# *Chapter 4:*

# *Results:*

## Our results showed the following:

- **According to symptoms:** 9 patients (45%) of group I had chronic cough, 3 patients (15%) had hemoptysis and 12 patients (60%) had toxemia. As for group II**:** 5 patients (25%) had chronic cough, 1 patient (5%) had hemoptysis and 3 patients (15%) had toxemia. **Comparison between group I and group II according to symptoms was statistically insignificant as shown in (table 6, figure 5) as P-value was > 0.05.**

- **According to signs:** 13 patients (65%) of group I had crepitations and 5 patients (25%) had signs of toxemia. As for group II**:** 5 patients (25%) had crepitations and 1 patient (5%) had signs of toxemia. **Comparison between group I and group II according to signs was statistically insignificant as shown in (table 7, figure 6) as P-value was > 0.05.**

- Five patients (25%) of group I had X-ray findings, while only 1 patient (5%) of group II had X-ray findings. **Comparison between group I and group II according to X-ray findings was statistically insignificant as shown in (table 8, figure 7) as P-value was > 0.05.**

- **According to age:** the mean and standard deviation ($\bar{X}\pm SD$) for age in group I was 28.4±4.7, in group II was 27.3±5.1 and in control was 28.9±4.6**. Comparison between different groups according to age was statistically insignificant as shown in (table 9, figure 8) as P-value was > 0.05.**

- **According to sex:** in group I male patients were 15 (30%) while female patients were 5 (10%), in group II male patients were 13 (26%) while female patients were 7 (14%) and in control male patients were 8 (16%) while female patients were 2 (4%)**. Comparison between different groups according to sex was statistically insignificant as shown in (table 10, figure 9) as P-value was > 0.05.**

- **According to residence:** in group I urban patients were 14 (28%) while rural patients were 6 (12%), in group II urban patients were 12 (24%) while rural patients were 8 (16%) and in control urban patients were 7 (14%) while rural patients were 3 (6%)**. Comparison between different groups according to residence was statistically insignificant as shown in (table 11, figure 10) as P-value was > 0.05.**

- **Evaluation of Tuberculin test as a diagnostic test in relation to culture was shown in (table 12) as follows:**
  Tuberculin test sensitivity = 94.7%, specificity = 80%, predictive value positive (PVP) = 90% which means that 90% of the disease

positive patients gave positive tuberculin test and predictive value negative (PVN) = 66.7% which means that 66.7% of the disease negative patients gave negative tuberculin test.

- **Evaluation of QFT- Gold IT test as a diagnostic test for TB in relation to culture was shown in (table 13) as follows:**

  QFT- Gold IT test sensitivity = 100%, specificity = 100%, predictive value positive (PVP) = 100% which means that 100% of the disease positive patients gave positive QFT-Gold IT test and predictive value negative (PVN) = 100% which means that 100% of the disease negative patients gave negative QFT- Gold IT test.

- **Agreement between Tuberculin test and QFT-Gold IT test was a good agreement as shown in (table 14),** where the Kappa ($\kappa$) was 0.65 (CI= 0.39-0.91).

- **There was a positive Correlation between Quantiferon level and Severity of infection in sputum,** which was statistically significant as shown in table 15, figure 11: where 'r' (Correlation coefficient) was 0.92 and P-value was <0.05.

- **There was a positive Correlation between Quantiferon level and Cavitations in X-ray,** which was statistically significant as shown in table 15, figure 12: where 'r' (Correlation coefficient) was 0.83 and P-value was <0.05.

*Table (6): Comparison between group I and group II according to symptoms:*

|  | group 1 | | group 2 | | |
|---|---|---|---|---|---|
|  | *No* | *%* | *No* | *%* | *P-value* |
| *Chronic cough* | 9 | 45 | 5 | 25 | |
| *Hemoptysis* | 3 | 15 | 1 | 5 | >0.05 |
| *Toxemia* | 12 | 60 | 3 | 15 | |

*p-value:*

*< 0.05   = Statistically significant*

*> 0.05   = Statistically insignificant*

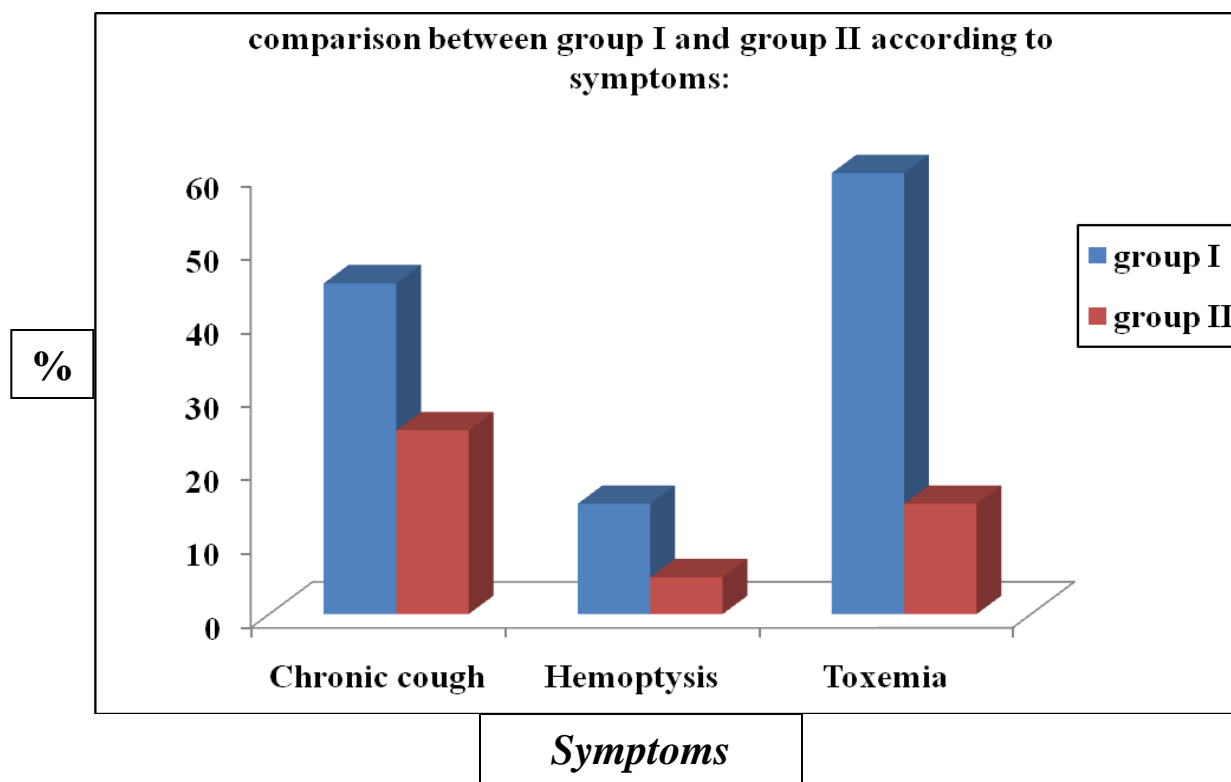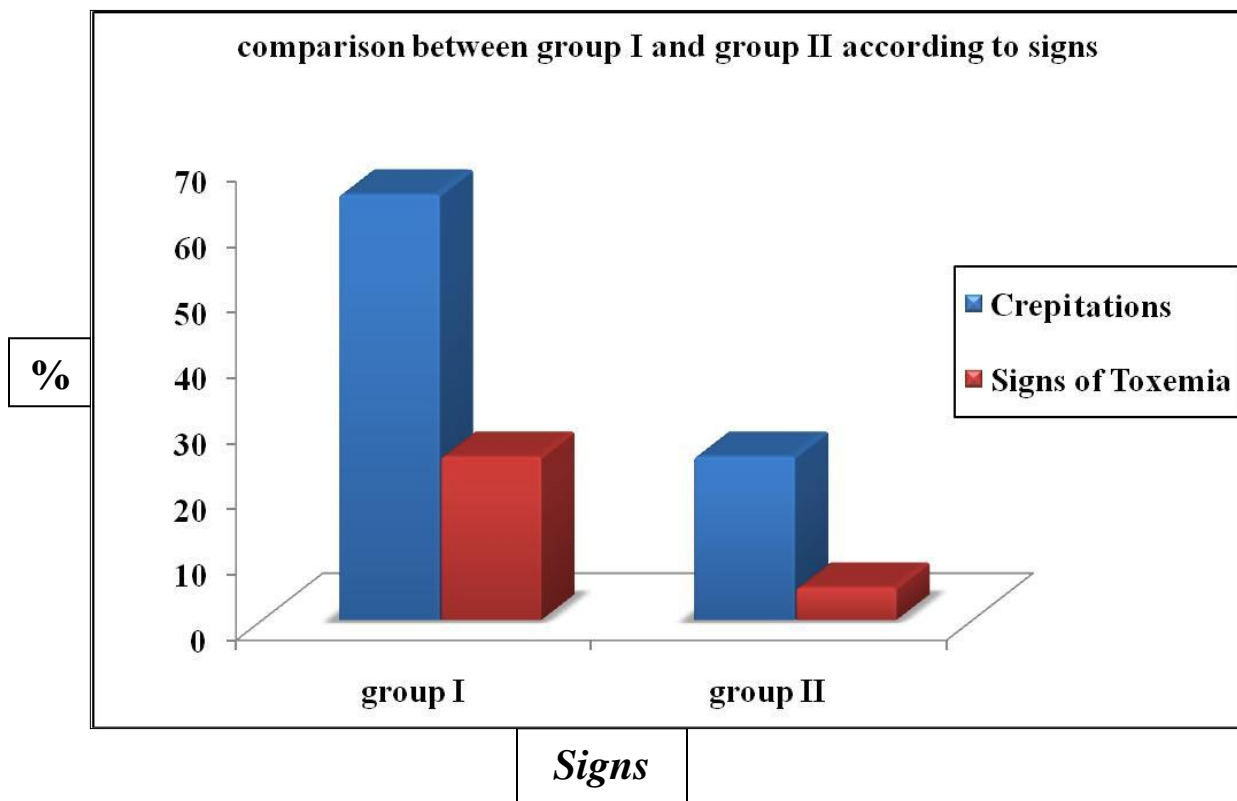*< 0.001 = Highly significant*

*Figure (5): Comparison between group I and group II according to symptoms:*

*Table (7): Comparison between group I and group II according to signs:*

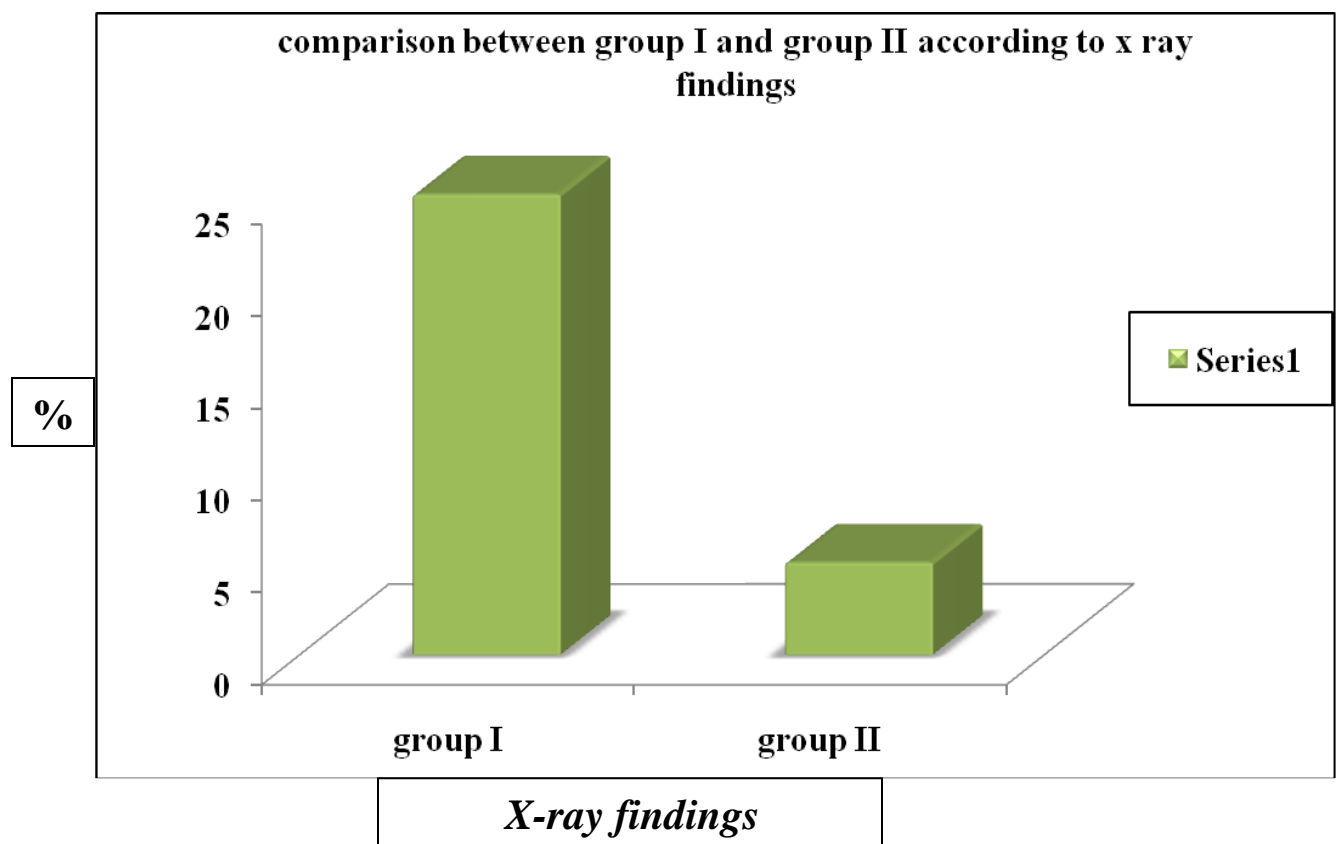|  | group 1 | | group 2 | | |
| --- | --- | --- | --- | --- | --- |
|  | *No* | *%* | *No* | *%* | *P-value* |
| *Crepitations* | 13 | 65 | 5 | 25 | >0.05 |
| *Signs of Toxemia* | 5 | 25 | 1 | 5 | |

*Figure (6): Comparison between group I and group II according to signs:*

## *Table (8): Comparison between group I and group II according to X-ray findings:*
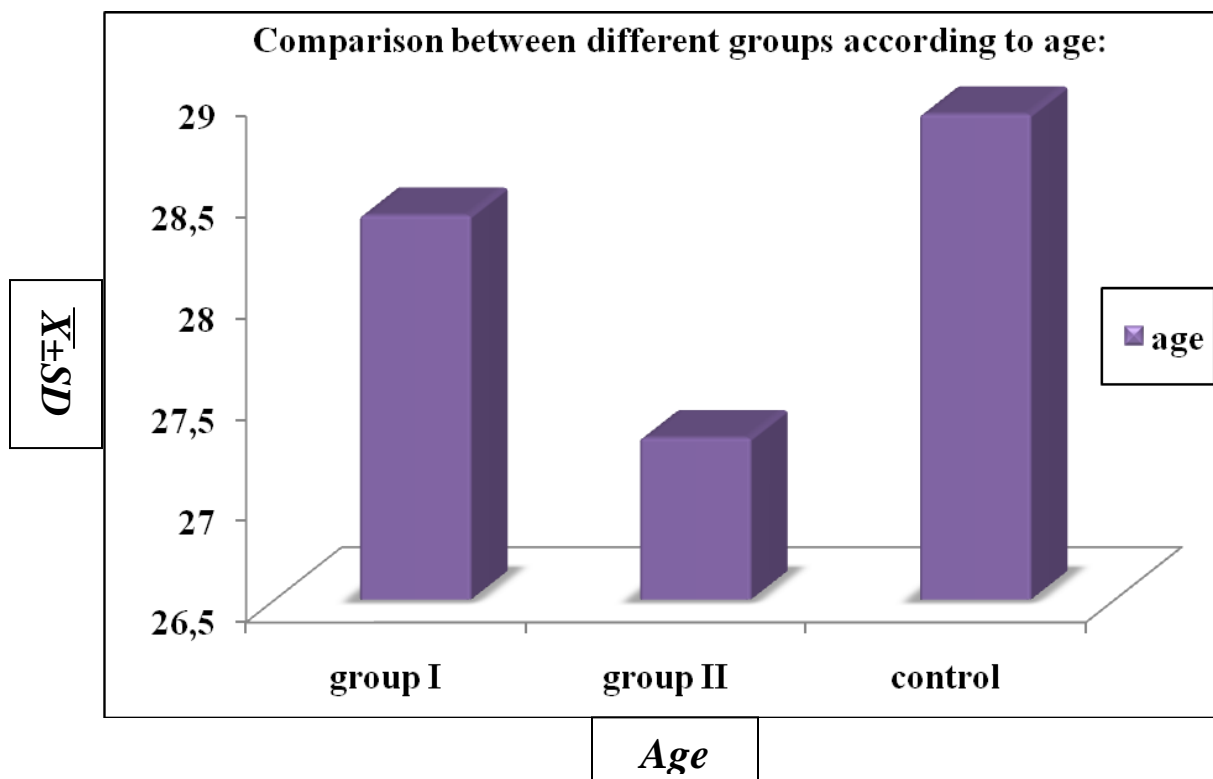
| group 1 | | group 2 | | |
|---|---|---|---|---|
| *No* | *%* | *No* | *%* | *P-value* |
| 5 | 25 | 1 | 5 | >0.05 |

## *Figure (7): Comparison between group I and group II according to X-ray findings:*



comparison between group I and group II according to x ray findings

*Table (9): Comparison between different groups according to age:*

|  | Group 1 $\overline{X} \pm SD$ | Group2 $\overline{X} \pm SD$ | Control $\overline{X} \pm SD$ | P-value |
|---|---|---|---|---|
| *Age* | 28.4±4.7 | 27.3±5.1 | 28.9±4.6 | >0.05 |

*Figure (8): Comparison between different groups according to age:*

*Table (10): Comparison between different groups according to sex:*

| | | Group 1 | | Group2 | | Control | | Total | P-value |
|---|---|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % | | |
| Sex | Male | 15 | 30 | 13 | 26 | 8 | 16 | 36 | >0.05 |
| | Female | 5 | 10 | 7 | 14 | 2 | 4 | 14 | |

*Figure (9): Comparison between different groups according to sex:*



Comparison between different groups according to sex:
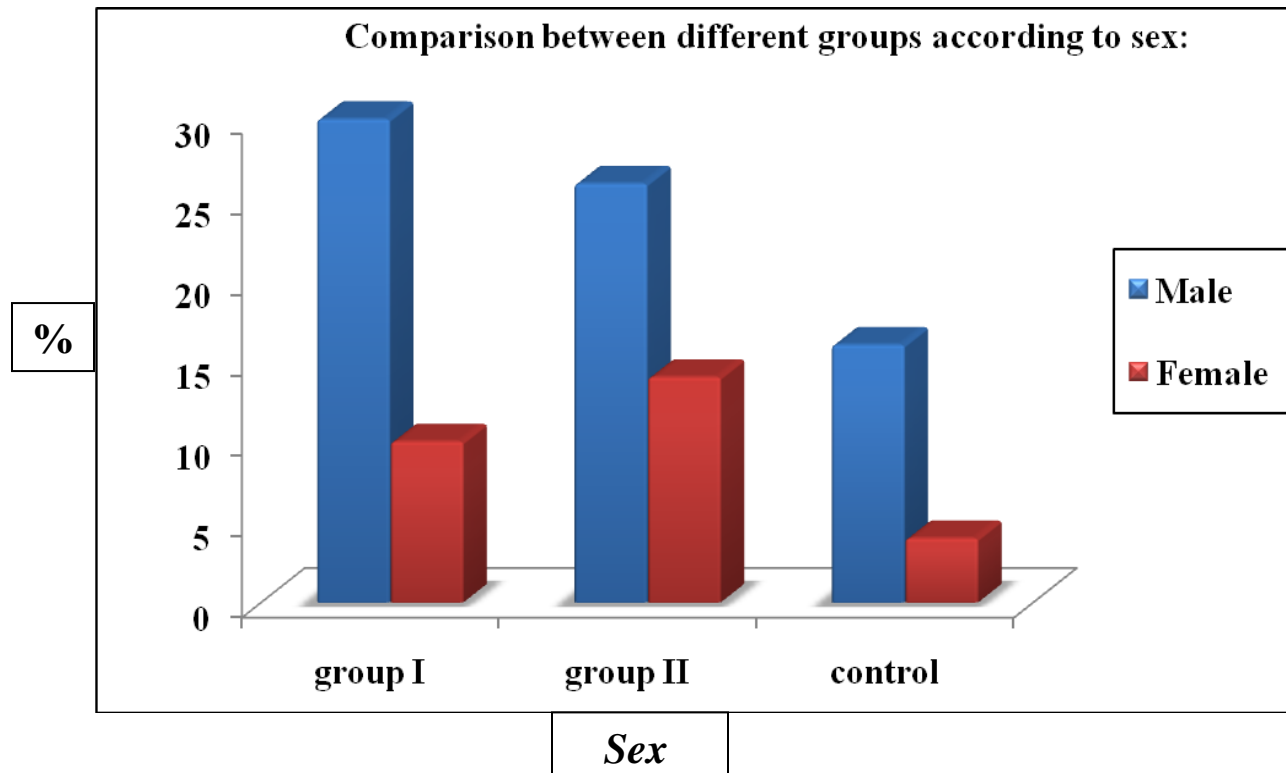
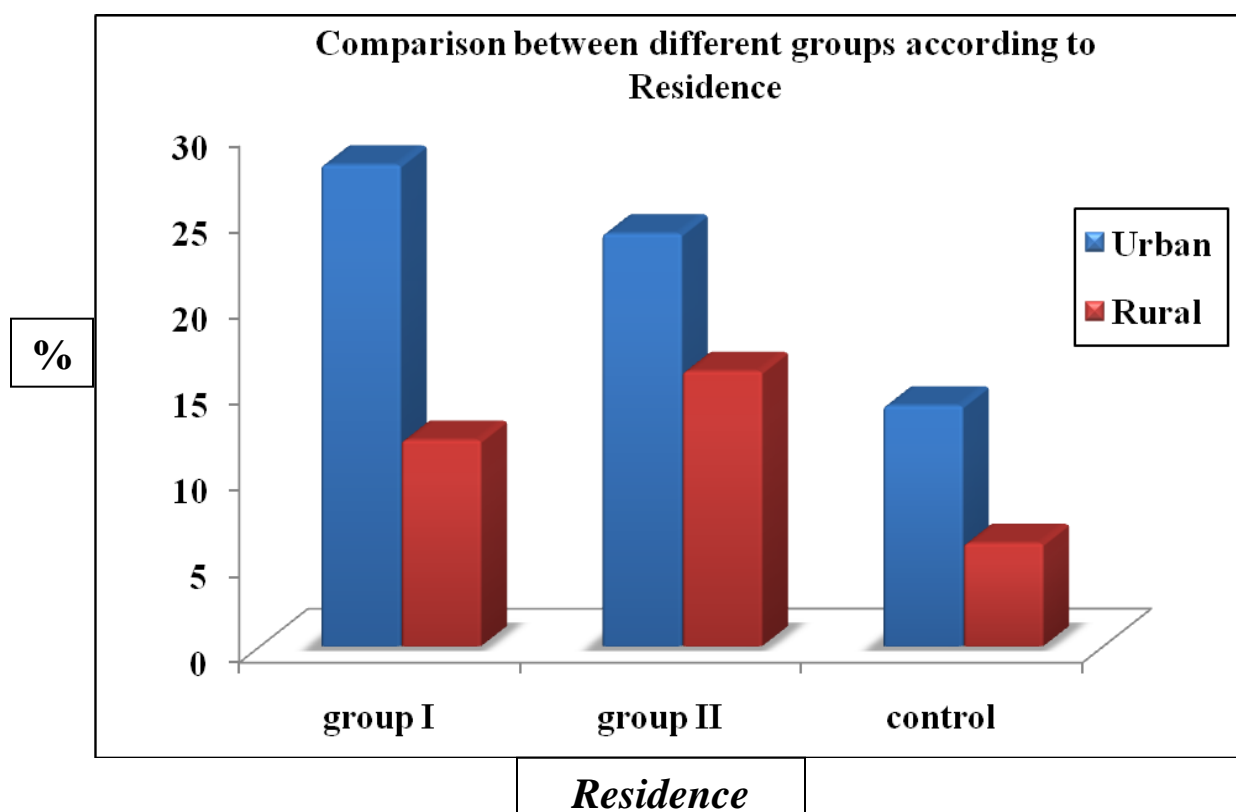*Table (11): Comparison between different groups according to residence:*

| | | Group 1 | | Group2 | | Control | | Total | P-value |
|---|---|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % | | |
| *Residence* | *Urban* | 14 | 28 | 12 | 24 | 7 | 14 | 33 | >0.05 |
| | *Rural* | 6 | 12 | 8 | 16 | 3 | 6 | 17 | |

*Figure (10): Comparison between different groups according to residence:*



*Table (12): Results of tuberculin test in different groups:*

|  | *Results* | *Number of patients* |
|---|---|---|
| Group I | 4 mm | 3 |
|  | 5 mm | 1 |
|  | 12 mm | 4 |
|  | 15 mm | 3 |
|  | 17 mm | 5 |
|  | 18 mm | 4 |
|  |  |  |
| Group II | 2 mm | 1 |
|  | 3 mm | 4 |
|  | 5 mm | 3 |
|  | 11 mm | 4 |
|  | 12 mm | 6 |
|  | 15 mm | 2 |
|  |  |  |
| Control Group | 11 mm | 3 |
|  | 12 mm | 4 |
|  | 13 mm | 2 |
|  | 14 mm | 1 |
|  |  |  |

*Table (13):Relationship between the results of tuberculin and Z.N. results in diseased groups:*

| | | Z.N. | | Total |
|---|---|---|---|---|
| | | Positive | Negative | |
| Group I | Positive tuberculin | 16 | 0 | 16 |
| | Negative tuberculin | 4 | 0 | 4 |
| Group II | Positive tuberculin | 0 | 12 | 20 |
| | Negative tuberculin | 0 | 8 | |

*Table (14): Evaluation  of Tuberculin test as a diagnostic test for TB and   culture  results  in diseased  groups:*

| | | Culture | | Total |
|---|---|---|---|---|
| | | Positive | Negative | |
| Group I | Positive tuberculin | 16 | 0 | 16 |
| | Negative tuberculin | 2 | 2 | 4 |
| Group II | Positive tuberculin | 12 | 0 | 12 |
| | Negative tuberculin | 2 | 6 | 8 |

Sensitivity = 94.7%
Specificity = 80%
PVP        = 90%
PVN        = 66.7

## *Table (15): Relationship between the results of culture and Z.N. in diseased groups:*

| | | Z.N. | | Total |
|---|---|---|---|---|
| | | Positive | Negative | |
| Group I | Positive culture | 18 | 0 | 18 |
| | Negative culture | 2 | 0 | 2 |
| Group II | Positive culture | 0 | 14 | 14 |
| | Negative culture | 0 | 6 | 6 |

### Table (16): Results of Quantiferon levels in different groups:

| | Quantiferon levels in different tubes ( IU/ml ) | | |
|---|---|---|---|
| | Antigen | Mitogen | Nil |
| Group I | 10.85 | 4.64 | 0.16 |
| Group II | 9.9 | 4.23 | 0.22 |
| Control | 0.65 | 2.34 | 0.14 |

### Table (17): Correlation between Quantiferon & degree of Z.N. positivity:

| *Variable* | *r (Correlation coefficient)* | *P-value* |
|---|---|---|
| ***Severity of infection in sputum (Smear positivity)*** | 0.92 | <0.05 |
| | | |

### Table (18): Evaluation of QFT- Gold IT test as a diagnostic test for TB in relation to culture in diseased groups :

| | | *culture* | | *Total* |
|---|---|---|---|---|
| | | *+ve* | *-ve* | |
| ***QFT-Gold IT*** | *+ve* | 32 | 0 | 32 |
| | *-ve* | 0 | 8 | 8 |

| | | | |
|---|---|---|---|
| *Total* | 32 | 8 | 40 |

Sensitivity = 100%
Specificity = 100%
PVP      = 100%
PVN     = 100%

## Table (19): Correlation between Quantiferon &Diameter of cavity in X-ray:

| *Variable* | r (Correlation coefficient) | P-value |
|---|---|---|
| *Cavitations in X-ray (Diameter of cavity)* | 0.83 | <0.05 |

## Table (20): Agreement between Tuberculin test and QFT-Gold IT:

| | | QFT-Gold IT | | *Total* | *κ (Kappa)* |
|---|---|---|---|---|---|
| | | *+ve* | *-ve* | | |
| *Tuberculin test* | *+ve* | 36 | 4 | 40 | 0.65 |
| | *-ve* | 2 | 8 | 10 | (CI= 0.39-0.91) |
| *Total* | | 38 | 12 | 50 | *Good agreement* |

### *Figure (11): Correlation between Quantiferon level and Severity of infection in sputum:*
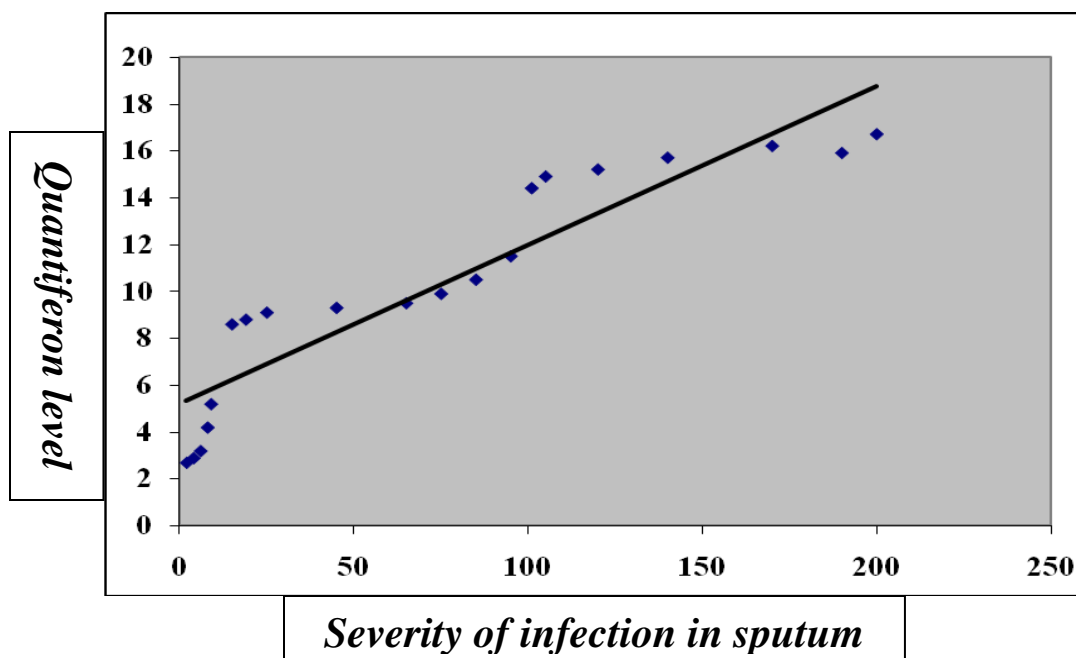


### *Figure (12): Correlation between Quantiferon level and Cavitations in X-ray:*