4      | 91.6                    | 3.6      | 1.4      | 78.3                  | 3.6      | 1.4      | 73.4               | 2.7      | 1        | 75.3               | 5.2      | 2.6      | 78.1               | 3.1      | 1.2      | 75.3               | 3.9      | 1.5      |
| T.value      | 0.77      |          |          | 0.32             |          |          | 1.24                    |          |          | 0.9                   |          |          | 1.72               |          |          | 0.27               |          |          | 1.45               |          |          | 1.45               |          |          |
| P.value      | > 0.05    |          |          | > 0.05           |          |          | > 0.05                  |          |          | > 0.05                |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          |
| Significance | N.S       |          |          | N.S              |          |          | N.S                     |          |          | N.S                   |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          |

**(8b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy**

|              | FVC       |          |          | FEV <sub>1</sub> |          |          | FEV <sub>1</sub> /FVC % |          |          | FEF <sub>25-75%</sub> |          |          | FEF <sub>max</sub> |          |          | FEF <sub>25%</sub> |          |          | FEF <sub>50%</sub> |          |          | FEF <sub>75%</sub> |          |          |
|--------------|-----------|----------|----------|------------------|----------|----------|-------------------------|----------|----------|-----------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|
|              | $\bar{X}$ | SD $\pm$ | SE $\pm$ | $\bar{X}$        | SD $\pm$ | SE $\pm$ | $\bar{X}$               | SD $\pm$ | SE $\pm$ | $\bar{X}$             | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ |
| A            | 84.8      | 4.1      | 2.1      | 82               | 5.7      | 2.9      | 88.3                    | 2.1      | 1        | 82.2                  | 4.3      | 2.1      | 77.8               | 2.1      | 1        | 76                 | 1.4      | 0.7      | 80.5               | 1        | 0.5      | 76.8               | 3.6      | 1.8      |
| A & T        | 81.1      | 4.2      | 1.6      | 80.3             | 2.9      | 1.1      | 89.6                    | 4        | 1.5      | 75.7                  | 3.5      | 1.3      | 74                 | 3.3      | 1.2      | 78.3               | 4        | 2        | 75.6               | 4.7      | 1.8      | 72.9               | 3.3      | 1.3      |
| T.value      | 0.96      |          |          | 0.1              |          |          | 1.12                    |          |          | 1.82                  |          |          | 1.81               |          |          | 1.41               |          |          | 1.44               |          |          | 1.59               |          |          |
| P.value      | > 0.05    |          |          | > 0.05           |          |          | > 0.05                  |          |          | > 0.05                |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          |
| Significance | N.S       |          |          | N.S              |          |          | N.S                     |          |          | N.S                   |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          |

(8c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy

|              | FVC    |     |     | FEV <sub>1</sub> |     |     | FEV <sub>1</sub> /FVC % |     |     | FEF <sub>25-75%</sub> |     |     | FEF <sub>max</sub> |     |     | FEF <sub>25%</sub> |     |     | FEF <sub>50%</sub> |     |     | FEF <sub>75%</sub> |     |     |
|--------------|--------|-----|-----|------------------|-----|-----|-------------------------|-----|-----|-----------------------|-----|-----|--------------------|-----|-----|--------------------|-----|-----|--------------------|-----|-----|--------------------|-----|-----|
|              | -<br>X | SD± | SE± | -<br>X           | SD± | SE± | -<br>X                  | SD± | SE± | -<br>X                | SD± | SE± | -<br>X             | SD± | SE± | -<br>X             | SD± | SE± | -<br>X             | SD± | SE± | -<br>X             | SD± | SE± |
| T            | 83     | 3.5 | 1.3 | 81.4             | 3.8 | 1.4 | 91.6                    | 3.6 | 1.4 | 78.3                  | 3.6 | 1.4 | 73.4               | 2.7 | 1   | 75.3               | 5.2 | 2.6 | 78.1               | 3.1 | 1.2 | 75.3               | 3.9 | 1.5 |
| A & T        | 81.1   | 4.2 | 1.6 | 80.3             | 2.9 | 1.1 | 89.6                    | 4   | 1.5 | 75.7                  | 3.5 | 1.3 | 74                 | 3.3 | 1.2 | 78.3               | 4   | 2   | 75.6               | 4.7 | 1.8 | 72.9               | 3.3 | 1.3 |
| T-value      | 0.93   |     |     | 0.7              |     |     | 1.07                    |     |     | 1.08                  |     |     | 0.34               |     |     | 1.41               |     |     | 1.61               |     |     | 0.95               |     |     |
| P-value      | > 0.05 |     |     | > 0.05           |     |     | > 0.05                  |     |     | > 0.05                |     |     | > 0.05             |     |     | > 0.05             |     |     | > 0.05             |     |     | > 0.05             |     |     |
| Significance | N. S   |     |     | N. S             |     |     | N. S                    |     |     | N. S                  |     |     | N. S               |     |     | N. S               |     |     | N. S               |     |     | N. S               |     |     |

Table (9) : Statistical Analysis of Ventilatory Function in Group (II) Two Months After Surgery

(9a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy

|              | FVC    |     |     | FEV <sub>1</sub> |     |     | FEV <sub>1</sub> /FVC % |     |     | FEF <sub>25-75%</sub> |     |     | FEF <sub>max</sub> |     |     | FEF <sub>25%</sub> |     |     | FEF <sub>50%</sub> |     |     | FEF <sub>75%</sub> |     |     |
|--------------|--------|-----|-----|------------------|-----|-----|-------------------------|-----|-----|-----------------------|-----|-----|--------------------|-----|-----|--------------------|-----|-----|--------------------|-----|-----|--------------------|-----|-----|
|              | -<br>X | SD± | SE± | -<br>X           | SD± | SE± | -<br>X                  | SD± | SE± | -<br>X                | SD± | SE± | -<br>X             | SD± | SE± | -<br>X             | SD± | SE± | -<br>X             | SD± | SE± | -<br>X             | SD± | SE± |
| A            | 89.3   | 3.6 | 1.8 | 87.8             | 3.1 | 1.5 | 90                      | 2.4 | 1.2 | 82.3                  | 2.6 | 1.3 | 79.3               | 3   | 1.5 | 84.8               | 5   | 2.5 | 88.5               | 2.6 | 1.3 | 80.8               | 3.8 | 1.9 |
| T            | 85.4   | 5   | 1.9 | 82.1             | 8.3 | 3.2 | 87                      | 3.9 | 1.5 | 78                    | 3.4 | 1.3 | 77.7               | 4.6 | 1.7 | 81.1               | 5   | 1.9 | 87.6               | 4   | 1.5 | 77.3               | 4.3 | 1.6 |
| T-value      | 1.32   |     |     | 1.6              |     |     | 1.47                    |     |     | 1.96                  |     |     | 1.78               |     |     | 1.1                |     |     | 1.85               |     |     | 1.61               |     |     |
| P-value      | > 0.05 |     |     | > 0.05           |     |     | > 0.05                  |     |     | > 0.05                |     |     | > 0.05             |     |     | > 0.05             |     |     | > 0.05             |     |     | > 0.05             |     |     |
| Significance | N. S   |     |     | N. S             |     |     | N. S                    |     |     | N. S                  |     |     | N. S               |     |     | N. S               |     |     | N. S               |     |     | N. S               |     |     |

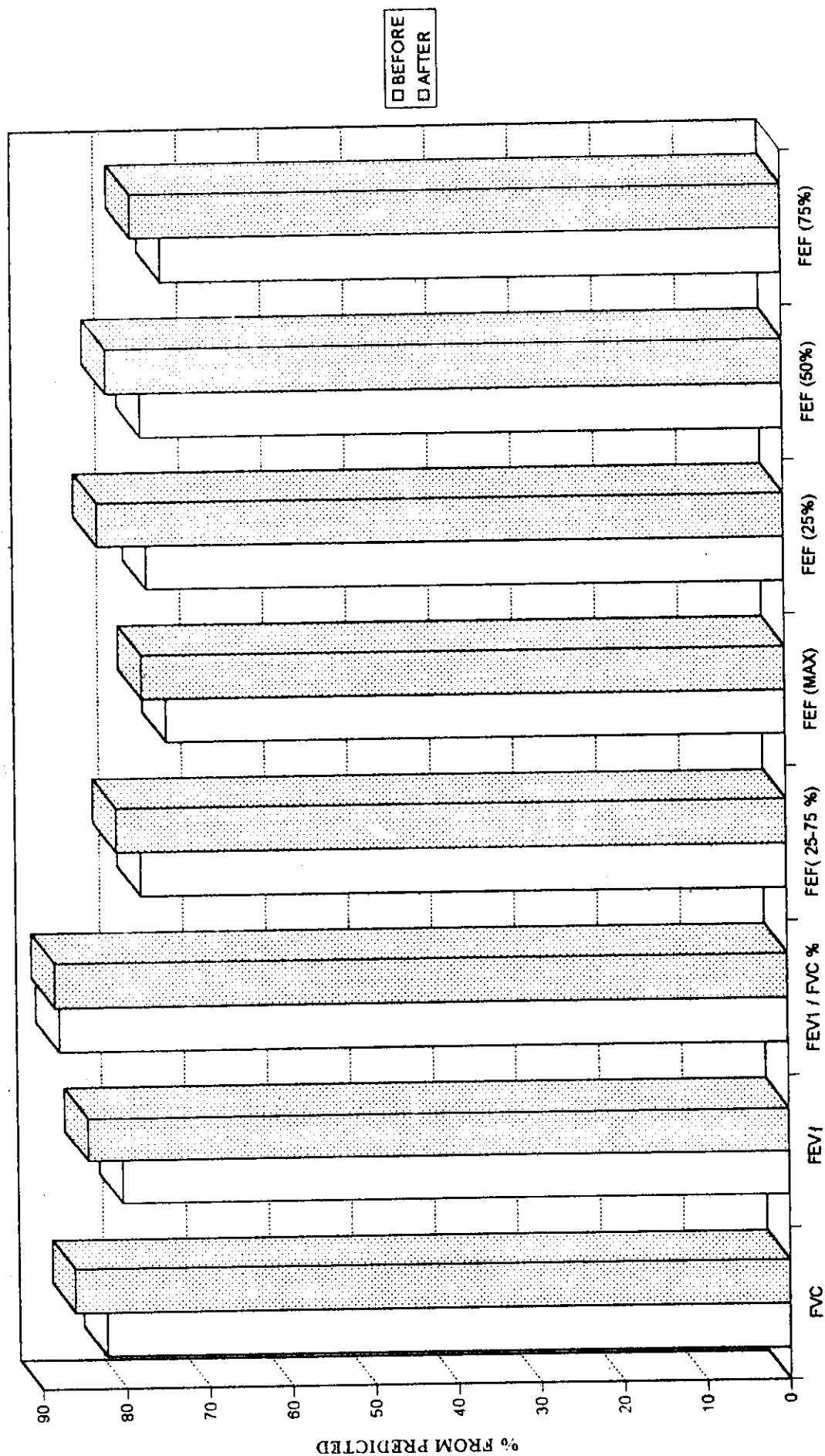
(9b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy

|              | FVC       |          |          | FEV <sub>1</sub> |          |          | FEV <sub>1</sub> /FVC % |          |          | FEF <sub>25-75%</sub> |          |          | FEF <sub>max</sub> |          |          | FEF <sub>25%</sub> |          |          | FEF <sub>50%</sub> |          |          | FEF <sub>75%</sub> |          |          |
|--------------|-----------|----------|----------|------------------|----------|----------|-------------------------|----------|----------|-----------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|
|              | $\bar{X}$ | SD $\pm$ | SE $\pm$ | $\bar{X}$        | SD $\pm$ | SE $\pm$ | $\bar{X}$               | SD $\pm$ | SE $\pm$ | $\bar{X}$             | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ |
| A            | 89.3      | 3.6      | 1.8      | 87.8             | 3.1      | 1.5      | 90                      | 2.4      | 1.2      | 82.3                  | 2.6      | 1.3      | 79.3               | 3        | 1.5      | 84.8               | 5        | 2.5      | 88.5               | 2.6      | 1.3      | 80.8               | 3.8      | 1.9      |
| A & T        | 85.3      | 6.1      | 3        | 87.3             | 4.6      | 2.3      | 87.3                    | 5.2      | 2.6      | 82.4                  | 8.5      | 3.2      | 76.5               | 4.7      | 2.4      | 83                 | 5        | 2.5      | 82.5               | 6.2      | 3.1      | 79                 | 6        | 3        |
| T value      | 1.25      |          |          | 0.32             |          |          | 0.99                    |          |          | 0.6                   |          |          | 0.89               |          |          | 0.59               |          |          | 1.85               |          |          | 0.87               |          |          |
| P value      | > 0.05    |          |          | > 0.05           |          |          | > 0.05                  |          |          | > 0.05                |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          |
| Significance | N.S       |          |          | N.S              |          |          | N.S                     |          |          | N.S                   |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          |

(9c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy

|              | FVC       |          |          | FEV <sub>1</sub> |          |          | FEV <sub>1</sub> /FVC % |          |          | FEF <sub>25-75%</sub> |          |          | FEF <sub>max</sub> |          |          | FEF <sub>25%</sub> |          |          | FEF <sub>50%</sub> |          |          | FEF <sub>75%</sub> |          |          |
|--------------|-----------|----------|----------|------------------|----------|----------|-------------------------|----------|----------|-----------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|
|              | $\bar{X}$ | SD $\pm$ | SE $\pm$ | $\bar{X}$        | SD $\pm$ | SE $\pm$ | $\bar{X}$               | SD $\pm$ | SE $\pm$ | $\bar{X}$             | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ |
| T            | 85.4      | 5        | 1.9      | 82.1             | 8.3      | 3.2      | 87                      | 3.9      | 1.5      | 78                    | 3.4      | 1.3      | 77.7               | 4.6      | 1.7      | 81.1               | 5        | 1.9      | 87.6               | 4        | 1.5      | 77.3               | 4.3      | 1.6      |
| A & T        | 85.3      | 6.1      | 3        | 87.3             | 4.6      | 2.3      | 87.3                    | 5.2      | 2.6      | 82.4                  | 8.5      | 3.2      | 76.5               | 4.7      | 2.4      | 83                 | 5        | 2.5      | 82.5               | 6.2      | 3.1      | 79                 | 6        | 3        |
| T value      | 0.68      |          |          | 0.79             |          |          | 0.37                    |          |          | 1.07                  |          |          | 0.9                |          |          | 0.37               |          |          | 1.27               |          |          | 0.17               |          |          |
| P value      | > 0.05    |          |          | > 0.05           |          |          | > 0.05                  |          |          | > 0.05                |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          |
| Significance | N.S       |          |          | N.S              |          |          | N.S                     |          |          | N.S                   |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          |

FIG. (10) : STATESTICAL ANALYSIS OF VENTILATORY FUNCTIONS IN GROUP II BEFORE AND TWO MONTHS AFTER SURGERY



### ***Group III :***

Table (10) shows the ventilatory functions in group III before and two months after tonsillectomy and/or adenoidectomy. There is significant increase in the ventilatory functions two months after surgery except for the FVC which shows non significant increase.

Table (10a) shows that the mean FVC increased from  $78.4 \pm 6.4$  before surgery to  $81.1 \pm 3.6$  two months after surgery. The difference is statistically non significant ( $P > 0.05$ ).

Table (10b) shows that the mean  $FEV_1$  increased from  $61.7 \pm 3.8$  before surgery to  $69.5 \pm 4.4$  two months after surgery. The difference is statistically significant ( $P < 0.05$ ).

Table (10c) shows that the mean  $FEV_1/FVC$  % increased from  $69.9 \pm 4$  before surgery to  $76.2 \pm 6.3$  two months after surgery. The difference is statistically significant.

Table (10d) shows that the mean  $FEF_{25-75\%}$  increased from  $54.8 \pm 11.7$  before surgery to  $61.9 \pm 10$  two months after surgery. The difference is statistically significant .

Table (10e) shows that the mean  $FEF_{max}$  increased from  $65.7 \pm 4.3$  before surgery to  $69.3 \pm 2.1$  two months after surgery. The difference is statistically significant.

Table (10f) shows that the mean  $FEF_{25\%}$  increased from  $58.5 \pm 10.5$  before surgery to  $60.7 \pm 11.7$  two months after surgery. The difference is statistically significant.

Table (10g) shows that the mean  $FEF_{50\%}$  increased from  $52.2 \pm 13.3$  before surgery to  $57.9 \pm 13.7$  two months after surgery. The difference is statistically significant.

Table (10h) shows that the mean FEF<sub>75%</sub> increased from  $45.4 \pm 3.3$  before surgery to  $55.5 \pm 13.3$  two months after surgery. The difference is statistically significant.

Table (11) shows no statistical difference in the ventilatory functions between the patients underwent adenoidectomy, tonsillectomy or adenotonsillectomy before surgery.

Table (12) shows no statistical difference in the ventilatory functions between the patients underwent adenoidectomy, tonsillectomy or adenotonsillectomy two months after surgery.

Fig. (11) shows the ventilatory functions in group III before and two months after tonsillectomy and/or adenoidectomy.

**(Table 10): Ventilatory function study of group(III)  
before and two months after surgery**

**Table (10a) Showing : Forced Vital Capacity (FVC)**

| Case No.     | Predicted value | Before          |                  | After        |                  |
|--------------|-----------------|-----------------|------------------|--------------|------------------|
|              |                 | Actual value    | % from predicted | Actual value | % from predicted |
| 1            | 2.11            | 1.58            | 75               | 1.76         | 79               |
| 2            | 2.35            | 1.78            | 76               | 1.9          | 81               |
| 3            | 1.89            | 1.41            | 75               | 1.65         | 87               |
| 4            | 2.24            | 1.89            | 84               | 0.98         | 79               |
| 5            | 3.36            | 2.64            | 72               | 2.69         | 80               |
| 6            | 2.11            | 1.54            | 72               | 1.82         | 86               |
| 7            | 1.61            | 1.37            | 85               | 1.25         | 78               |
| 8            | 2.33            | 1.77            | 76               | 1.98         | 85               |
| 9            | 3.27            | 2.4             | 72               | 2.42         | 74               |
| 10           | 2.24            | 2               | 89               | 1.86         | 83               |
| 11           | 2.02            | 1.58            | 78               | 1.59         | 79               |
| 12           | 2.47            | 2.15            | 87               | 2            | 81               |
| 13           | 2.39            | 1.78            | 70               | 1.91         | 80               |
| 14           | 2.11            | 1.81            | 86               | 1.59         | 75               |
| 15           | 2.5             | 1.87            | 69               | 2.05         | 82               |
| 16           | 4.01            | 3.13            | 78               | 3.19         | 80               |
| 17           | 4.03            | 3.1             | 77               | 3.48         | 86               |
| 18           | 2.24            | 1.97            | 88               | 1.9          | 85               |
| 19           | 3.13            | 2.5             | 80               | 2.5          | 80               |
| Mean         |                 | 78.4            |                  | 81.1         |                  |
| SD. $\pm$    |                 | 6.4             |                  | 3.6          |                  |
| SE. $\pm$    |                 | 1.5             |                  | 0.8          |                  |
| t. value     |                 | 1.55            |                  |              |                  |
| p. value     |                 | > 0.05          |                  |              |                  |
| Significance |                 | Non-significant |                  |              |                  |

**Table (10b) Showing : Forced expiratory volume of one second (*FEV<sub>1</sub>*)**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 1.9             | 1.14         | 60               | 1.24         | 65               |
| 2            | 2.22            | 1.23         | 64               | 1.52         | 69               |
| 3            | 1.7             | 1.1          | 62               | 1.28         | 75               |
| 4            | 2.15            | 1.29         | 60               | 0.87         | 76               |
| 5            | 3.17            | 1.97         | 62               | 2.35         | 74               |
| 6            | 1.9             | 1.14         | 60               | 1.25         | 66               |
| 7            | 1.44            | 1.00         | 69               | 0.94         | 56               |
| 8            | 2.1             | 1.3          | 61               | 1.58         | 75               |
| 9            | 2.91            | 1.44         | 50               | 2.06         | 71               |
| 10           | 2.15            | 1.4          | 65               | 1.61         | 75               |
| 11           | 1.83            | 1.2          | 66               | 1.19         | 65               |
| 12           | 2.22            | 1.4          | 63               | 1.44         | 65               |
| 13           | 2.12            | 1.27         | 60               | 1.38         | 65               |
| 14           | 1.9             | 1.24         | 65               | 1.24         | 65               |
| 15           | 2.22            | 1.33         | 60               | 1.55         | 70               |
| 16           | 3.54            | 2.16         | 61               | 2.3          | 65               |
| 17           | 3.48            | 2.08         | 60               | 2.44         | 70               |
| 18           | 2.15            | 1.35         | 63               | 1.61         | 75               |
| 19           | 2.67            | 1.65         | 62               | 1.84         | 69               |
| Mean         |                 | 61.7         |                  | 69.5         |                  |
| SD. $\pm$    |                 | 3.8          |                  | 4.4          |                  |
| SE. $\pm$    |                 | 0.9          |                  | 1            |                  |
| t. value     |                 | 5.37         |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

Table (10c) Showing : ( $FEV_1$  / FVC %)

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 90              | 72           | 80               | 74           | 82               |
| 2            | 90              | 69           | 77               | 77           | 86               |
| 3            | 90              | 78           | 87               | 77           | 86               |
| 4            | 92              | 68           | 74               | 89           | 97               |
| 5            | 87              | 75           | 86               | 87           | 100              |
| 6            | 90              | 74           | 82               | 69           | 77               |
| 7            | 91              | 73           | 80               | 75           | 82               |
| 8            | 90              | 73           | 81               | 80           | 89               |
| 9            | 89              | 60           | 67               | 64           | 72               |
| 10           | 92              | 70           | 76               | 84           | 91               |
| 11           | 91              | 71           | 78               | 75           | 82               |
| 12           | 90              | 65           | 72               | 72           | 80               |
| 13           | 89              | 71           | 80               | 72           | 81               |
| 14           | 90              | 68           | 76               | 78           | 87               |
| 15           | 89              | 71           | 80               | 76           | 85               |
| 16           | 88              | 69           | 78               | 72           | 82               |
| 17           | 86              | 67           | 78               | 69           | 80               |
| 18           | 92              | 68           | 74               | 82           | 89               |
| 19           | 85              | 66           | 74               | 74           | 87               |
| Mean         |                 | 69.9         |                  | 76.2         |                  |
| SD. $\pm$    |                 | 4            |                  | 6.3          |                  |
| SE. $\pm$    |                 | 0.9          |                  | 1.4          |                  |
| t. value     |                 | 4.42         |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (10d) Showing : Forced expiratory flow rate at 25 -75% ( $FEF_{25-75\%}$ )**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 2.48            | 1.61         | 65               | 1.48         | 60               |
| 2            | 1.7             | 0.87         | 51               | 0.9          | 54               |
| 3            | 2.11            | 0.86         | 41               | 1.37         | 65               |
| 4            | 1.53            | 1.13         | 74               | 1.13         | 74               |
| 5            | 3.52            | 2.46         | 70               | 2.46         | 70               |
| 6            | 2.4             | 1.39         | 58               | 1.63         | 68               |
| 7            | 1.8             | 0.85         | 47               | 0.99         | 55               |
| 8            | 2.69            | 1.53         | 57               | 1.8          | 67               |
| 9            | 3.5             | 2.38         | 68               | 2.38         | 68               |
| 10           | 1.53            | 0.79         | 52               | 1.05         | 69               |
| 11           | 2.4             | 1.37         | 57               | 1.44         | 60               |
| 12           | 2.81            | 1.38         | 49               | 1.4          | 50               |
| 13           | 2.53            | 1.01         | 40               | 1.14         | 45               |
| 14           | 2.48            | 0.74         | 30               | 0.87         | 35               |
| 15           | 2.5             | 1            | 40               | 1.62         | 65               |
| 16           | 4.1             | 2.46         | 60               | 2.83         | 69               |
| 17           | 3.79            | 2.12         | 56               | 2.46         | 65               |
| 18           | 1.53            | 1.02         | 67               | 1.1          | 72               |
| 19           | 3.26            | 1.96         | 60               | 2.12         | 65               |
| Mean         |                 | 54.8         |                  | 61.9         |                  |
| SD. $\pm$    |                 | 11.7         |                  | 10           |                  |
| SE. $\pm$    |                 | 2.7          |                  | 2.3          |                  |
| t. value     |                 | 3.9          |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (10e) Showing : Forced expiratory flow rate max. ( $FEF_{max}$ ).**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 4.73            | 2.88         | 61               | 3.22         | 68               |
| 2            | 3.4             | 2.31         | 68               | 2.28         | 67               |
| 3            | 4.41            | 3.04         | 69               | 3.35         | 76               |
| 4            | 3.06            | 1.9          | 62               | 2.2          | 72               |
| 5            | 7.88            | 5.2          | 66               | 5.36         | 68               |
| 6            | 4.73            | 2.8          | 59               | 3.26         | 69               |
| 7            | 3.42            | 2.26         | 66               | 2.36         | 69               |
| 8            | 5.16            | 3.09         | 60               | 3.6          | 70               |
| 9            | 6.88            | 4.47         | 65               | 4.75         | 69               |
| 10           | 3.06            | 2.08         | 68               | 2.14         | 70               |
| 11           | 4.56            | 3.1          | 68               | 3.1          | 68               |
| 12           | 5.42            | 3.47         | 64               | 3.68         | 68               |
| 13           | 5.43            | 3.9          | 72               | 3.8          | 70               |
| 14           | 4.73            | 3.31         | 70               | 3.26         | 69               |
| 15           | 5.65            | 4.01         | 71               | 3.9          | 70               |
| 16           | 8.2             | 5.17         | 63               | 5.4          | 66               |
| 17           | 8.58            | 6.18         | 72               | 5.9          | 69               |
| 18           | 3.06            | 2.02         | 66               | 2.14         | 70               |
| 19           | 6.37            | 3.69         | 58               | 4.39         | 69               |
| Mean         |                 | 65.7         |                  | 69.3         |                  |
| SD. $\pm$    |                 | 4.3          |                  | 2.1          |                  |
| SE. $\pm$    |                 | 1            |                  | 0.5          |                  |
| t. value     |                 | 3.55         |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (10f) Showing : Forced expiratory flow rate at 25% ( $FEF_{25\%}$  ).**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 4.11            | 2.3          | 56               | 2.26         | 55               |
| 2            | 2.33            | 1.26         | 54               | 1.26         | 54               |
| 3            | 3.52            | 1.94         | 55               | 2.46         | 70               |
| 4            | 2.1             | 1.47         | 70               | 1.47         | 70               |
| 5            | 6.65            | 4.39         | 66               | 4.45         | 67               |
| 6            | 4.11            | 2.09         | 51               | 2.09         | 51               |
| 7            | 1.08            | 0.43         | 40               | 0.43         | 40               |
| 8            | 4.19            | 2.89         | 69               | 2.93         | 70               |
| 9            | 5.13            | 3.69         | 72               | 3.59         | 70               |
| 10           | 2.1             | 1.28         | 61               | 1.45         | 69               |
| 11           | 4.03            | 1.89         | 47               | 1.89         | 47               |
| 12           | 4.57            | 2.8          | 59               | 2.6          | 55               |
| 13           | 4.51            | 1.98         | 44               | 2.03         | 45               |
| 14           | 4.11            | 1.64         | 40               | 1.64         | 40               |
| 15           | 4.8             | 3.17         | 66               | 3.46         | 72               |
| 16           | 6.66            | 4.6          | 69               | 4.59         | 69               |
| 17           | 6.26            | 3.5          | 56               | 4.13         | 66               |
| 18           | 2.1             | 1.47         | 70               | 1.6          | 77               |
| 19           | 5.34            | 3.58         | 67               | 3.58         | 67               |
| Mean         |                 | 58.5         |                  | 60.7         |                  |
| SD. $\pm$    |                 | 10.5         |                  | 11.7         |                  |
| SE. $\pm$    |                 | 2.4          |                  | 2.7          |                  |
| t. value     |                 | 2            |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (10g) Showing : Forced expiratory flow rate at 50% ( $FEF_{50\%}$  ).**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 3.35            | 1.67         | 50               | 1.67         | 50               |
| 2            | 1.7             | 0.98         | 58               | 1.02         | 60               |
| 3            | 2.46            | 1.23         | 50               | 1.65         | 67               |
| 4            | 1.49            | 0.89         | 60               | 1.03         | 69               |
| 5            | 4.56            | 3.05         | 67               | 3.1          | 68               |
| 6            | 3.35            | 1.91         | 57               | 1.9          | 57               |
| 7            | 1               | 0.3          | 30               | 0.3          | 30               |
| 8            | 3.4             | 2.14         | 63               | 2.31         | 68               |
| 9            | 4.13            | 2.72         | 66               | 2.56         | 62               |
| 10           | 1.49            | 0.67         | 45               | 1.01         | 68               |
| 11           | 3.28            | 0.98         | 30               | 1.13         | 40               |
| 12           | 3.86            | 2.04         | 53               | 2.08         | 54               |
| 13           | 3.14            | 1.09         | 35               | 1.26         | 40               |
| 14           | 3.25            | 0.97         | 30               | 0.97         | 30               |
| 15           | 3.32            | 1.53         | 64               | 2.29         | 69               |
| 16           | 5.38            | 3.5          | 65               | 3.77         | 70               |
| 17           | 4.41            | 2.2          | 50               | 2.65         | 60               |
| 18           | 1.49            | 1.03         | 69               | 1.06         | 71               |
| 19           | 4.32            | 2.94         | 68               | 2.94         | 68               |
| Mean         |                 | 52.2         |                  | 57.9         |                  |
| SD. $\pm$    |                 | 13.3         |                  | 13.7         |                  |
| SE. $\pm$    |                 | 3.1          |                  | 3.1          |                  |
| t. value     |                 | 3.19         |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

**Table (10h) Showing : Forced expiratory flow rate at 75% ( $FEF_{75\%}$  ).**

| Case No.     | Predicted value | Before       |                  | After        |                  |
|--------------|-----------------|--------------|------------------|--------------|------------------|
|              |                 | Actual value | % from predicted | Actual value | % from predicted |
| 1            | 2.22            | 0.89         | 40               | 0.89         | 40               |
| 2            | 1.32            | 0.4          | 30               | 0.53         | 40               |
| 3            | 1.71            | 0.53         | 31               | 1.03         | 60               |
| 4            | 1.19            | 0.5          | 42               | 0.77         | 65               |
| 5            | 2.67            | 1.81         | 68               | 1.8          | 68               |
| 6            | 2.22            | 0.98         | 44               | 1.2          | 54               |
| 7            | 0.9             | 0.27         | 30               | 0.36         | 40               |
| 8            | 2.08            | 1.18         | 57               | 1.39         | 67               |
| 9            | 2.22            | 1.23         | 56               | 1.33         | 60               |
| 10           | 1.19            | 0.57         | 48               | 0.8          | 67               |
| 11           | 2.22            | 0.67         | 30               | 0.89         | 40               |
| 12           | 2.5             | 1.15         | 46               | 1.25         | 50               |
| 13           | 2.03            | 0.71         | 35               | 0.85         | 42               |
| 14           | 2.22            | 0.67         | 30               | 0.67         | 30               |
| 15           | 2.09            | 0.88         | 42               | 1.46         | 70               |
| 16           | 3.19            | 2.2          | 69               | 2.17         | 68               |
| 17           | 2.83            | 0.88         | 31               | 1.53         | 54               |
| 18           | 1.19            | 0.81         | 68               | 0.87         | 73               |
| 19           | 2.64            | 1.74         | 66               | 1.74         | 66               |
| Mean         |                 | 45.4         |                  | 55.5         |                  |
| SD. $\pm$    |                 | 14.5         |                  | 13.3         |                  |
| SE. $\pm$    |                 | 3.3          |                  | 3            |                  |
| t. value     |                 | 4.47         |                  |              |                  |
| p. value     |                 | < 0.05       |                  |              |                  |
| Significance |                 | Significant  |                  |              |                  |

Table (11) : Statistical Analysis of Ventilatory Function in Group (III) Before Surgery

(11a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy

|              | FVC       |          |          | FEV <sub>1</sub> |          |          | FEV <sub>1</sub> /FVC % |          |          | FEF <sub>25-75%</sub> |          |          | FEF <sub>max</sub> |          |          | FEF <sub>25%</sub> |          |          | FEF <sub>50%</sub> |          |          | FEF <sub>75%</sub> |          |          |
|--------------|-----------|----------|----------|------------------|----------|----------|-------------------------|----------|----------|-----------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|
|              | $\bar{X}$ | SD $\pm$ | SE $\pm$ | $\bar{X}$        | SD $\pm$ | SE $\pm$ | $\bar{X}$               | SD $\pm$ | SE $\pm$ | $\bar{X}$             | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ |
| A            | 82.6      | 6.3      | 2.8      | 62.6             | 2.1      | 0.9      | 69.6                    | 2.1      | 0.9      | 60.2                  | 10       | 4.5      | 64.8               | 3.6      | 1.6      | 64.8               | 7.1      | 3.1      | 59                 | 8.7      | 4        | 49                 | 14.5     | 6.5      |
| T            | 77.2      | 7.1      | 3.2      | 61.6             | 1.1      | 0.5      | 69.2                    | 4        | 1.8      | 55.8                  | 11.5     | 5.2      | 64.4               | 4.7      | 2.1      | 65.4               | 3.8      | 1.7      | 63.4               | 6        | 2.7      | 62.2               | 18.7     | 8.4      |
| T-value      | 1.27      |          |          | 0.88             |          |          | 0.25                    |          |          | 0.55                  |          |          | 0.12               |          |          | 0.14               |          |          | 0.94               |          |          | 1.05               |          |          |
| P-value      | > 0.05    |          |          | > 0.05           |          |          | > 0.05                  |          |          | > 0.05                |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          |
| Significance | N.S       |          |          | N.S              |          |          | N.S                     |          |          | N.S                   |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          |

(11b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy

|              | FVC       |          |          | FEV <sub>1</sub> |          |          | FEV <sub>1</sub> /FVC % |          |          | FEF <sub>25-75%</sub> |          |          | FEF <sub>max</sub> |          |          | FEF <sub>25%</sub> |          |          | FEF <sub>50%</sub> |          |          | FEF <sub>75%</sub> |          |          |
|--------------|-----------|----------|----------|------------------|----------|----------|-------------------------|----------|----------|-----------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|
|              | $\bar{X}$ | SD $\pm$ | SE $\pm$ | $\bar{X}$        | SD $\pm$ | SE $\pm$ | $\bar{X}$               | SD $\pm$ | SE $\pm$ | $\bar{X}$             | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ |
| A            | 82.6      | 6.3      | 2.8      | 62.6             | 2.1      | 0.9      | 69.6                    | 2.1      | 0.9      | 60.2                  | 10       | 4.5      | 64.8               | 3.6      | 1.6      | 64.8               | 7.1      | 3.1      | 59                 | 8.7      | 4        | 49                 | 14.5     | 6.5      |
| A&T          | 75.8      | 5.4      | 2.4      | 60.2             | 6.8      | 3        | 71.4                    | 6.8      | 3        | 61.2                  | 12.7     | 5.7      | 64                 | 4        | 1.8      | 54.8               | 11.5     | 5.2      | 50.6               | 13.3     | 5.9      | 40.2               | 10.6     | 4.8      |
| T-value      | 1.58      |          |          | 0.81             |          |          | 0.62                    |          |          | 0.11                  |          |          | 0.36               |          |          | 1                  |          |          | 1.08               |          |          | 1.81               |          |          |
| P-value      | > 0.05    |          |          | > 0.05           |          |          | > 0.05                  |          |          | > 0.05                |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          |
| Significance | N.S       |          |          | N.S              |          |          | N.S                     |          |          | N.S                   |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          |

(11c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy

|              | FVC       |          |          | FEV <sub>1</sub> |          |          | FEV <sub>1</sub> /FVC % |          |          | FEF <sub>25-75%</sub> |          |          | FEF <sub>max</sub> |          |          | FEF <sub>25%</sub> |          |          | FEF <sub>50%</sub> |          |          | FEF <sub>75%</sub> |          |          |
|--------------|-----------|----------|----------|------------------|----------|----------|-------------------------|----------|----------|-----------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|
|              | $\bar{X}$ | SD $\pm$ | SE $\pm$ | $\bar{X}$        | SD $\pm$ | SE $\pm$ | $\bar{X}$               | SD $\pm$ | SE $\pm$ | $\bar{X}$             | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ |
| T            | 77.2      | 7.1      | 3.2      | 61.6             | 1.1      | 0.5      | 69.2                    | 4        | 1.8      | 55.8                  | 11.5     | 5.2      | 64.4               | 4.7      | 2.1      | 65.4               | 3.8      | 1.7      | 63.4               | 6        | 2.7      | 62.2               | 18.7     | 8.4      |
| A&T          | 75.8      | 5.4      | 2.4      | 60.2             | 6.8      | 3        | 71.4                    | 6.8      | 3        | 61.2                  | 12.7     | 5.7      | 64                 | 4        | 1.8      | 54.8               | 11.5     | 5.2      | 50.6               | 13.3     | 5.9      | 40.2               | 10.6     | 4.8      |
| T-value      | 0.38      |          |          | 0.44             |          |          | 0.67                    |          |          | 0.05                  |          |          | 0.11               |          |          | 0.87               |          |          | 1.08               |          |          | 1.36               |          |          |
| P-value      | > 0.05    |          |          | > 0.05           |          |          | > 0.05                  |          |          | > 0.05                |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          |
| Significance | N.S       |          |          | N.S              |          |          | N.S                     |          |          | N.S                   |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          |

Table (12) : Statistical Analysis of Ventilatory Function in Group (III) Two Months After Surgery

(12a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy

|              | FVC       |          |          | FEV <sub>1</sub> |          |          | FEV <sub>1</sub> /FVC % |          |          | FEF <sub>25-75%</sub> |          |          | FEF <sub>max</sub> |          |          | FEF <sub>25%</sub> |          |          | FEF <sub>50%</sub> |          |          | FEF <sub>75%</sub> |          |          |
|--------------|-----------|----------|----------|------------------|----------|----------|-------------------------|----------|----------|-----------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|
|              | $\bar{X}$ | SD $\pm$ | SE $\pm$ | $\bar{X}$        | SD $\pm$ | SE $\pm$ | $\bar{X}$               | SD $\pm$ | SE $\pm$ | $\bar{X}$             | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ |
| A            | 82.6      | 2.6      | 1.2      | 74               | 2.8      | 1.3      | 82.4                    | 4.5      | 2        | 67.2                  | 7.9      | 3.5      | 69.8               | 1.8      | 0.8      | 68                 | 8.5      | 3.8      | 67.2               | 4.2      | 1.9      | 62.4               | 12.9     | 5.8      |
| T            | 80.6      | 0.9      | 0.4      | 68.6             | 3.8      | 1.7      | 76.2                    | 6.3      | 2.8      | 63.8                  | 8        | 3.6      | 68.2               | 1.5      | 0.7      | 66                 | 6.5      | 2.9      | 65.8               | 6.6      | 3        | 64.4               | 8.2      | 3.7      |
| T-value      | 1.69      |          |          | 1.9              |          |          | 1.35                    |          |          | 0.53                  |          |          | 1.55               |          |          | 1.40               |          |          | 0.37               |          |          | 0.28               |          |          |
| P-value      | > 0.05    |          |          | > 0.05           |          |          | > 0.05                  |          |          | > 0.05                |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          |
| Significance | N.S       |          |          | N.S              |          |          | N.S                     |          |          | N.S                   |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          |

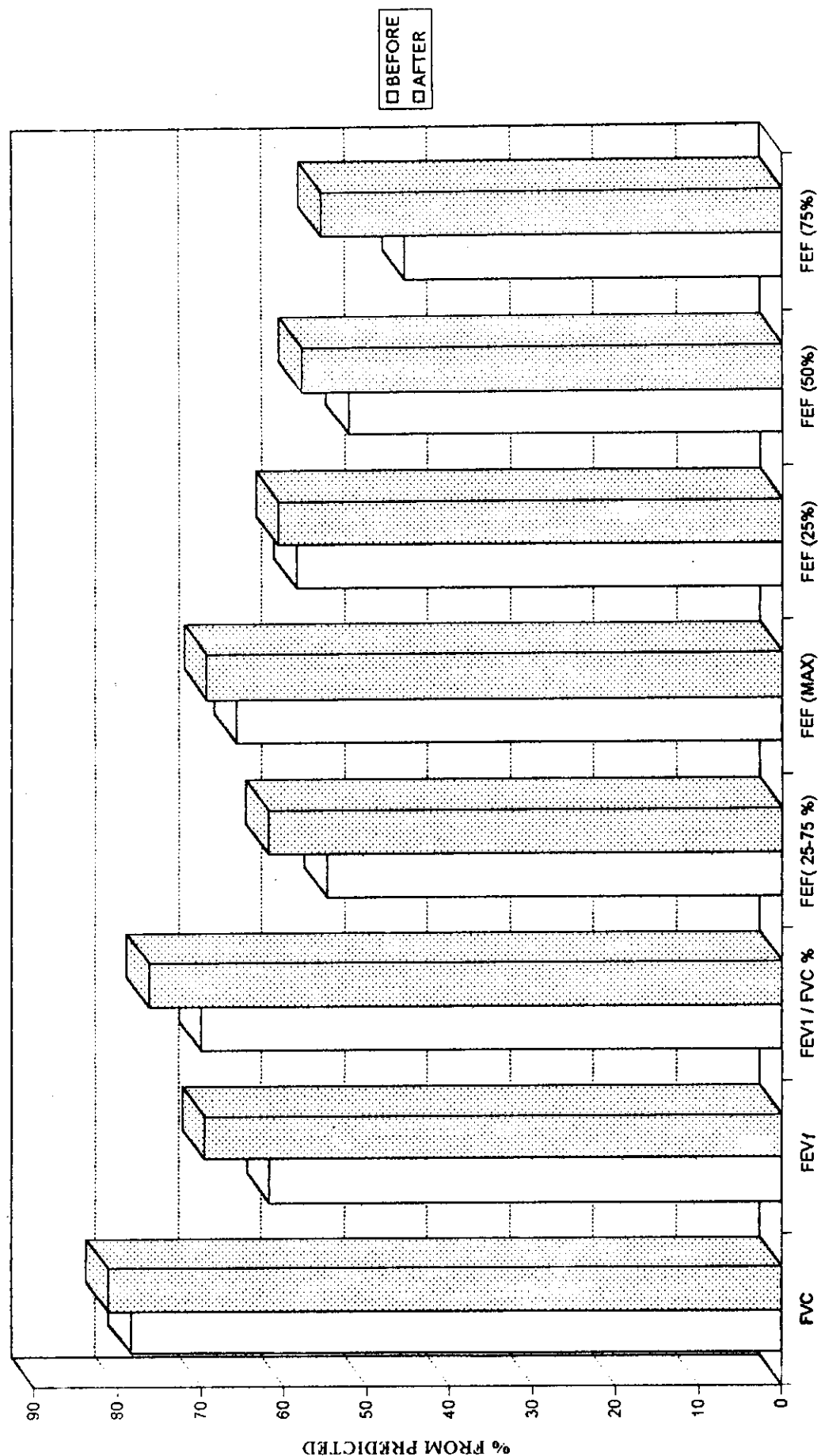
(12b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy

|              | FVC       |          |          | FEV <sub>1</sub> |          |          | FEV <sub>1</sub> /FVC % |          |          | FEF <sub>25-75%</sub> |          |          | FEF <sub>max</sub> |          |          | FEF <sub>25%</sub> |          |          | FEF <sub>50%</sub> |          |          | FEF <sub>75%</sub> |          |          |
|--------------|-----------|----------|----------|------------------|----------|----------|-------------------------|----------|----------|-----------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|
|              | $\bar{X}$ | SD $\pm$ | SE $\pm$ | $\bar{X}$        | SD $\pm$ | SE $\pm$ | $\bar{X}$               | SD $\pm$ | SE $\pm$ | $\bar{X}$             | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ |
| A            | 82.6      | 2.6      | 1.2      | 74               | 2.8      | 1.3      | 82.4                    | 4.5      | 2        | 67.2                  | 7.9      | 3.5      | 69.8               | 1.8      | 0.8      | 68                 | 8.5      | 3.8      | 67.2               | 4.2      | 1.9      | 62.4               | 12.9     | 5.8      |
| A&T          | 80.8      | 5.5      | 2.5      | 66.6             | 7.2      | 3.2      | 71.8                    | 5.2      | 2.4      | 63.2                  | 5.6      | 2.5      | 70.2               | 3.3      | 1.5      | 57.2               | 12.9     | 5.7      | 53.2               | 14.4     | 6.4      | 50.8               | 10.2     | 4.5      |
| T-value      | 0.57      |          |          | 1.33             |          |          | 1.38                    |          |          | 1.13                  |          |          | 0.41               |          |          | 1.87               |          |          | 1.26               |          |          | 1.53               |          |          |
| P-value      | > 0.05    |          |          | > 0.05           |          |          | > 0.05                  |          |          | > 0.05                |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          |
| Significance | N.S       |          |          | N.S              |          |          | N.S                     |          |          | N.S                   |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          |

(12c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy

|              | FVC       |          |          | FEV <sub>1</sub> |          |          | FEV <sub>1</sub> /FVC % |          |          | FEF <sub>25-75%</sub> |          |          | FEF <sub>max</sub> |          |          | FEF <sub>25%</sub> |          |          | FEF <sub>50%</sub> |          |          | FEF <sub>75%</sub> |          |          |
|--------------|-----------|----------|----------|------------------|----------|----------|-------------------------|----------|----------|-----------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|--------------------|----------|----------|
|              | $\bar{X}$ | SD $\pm$ | SE $\pm$ | $\bar{X}$        | SD $\pm$ | SE $\pm$ | $\bar{X}$               | SD $\pm$ | SE $\pm$ | $\bar{X}$             | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ | $\bar{X}$          | SD $\pm$ | SE $\pm$ |
| T            | 80.6      | 0.9      | 0.4      | 68.6             | 3.8      | 1.7      | 76.2                    | 6.3      | 2.8      | 63.8                  | 8        | 3.6      | 68.2               | 1.5      | 0.7      | 66                 | 6.5      | 2.9      | 65.8               | 6.6      | 3        | 64.4               | 8.2      | 3.7      |
| A&T          | 80.8      | 5.5      | 2.5      | 66.6             | 7.2      | 3.2      | 71.8                    | 5.2      | 2.4      | 63.2                  | 5.6      | 2.5      | 70.2               | 3.3      | 1.5      | 57.2               | 12.9     | 5.7      | 53.2               | 14.4     | 6.4      | 50.8               | 10.2     | 4.5      |
| T-value      | 0.09      |          |          | 0.55             |          |          | 1.23                    |          |          | 0.12                  |          |          | 1.22               |          |          | 1.10               |          |          | 1.47               |          |          | 1.89               |          |          |
| P-value      | > 0.05    |          |          | > 0.05           |          |          | > 0.05                  |          |          | > 0.05                |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          | > 0.05             |          |          |
| Significance | N.S       |          |          | N.S              |          |          | N.S                     |          |          | N.S                   |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          | N.S                |          |          |

FIG.(11) : STATISTICAL ANALYSIS OF VENTILATORY FUNCTIONS IN GROU III BEFORE AND TWO MONTHS AFTER SURGERY



### ***Results of Methacholine Bronchoprovocation Challenge Test :***

Table (13) shows the PD<sub>20</sub> [The cumulative dose of methacholine (in µgm) which causes 20% decrease in the baseline FEV<sub>1</sub>] before and two months after surgery in *group I*. The mean PD<sub>20</sub> in group I was 5130 µgm before surgery. Two months after surgery it decreased to 4999±457 µgm. The difference is statistically non significant (P> 0.05).

Table (14) shows the PD<sub>20</sub> before and two months after surgery in *group II*. The mean PD<sub>20</sub> in group II increased from 2368±1044µgm before surgery to 3653 ± 1123 µgm two months after surgery. The difference is statistically significant (P< 0.05).

Table (15) shows the PD<sub>20</sub> before and two months after surgery in *group III*. The mean PD<sub>20</sub> in group III increased from 535±322 µgm before surgery to 898±879 µgm two months after surgery. The difference is statistically significant (P< 0.05).

**Table (13) : PD<sub>20</sub> before and two months after surgery in group (I)**

| Case No.     | Before           | After |
|--------------|------------------|-------|
| 1            | 5130             | 5130  |
| 2            | 5130             | 5130  |
| 3            | 5130             | 5130  |
| 4            | 5130             | 5130  |
| 5            | 5130             | 5130  |
| 6            | 5130             | 5130  |
| 7            | 5130             | 5130  |
| 8            | 5130             | 5130  |
| 9            | 5130             | 5130  |
| 10           | 5130             | 5130  |
| 11           | 5130             | 5130  |
| 12           | 5130             | 3130  |
| 13           | 5130             | 5130  |
| 14           | 5130             | 5130  |
| 15           | 5130             | 4130  |
| 16           | 5130             | 5130  |
| 17           | 5130             | 5130  |
| 18           | 5130             | 5130  |
| 19           | 5130             | 5130  |
| 20           | 5130             | 5130  |
| 21           | 5130             | 5130  |
| 22           | 5130             | 5130  |
| 23           | 5130             | 5130  |
| Mean         | 5130             | 4999  |
| SD. $\pm$    | 0                | 457   |
| SE. $\pm$    | 0                | 95    |
| t. value     | 1.37             |       |
| p. value     | > 0.05           |       |
| Significance | Non- Significant |       |

**Table(14): PD<sub>20</sub> before and two months after surgery in group (II)**

| Case No.     | Before      | After |
|--------------|-------------|-------|
| 1            | 1130        | 2130  |
| 2            | 2130        | 3130  |
| 3            | 1130        | 3130  |
| 4            | 3130        | 5130  |
| 5            | 4130        | 3130  |
| 6            | 3130        | 3130  |
| 7            | 2130        | 3130  |
| 8            | 1130        | 2130  |
| 9            | 1130        | 3130  |
| 10           | 3130        | 4130  |
| 11           | 1130        | 3130  |
| 12           | 1130        | 2130  |
| 13           | 4130        | 4130  |
| 14           | 2130        | 5130  |
| 15           | 4130        | 4130  |
| 16           | 3130        | 2130  |
| 17           | 2130        | 5130  |
| 18           | 2130        | 3130  |
| 19           | 2130        | 5130  |
| 20           | 3130        | 5130  |
| 21           | 2130        | 5130  |
| Mean         | 2368        | 3653  |
| SD. ±        | 1044        | 1123  |
| SE. ±        | 228         | 245   |
| t. value     | 4.79        |       |
| p. value     | < 0.05      |       |
| Significance | Significant |       |

**Table (15): PD<sub>20</sub> before and two months after surgery in group (III)**

| Case No.     | Before      | After |
|--------------|-------------|-------|
| 1            | 1130        | 630   |
| 2            | 630         | 630   |
| 3            | 330         | 1130  |
| 4            | 1130        | 3130  |
| 5            | 630         | 630   |
| 6            | 330         | 330   |
| 7            | 330         | 130   |
| 8            | 330         | 2130  |
| 9            | 630         | 630   |
| 10           | 630         | 2130  |
| 11           | 130         | 130   |
| 12           | 630         | 330   |
| 13           | 130         | 130   |
| 14           | 330         | 130   |
| 15           | 630         | 1130  |
| 16           | 130         | 130   |
| 17           | 330         | 330   |
| 18           | 630         | 2130  |
| 19           | 1130        | 1130  |
| Mean         | 535         | 898   |
| SD. $\pm$    | 322         | 879   |
| SE. $\pm$    | 74          | 202   |
| t. value     | 2.07        |       |
| p. value     | < 0.05      |       |
| Significance | Significant |       |

Table (16) shows bronchial hyperreactivity changes in different groups after surgery.

*In group I* two patients (8.7%) had increased bronchial hyperreactivity.

*In group II* two patients (9.5%) had increased bronchial hyperreactivity and 15 patients (71.4%) had decreased bronchial hyperreactivity.

On the other hand *in group III* four (21.1%) patients show increased bronchial hyperreactivity and 8 patients (42.1%) showed decreased bronchial hyperreactivity.

**Table (16) : *Bronchial Hyperreactivity Changes in Different Groups After Surgery***

|                                       | Group I       | Group II      | Group III    |
|---------------------------------------|---------------|---------------|--------------|
| Number of cases with<br>no BHR change | 21<br>(91.3%) | 4<br>(19.1%)  | 7<br>(36.8%) |
| Number of cases with<br>decreased BHR | -             | 15<br>(71.4%) | 8<br>(42.1%) |
| Number of cases with<br>increased BHR | 2<br>(8.7%)   | 2<br>(9.5%)   | 4<br>(21.1%) |
| Total                                 | 23            | 21            | 19           |

**BHR = Bronchial Hyperreactivity.**

The bronchial hyperreactivity decreased post-operatively in group II and group III (increased  $PD_{20}$ ). Also, the improvement in group II (asymptomatic hyperreactive patients) was significantly higher than group III (group of asthmatic patients) The improvement in group II was (71.4% )Vs (42.1%) for group III and the difference is statically significant [ $Z= 2.66 (> 1.64)$ ].

Fig. (12) shows the mean  $PD_{20}$  of different groups before and two months after surgery.

Fig. (13) shows the bronchial hyperreactivity changes in different groups after surgery.

FIG. (12): THE MEAN PD<sub>20</sub> \* OF DIFFERENT GROUPS BEFORE AND TWO MONTHS AFTER SURGERY

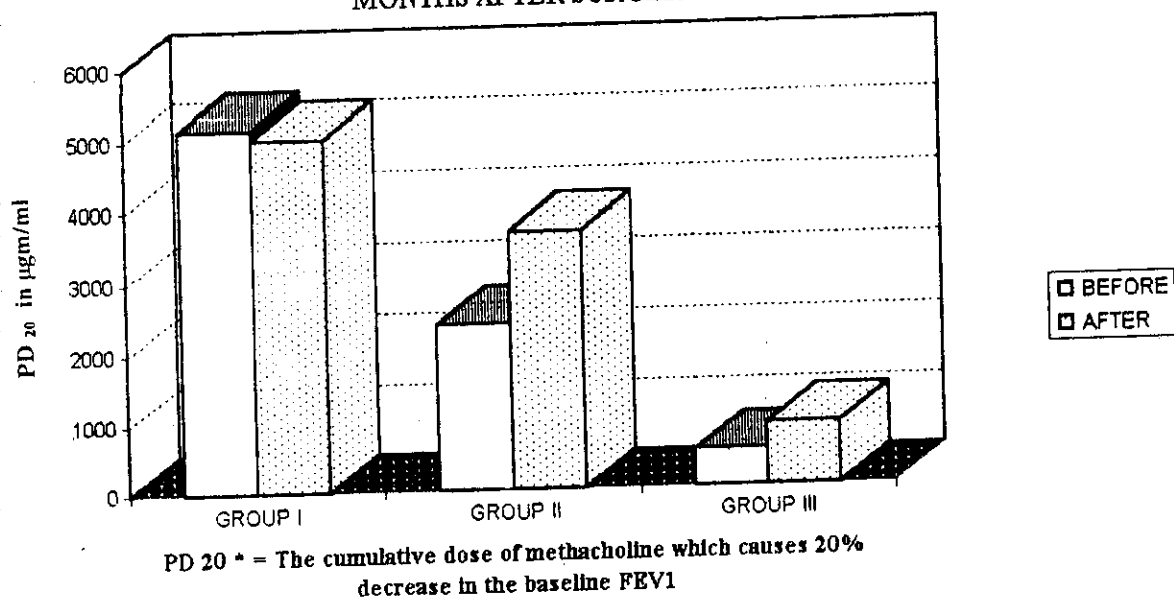
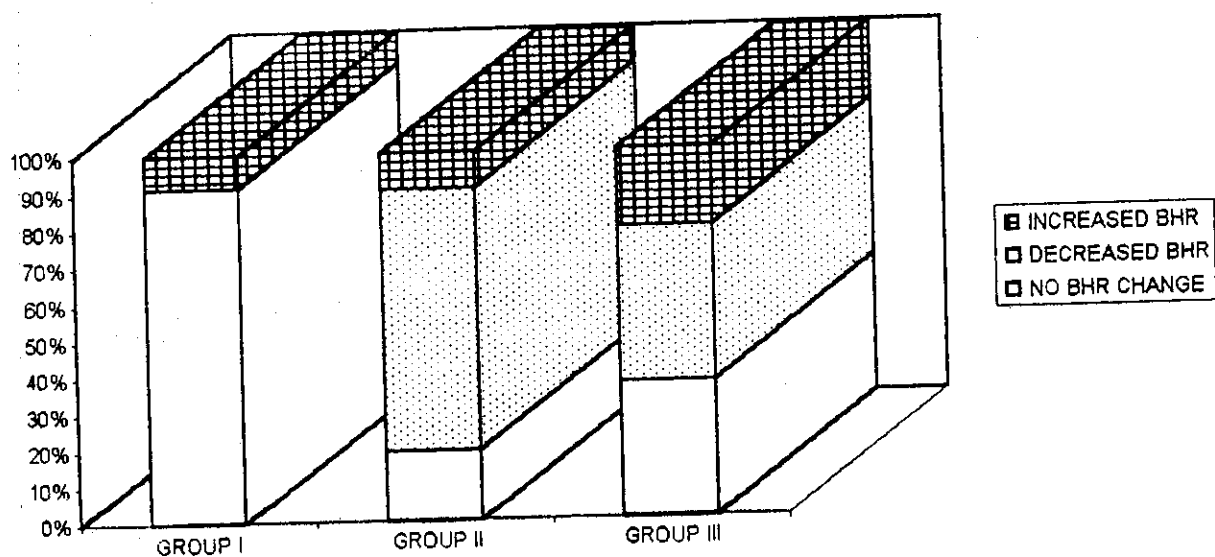


FIG. (13): BRONCHIAL HYPERREACTIVITY CHANGES IN DIFFERENT GROUPS AFTER SURGERY



***In group II*** (asymptomatic bronchial hyperreactive patients) analysis of PD<sub>20</sub> results according to the type of surgery shows the following ;

Table (17a) shows non significant difference in PD<sub>20</sub> between the patients underwent adenoidectomy and the patients underwent tonsillectomy before surgery.

Table (17b) shows non significant difference in PD<sub>20</sub> between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy before surgery.

Table (17c) shows non significant difference in PD<sub>20</sub> between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy before surgery.

Table (18a) shows non significant difference in PD<sub>20</sub> between the patients underwent adenoidectomy and the patients underwent tonsillectomy after surgery.

Table (18b) shows non significant difference in PD<sub>20</sub> between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy after surgery.

Table (18c) shows non significant difference in PD<sub>20</sub> between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy after surgery.

**Table(17): Statestical Analysis of PD<sub>20</sub> in group (II)**

**before surgery**

*(17 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy*

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 2380      | 957        | 479       | 0.15    | > 0.05  | N.S |
| T | 2416      | 1134       | 429       |         |         |     |

*(17 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 2380      | 957        | 479       | 1       | > 0.05  | N.S |
| A&T | 2330      | 919        | 291       |         |         |     |

*(17 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 2416      | 1134       | 429       | 0.1     | > 0.05  | N.S |
| A&T | 2330      | 919        | 291       |         |         |     |

**Table(18): Statestical Analysis of PD<sub>20</sub> in group (II)**  
**two months after surgery**

***(18 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy***

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 3130      | 817        | 408       | 0.1     | > 0.05  | N.S |
| T | 3559      | 1272       | 481       |         |         |     |

***(18 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy***

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 3130      | 817        | 408       | 0.16    | > 0.05  | N.S |
| A&T | 3930      | 1135       | 359       |         |         |     |

***(18 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy***

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 3559      | 1272       | 481       | 0.09    | > 0.05  | N.S |
| A&T | 3930      | 1135       | 359       |         |         |     |

*In group III* (asthmatic patients) analysis of PD<sub>20</sub> results according to the type of surgery shows the following ;

Table (19a) shows non significant difference in PD<sub>20</sub> between the patients underwent adenoidectomy and the patients underwent tonsillectomy before surgery.

Table (19b) shows non significant difference in PD<sub>20</sub> between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy before surgery.

Table (19c) shows non significant difference in PD<sub>20</sub> between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy before surgery.

Table (20a) shows non significant difference in PD<sub>20</sub> between the patients underwent adenoidectomy and the patients underwent tonsillectomy after surgery.

Table (20b) shows non significant difference in PD<sub>20</sub> between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy after surgery.

Table (20c) shows non significant difference in PD<sub>20</sub> between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy after surgery.

**Table(19): Statestical Analysis of PD<sub>20</sub> in group(III)**

**before surgery**

*(19 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy*

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 550       | 288        | 129       | 0.05    | > 0.05  | N.S |
| T | 570       | 354        | 158       |         |         |     |

*(19 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 550       | 288        | 129       | 0.16    | > 0.05  | N.S |
| A&T | 508       | 307        | 102       |         |         |     |

*(19 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 570       | 354        | 158       | 0.12    | > 0.05  | N.S |
| A&T | 508       | 307        | 102       |         |         |     |

**Table(20): Statestical Analysis of PD<sub>20</sub> in group (III)**

**two months after surgery**

***(20 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy***

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 870       | 460        | 400       | 0.05    | > 0.05  | N.S |
| T | 870       | 456        | 204       |         |         |     |

***(20 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy***

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 870       | 460        | 400       | 1.52    | > 0.05  | N.S |
| A&T | 930       | 343        | 114       |         |         |     |

***(20 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy***

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 870       | 456        | 204       | 1.53    | > 0.05  | N.S |
| A&T | 930       | 343        | 114       |         |         |     |

***Results of Total Immunoglobulin E (IgE) Study :***

Table (21) shows the total IgE results before and two months after surgery in group I.

The mean IgE before surgery was  $9.4 \pm 5.5$  IU/ml. Two months after surgery it was  $9.4 \pm 7.3$  IU/ml. The difference is statistically non significant ( $P > 0.05$ ).

Table (22) shows the total IgE results before and two months after surgery in group II.

There was a significant decrease in the mean IgE two months after surgery from  $47 \pm 22.8$  IU/ml to  $26 \pm 17.1$  IU/ml ( $P < 0.05$ ).

Table (23) shows the total IgE results before and two months after surgery in group III.

There was a significant decrease in the mean IgE two months after surgery from  $60.2 \pm 32.5$  IU/ml to  $45.8 \pm 32$  IU/ml ( $P < 0.05$ ).

Fig. (14) shows the mean total IgE before and two months after surgery of different groups .

**Table (21) : Total IgE before and two months after surgery in group (I)**

| Case No.     | Before           | After |
|--------------|------------------|-------|
| 1            | 5                | 8     |
| 2            | 2                | 2     |
| 3            | 4                | 2     |
| 4            | 6                | 4     |
| 5            | 22               | 16    |
| 6            | 5                | 8     |
| 7            | 16               | 24    |
| 8            | 2                | 4     |
| 9            | 6                | 6     |
| 10           | 10               | 14    |
| 11           | 12               | 20    |
| 12           | 18               | 6     |
| 13           | 14               | 2     |
| 14           | 14               | 18    |
| 15           | 16               | 24    |
| 16           | 10               | 2     |
| 17           | 6                | 4     |
| 18           | 16               | 12    |
| 19           | 8                | 2     |
| 20           | 6                | 4     |
| 21           | 7                | 12    |
| 22           | 6                | 16    |
| 23           | 5                | 7     |
| Mean         | 9.4              | 9.4   |
| SD. $\pm$    | 5.5              | 7.3   |
| SE. $\pm$    | 1.2              | 1.5   |
| t. value     | 0.03             |       |
| p. value     | > 0.05           |       |
| Significance | Non- significant |       |

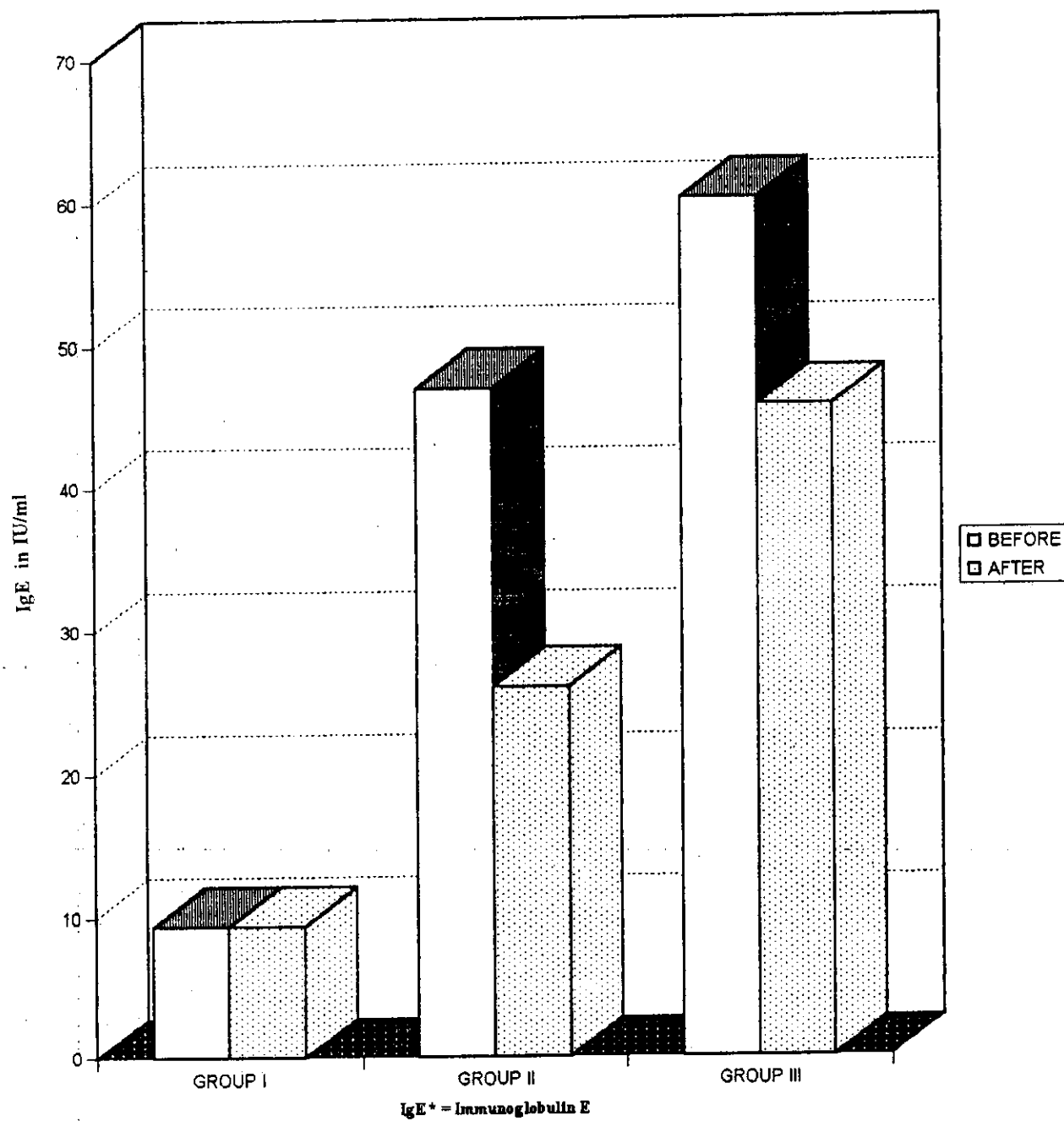
**Table (22) : Total IgE before and two months after surgery in group (II)**

| Case No.     | Before      | After |
|--------------|-------------|-------|
| 1            | 70          | 40    |
| 2            | 45          | 32    |
| 3            | 60          | 30    |
| 4            | 55          | 18    |
| 5            | 50          | 30    |
| 6            | 24          | 22    |
| 7            | 45          | 32    |
| 8            | 90          | 45    |
| 9            | 85          | 35    |
| 10           | 25          | 18    |
| 11           | 75          | 30    |
| 12           | 82          | 44    |
| 13           | 22          | 10    |
| 14           | 32          | 12    |
| 15           | 10          | 4     |
| 16           | 50          | 10    |
| 17           | 40          | 18    |
| 18           | 30          | 80    |
| 19           | 40          | 15    |
| 20           | 24          | 10    |
| 21           | 35          | 18    |
| Mean         | 47          | 26    |
| SD. $\pm$    | 22.8        | 17.1  |
| SE. $\pm$    | 5           | 3.7   |
| t. value     | 4.44        |       |
| p. value     | < 0.05      |       |
| Significance | Significant |       |

**Table (23): Total IgE before and two months after surgery in group (III)**

| Case No.     | Before      | After |
|--------------|-------------|-------|
| 1            | 30          | 45    |
| 2            | 22          | 20    |
| 3            | 120         | 60    |
| 4            | 35          | 16    |
| 5            | 35          | 25    |
| 6            | 80          | 75    |
| 7            | 110         | 130   |
| 8            | 110         | 35    |
| 9            | 18          | 8     |
| 10           | 60          | 25    |
| 11           | 55          | 105   |
| 12           | 40          | 25    |
| 13           | 90          | 75    |
| 14           | 80          | 90    |
| 15           | 85          | 35    |
| 16           | 35          | 18    |
| 17           | 55          | 48    |
| 18           | 65          | 30    |
| 19           | 20          | 25    |
| Mean         | 60.2        | 45.8  |
| SD. $\pm$    | 32.5        | 32    |
| SE. $\pm$    | 7.5         | 7.4   |
| t. value     | 2.18        |       |
| p. value     | < 0.05      |       |
| Significance | Significant |       |

Fig. (14): THE MEAN SERUM IgE\* BEFORE AND TWO MONTHS AFTER SURGERY OF DIFFERENT GROUPS



*In group II* (asymptomatic bronchial hyperreactive patients) analysis of IgE results according to the type of surgery shows the following ;

Table (24a) shows non significant difference in IgE between the patients underwent adenoidectomy and the patients underwent tonsillectomy before surgery.

Table (24b) shows non significant difference in IgE between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy before surgery.

Table (24c) shows non significant difference in IgE between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy before surgery.

Table (25a) shows non significant difference in IgE between the patients underwent adenoidectomy and the patients underwent tonsillectomy after surgery.

Table (25b) shows non significant difference in IgE between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy after surgery.

Table (25c) shows non significant difference in IgE between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy after surgery.

**Table(24): Statestical Analysis of IgE in group (II) before surgery**

*(24 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy*

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 37.5      | 24         | 7.4       | 0.24    | > 0.05  | N.S |
| T | 46.6      | 26         | 9.8       |         |         |     |

*(24 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 37.5      | 24         | 7.4       | 0.078   | > 0.05  | N.S |
| A&T | 39.3      | 15.3       | 4.8       |         |         |     |

*(24 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 46.6      | 26         | 9.8       | 0.85    | > 0.05  | N.S |
| A&T | 39.3      | 15.3       | 4.8       |         |         |     |

**Table (25) : Statistical Analysis of IgE in group (II)**

**two months after surgery**

***(25 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy***

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 28.3      | 6.2        | 3.1       | 0.58    | > 0.05  | N.S |
| T | 20.9      | 14.3       | 5.4       |         |         |     |

***(25 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy***

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 28.3      | 6.2        | 3.1       | 0.56    | > 0.05  | N.S |
| A&T | 29.4      | 10         | 3.2       |         |         |     |

***(25 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy***

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 20.9      | 14.3       | 5.4       | 0.62    | > 0.05  | N.S |
| A&T | 29.4      | 10         | 3.2       |         |         |     |

***In group III*** (asthmatic patients) analysis of IgE results according to the type of surgery shows the following ;

Table (26a) shows non significant difference in IgE between the patients underwent adenoidectomy and the patients underwent tonsillectomy before surgery.

Table (26b) shows non significant difference in IgE between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy before surgery.

Table (26c) shows non significant difference in IgE between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy before surgery.

Table (27a) shows non significant difference in IgE between the patients underwent adenoidectomy and the patients underwent tonsillectomy after surgery.

Table (27b) shows non significant difference in IgE between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy after surgery.

Table (27c) shows non significant difference in IgE between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy after surgery.

**Table (26) : Statestical Analysis of IgE in group (III)**

**before surgery**

**(26 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy**

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 58.4      | 33.8       | 15.1      | 1.5     | > 0.05  | N.S |
| T | 63        | 24.7       | 11        |         |         |     |

**(26 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy**

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 58.4      | 33.8       | 15.1      | 0.31    | > 0.05  | N.S |
| A&T | 59.8      | 34.4       | 11.5      |         |         |     |

**(26 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy**

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 63        | 24.7       | 11        | 1.6     | > 0.05  | N.S |
| A&T | 59.8      | 34.4       | 11.5      |         |         |     |

**Table (27): Statistical Analysis of IgE in group (III)**

**two months after surgery**

*(27 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy*

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 41.5      | 7.6        | 3.4       | 0.95    | > 0.05  | N.S |
| T | 46.6      | 6.1        | 2.7       |         |         |     |

*(27 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 41.5      | 7.6        | 3.4       | 1.26    | > 0.05  | N.S |
| A&T | 50.1      | 35.9       | 11.9      |         |         |     |

*(27 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 46.6      | 6.1        | 2.7       | 1.49    | > 0.05  | N.S |
| A&T | 50.1      | 35.9       | 11.9      |         |         |     |

### ***Results of Peripheral Blood Eosinophilic Count :***

Table (28) shows the peripheral blood eosinophilic count before and two months after surgery in *group I*.

The mean eosinophilic count before surgery was  $144 \pm 59.5$  cells/mm<sup>3</sup>. Two months after surgery the mean eosinophilic count was  $152 \pm 71.1$  cells/mm<sup>3</sup>. The difference is statistically non significant ( $P > 0.05$ ).

Table (29) shows the peripheral blood eosinophili count before and two months after surgery in *group II*.

The mean eosinophilic count was  $295 \pm 64$  cells/mm<sup>3</sup> before surgery. Two months after surgery the mean eosinophilic count decreased to  $183 \pm 68$  cells/mm<sup>3</sup>. The difference is statistically significant ( $P < 0.05$ ).

Table (30) shows the peripheral blood eosinophili count before and two months after surgery in *group III*.

There was a significant decrease in the mean peripheral blood eosinophilic count from  $559 \pm 260$  cells/mm<sup>3</sup> to  $415 \pm 236$  cells/mm<sup>3</sup> two months after surgery. The difference is statistically significant ( $P < 0.05$ ).

Fig. (15) shows the mean peripheral blood eosinophilic count before and two months after surgery of different groups.

**Table(28): Peripheral blood eosinophilic count before and two months after surgery in group (I)**

| Case No.     | Before           | After |
|--------------|------------------|-------|
| 1            | 175              | 130   |
| 2            | 165              | 175   |
| 3            | 170              | 160   |
| 4            | 170              | 100   |
| 5            | 312              | 240   |
| 6            | 90               | 120   |
| 7            | 186              | 320   |
| 8            | 66               | 90    |
| 9            | 156              | 150   |
| 10           | 180              | 210   |
| 11           | 58               | 200   |
| 12           | 220              | 175   |
| 13           | 102              | 156   |
| 14           | 182              | 101   |
| 15           | 135              | 320   |
| 16           | 95               | 106   |
| 17           | 198              | 80    |
| 18           | 115              | 128   |
| 19           | 105              | 70    |
| 20           | 102              | 56    |
| 21           | 80               | 110   |
| 22           | 84               | 100   |
| 23           | 176              | 190   |
| Mean         | 144              | 152   |
| SD. $\pm$    | 59.5             | 71.1  |
| SE. $\pm$    | 12               | 14    |
| t. value     | 0.47             |       |
| p. value     | > 0.05           |       |
| Significance | Non- significant |       |

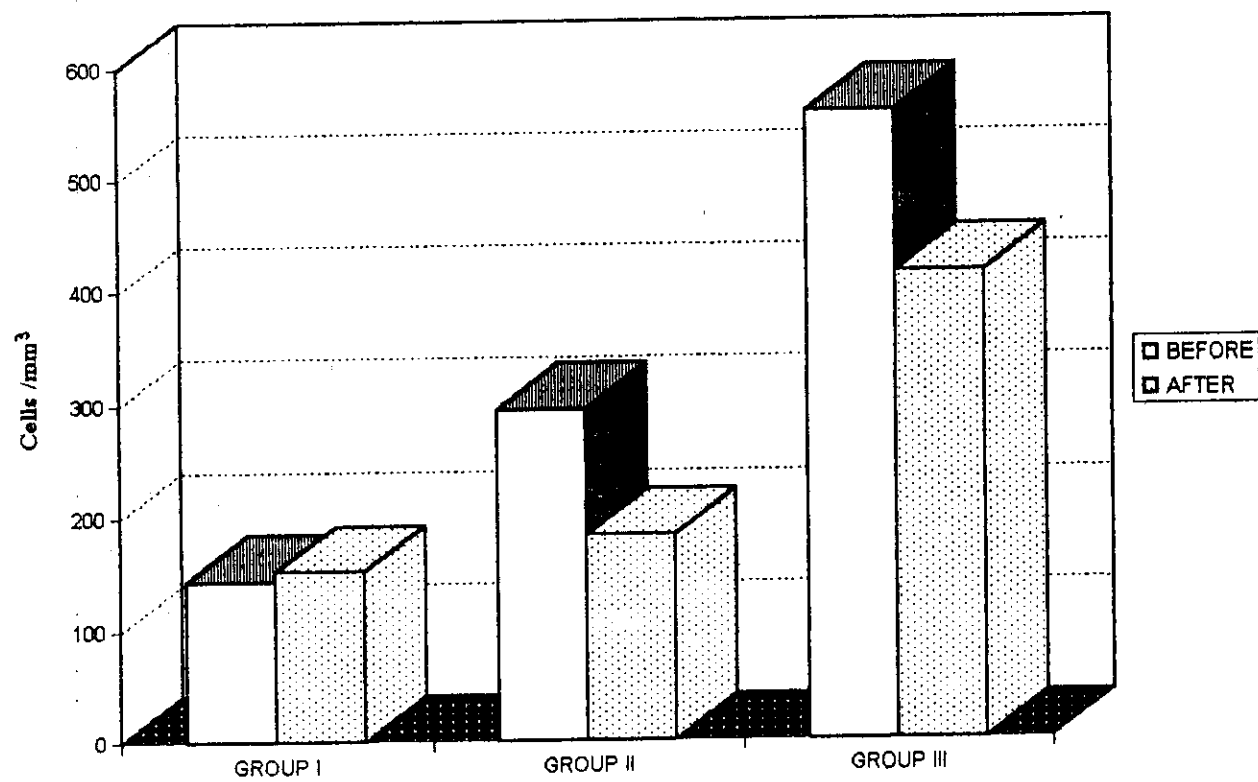
**Table(29): Peripheral blood eosinophilic count before and two months after surgery in group (II)**

| Case No.     | Before      | After |
|--------------|-------------|-------|
| 1            | 320         | 240   |
| 2            | 250         | 180   |
| 3            | 330         | 160   |
| 4            | 290         | 160   |
| 5            | 380         | 200   |
| 6            | 260         | 140   |
| 7            | 260         | 190   |
| 8            | 400         | 250   |
| 9            | 300         | 150   |
| 10           | 330         | 170   |
| 11           | 380         | 120   |
| 12           | 360         | 210   |
| 13           | 240         | 150   |
| 14           | 250         | 160   |
| 15           | 280         | 230   |
| 16           | 400         | 140   |
| 17           | 285         | 190   |
| 18           | 180         | 420   |
| 19           | 270         | 145   |
| 20           | 245         | 160   |
| 21           | 190         | 75    |
| Mean         | 295         | 183   |
| SD. $\pm$    | 64          | 68    |
| SE. $\pm$    | 13.9        | 14.8  |
| t. value     | 5.24        |       |
| p. value     | < 0.05      |       |
| Significance | Significant |       |

**Table(30): Peripheral blood eosinophilic count before and two months after surgery in group (III)**

| Case No.     | Before      | After |
|--------------|-------------|-------|
| 1            | 420         | 450   |
| 2            | 290         | 280   |
| 3            | 780         | 320   |
| 4            | 600         | 240   |
| 5            | 260         | 240   |
| 6            | 940         | 575   |
| 7            | 960         | 1040  |
| 8            | 920         | 430   |
| 9            | 490         | 430   |
| 10           | 460         | 200   |
| 11           | 120         | 100   |
| 12           | 400         | 660   |
| 13           | 820         | 720   |
| 14           | 500         | 600   |
| 15           | 930         | 250   |
| 16           | 315         | 270   |
| 17           | 590         | 570   |
| 18           | 460         | 110   |
| 19           | 360         | 400   |
| Mean         | 559         | 415   |
| SD. $\pm$    | 260         | 236   |
| SE. $\pm$    | 60          | 54    |
| t. value     | 2.56        |       |
| p. value     | < 0.05      |       |
| Significance | Significant |       |

FIG. (15): THE MEAN PERIPHERAL BLOOD EOSINOPHILIC COUNT BEFORE AND TWO MONTHS AFTER SURGERY OF DIFFERENT GROUPS



*In group II* (asymptomatic bronchial hyperreactive patients) analysis of peripheral blood eosinophilic count results according to the type of surgery shows the following ;

Table (31a) shows non significant difference in peripheral blood eosinophilic count between the patients underwent adenoidectomy and the patients underwent tonsillectomy before surgery.

Table (31b) shows non significant difference in peripheral blood eosinophilic count between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy before surgery.

Table (31c) shows non significant difference in peripheral blood eosinophilic count between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy before surgery.

Table (32a) shows non significant difference in peripheral blood eosinophilic count between the patients underwent adenoidectomy and the patients underwent tonsillectomy after surgery.

Table (32b) shows non significant difference in peripheral blood eosinophilic count between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy after surgery.

Table (32c) shows non significant difference in peripheral blood eosinophilic count between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy after surgery.

**able (31) : Statistical Analysis of peripheral blood eosinophilic count in group (II) before surgery**

***(31 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy***

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 303       | 92         | 46        | 1.9     | > 0.05  | N.S |
| T | 319       | 81         | 31        |         |         |     |

***(31 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy***

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 303       | 92         | 46        | 1.96    | > 0.05  | N.S |
| A&T | 276       | 30         | 10        |         |         |     |

***(31 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy***

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 319       | 81         | 31        | 2.1     | > 0.05  | N.S |
| A&T | 276       | 30         | 10        |         |         |     |

**able (32): Statistical Analysis of peripheral blood eosinophilic count in group (II) two months after surgery**

*(32 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy*

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 178       | 123        | 61        | 0.93    | > 0.05  | N.S |
| T | 162       | 55         | 21        |         |         |     |

*(32 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 178       | 123        | 61        | 0.93    | > 0.05  | N.S |
| A&T | 172       | 30         | 9         |         |         |     |

*(32 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 162       | 55         | 21        | 0.07    | > 0.05  | N.S |
| A&T | 172       | 30         | 9         |         |         |     |

*In group III* (asthmatic patients) analysis of peripheral blood eosinophilic count results according to the type of surgery shows the following ;

Table (33a) shows non significant difference in peripheral blood eosinophilic count between the patients underwent adenoidectomy and the patients underwent tonsillectomy before surgery.

Table (33b) shows non significant difference in peripheral blood eosinophilic count between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy before surgery.

Table (33c) shows non significant difference in peripheral blood eosinophilic count between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy before surgery.

Table (34a) shows non significant difference in peripheral blood eosinophilic count between the patients underwent adenoidectomy and the patients underwent tonsillectomy after surgery.

Table (34b) shows non significant difference in peripheral blood eosinophilic count between the patients underwent adenoidectomy and the patients underwent adenotonsillectomy after surgery.

Table (34c) shows non significant difference in peripheral blood eosinophilic count between the patients underwent tonsillectomy and the patients underwent adenotonsillectomy after surgery.

**Table (33) : Statestical Analysis of peripheral blood eosinophilic count in group (III) before surgery**

***(33 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy***

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 546       | 263        | 106       | 0.35    | > 0.05  | N.S |
| T | 569       | 272        | 122       |         |         |     |

***(33 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy***

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 546       | 263        | 106       | 0.05    | > 0.05  | N.S |
| A&T | 560       | 275        | 92        |         |         |     |

***(33 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy***

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 569       | 272        | 122       | 0.63    | > 0.05  | N.S |
| A&T | 560       | 275        | 92        |         |         |     |

**able (34) : Statestical Analysis of peripheral blood eosinophilic count in group (III) two months after surgery**

*(34 a) : The patients underwent adenoidectomy compared to the patients underwent tonsillectomy*

|   | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|---|-----------|------------|-----------|---------|---------|-----|
| A | 420       | 118        | 53        | 0.68    | > 0.05  | N.S |
| T | 428       | 178        | 79        |         |         |     |

*(34 b) : The patients underwent adenoidectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| A   | 420       | 118        | 53        | 1.9     | > 0.05  | N.S |
| A&T | 405       | 262        | 87        |         |         |     |

*(34 c) : The patients underwent tonsillectomy compared to the patients underwent adenotonsillectomy*

|     | $\bar{X}$ | S.D. $\pm$ | SE. $\pm$ | t.value | p.value |     |
|-----|-----------|------------|-----------|---------|---------|-----|
| T   | 428       | 178        | 79        | 1.6     | > 0.05  | N.S |
| A&T | 405       | 262        | 87        |         |         |     |