4. Results

The current study had been conducted on 60 males Sudanese smokers as test group and 40 healthy nonsmokers as control group, the gender and age of test group were matched with control group (age range 25 - 55 years).

Table (4.1) shows highly significant difference between means of serum copper (mg/L) in test group (0.774 ± 0.188) and control group (0.922 ± 0.162), P.value = 0.000, highly significant difference between means of serum magnesium (mg/L) in test group (35.76 ± 8.67) and control group (27.52 ± 4.50), P.value = 0.000, and highly significant difference between means of serum zinc (mg/L) in test group (0.497 ± 0.140) and control group (0.670 ± 0.245), P.value = 0.000.

Figure (4.1) shows positive insignificant correlation between levels of serum copper (mg/L) and number of cigarettes per day,(r= 0.213, P.value= 0.102).

Figure (4.2) shows negative insignificant correlation between levels of serum copper (mg/L) and duration of smoking per year,(r= -0.054, P.value= 0.682).

Figure (4.3) shows positive insignificant correlation between levels of serum magnesium (mg/L) and number of cigarettes per day, (r= 0.243, P.value= 0.061).

Figure (4.4) shows negative insignificant correlation between levels of serum magnesium (mg/L) and duration of smoking per year,(r= -0.099, P.value= 0.450).

Figure (4.5) shows negative weak significant correlation between levels of serum zinc (mg/L) and number of cigarettes per day, (r= -0.271, P.value= 0.036).

Figure (4.6) shows positive insignificant correlation between levels of serum zinc (mg/L) and duration of smoking per year,(r= 0.171, P.value= 0.191).
Table (4.1): Comparison between means of serum copper, magnesium and zinc levels of the test group and control group.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Test group (n= 60)</th>
<th>Control group (n= 40)</th>
<th>P.value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (mg/L)</td>
<td>0.774 ± 0.188</td>
<td>0.922 ± 0.162</td>
<td>0.000</td>
</tr>
<tr>
<td>Magnesium (mg/L)</td>
<td>35.76 ± 8.67</td>
<td>27.52 ± 4.50</td>
<td>0.000</td>
</tr>
<tr>
<td>Zinc (mg/L)</td>
<td>0.497 ± 0.140</td>
<td>0.670 ± 0.245</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The table shows the mean, standard deviation and probability value (P. value). Independent t-test was used for comparison. P.value ≤ 0.05 is considered significant.
Figure (4.1): A scatter plot of the correlation between number of cigarettes per day and serum copper levels (mg/L).

(r = 0.213, P.value = 0.102).
Figure (4.2): A scatter plot of the correlation between the duration of smoking per year and serum copper levels (mg/L).

\( r = -0.054 \), P.value = 0.682.
Figure (4.3): A scatter plot of the correlation between number of cigarettes per day and serum magnesium levels (mg/L).

(r = 0.243, P.value = 0.061).
Figure (4.4): A scatter plot of the correlation between duration of smoking per year and serum magnesium levels (mg/L).
(r= -0.099, P.value= 0.450).
Figure (4.5): A scatter plot of the correlation between number of cigarettes per day and serum zinc level (mg/L).

(r = -0.271, P.value = 0.036).
Figure (4.6): A scatter plot of the correlation between duration of smoking per year and serum zinc levels (mg/L).

\( r = 0.171, P.\text{value} = 0.191 \).