RESULT

This study included (80) patients of different dermatological diseases (psoriasis, seborrheic dermatitis, atopic dermatitis and pityriasis alba) and (20) controls.

I - Psoriatic patients:

20 cases of psoriasis. They are (11) males and (9) females [table 1 and graph I], their age varied between (5) to (60) years, with mean of (36.25) (table 3). (10) with discoid type, (7) with vulgaris type and (3) with flexural type (table 5).

Table (4) shows the comparison between psoriatic patients and control regarding serum Zn, Cu and (Se) concentration in μg/ml.

1) Zinc in serum of psoriatic patients varied between 0.34 μg/ml and 0.53 μg/ml with a means of 0.428 and

S.D. = 0.7305 (standard diviation).

\( t = 6.796. \)

P. Probability = < 0.001. i.e. highly significant.

Statistically significant difference at the level of 0.05% (P < 0.05).

2) Serum (Cu) in psoriatic patients varied between (1.3) μg/ml to (3.01) μg/ml with mean of 1.776 and

S.D. = 0.4992

\( \bar{t} = 5.765 \)

p = < 0.001

i.e. Significant.
3) Serum (Se) in psoriatics patients varied between (60) µg/ml to 200 µg/ml with mean of 114.3 and S.D. 

\[ I = 5.015 \]
\[ P. = < 0.001 \]
\[ i.e. = significant \]

The (5) shows the relation between the clinical type of psoriasis and serum trace elements concentration in psoriatic patients.

**In cases of discoid type:**

1) the mean concentration \( \bar{X} \) of serum zinc 0.449 and S.D. = 0.1671

Minimum concentration = 0.035.

Maximum concentration = 0.41.

2) Serum Copper \( \bar{X} \) = 1.834 and S.D. = 0.5165

Minimum concentration = 1.5

Maximum concentration = 3.01.

3) Serum selenium \( \bar{X} \) = 119.3 and S.D. = 33.2667.

Minimum concentration = 95

Maximum concentration = 113

**In cases of vulgaris type of psoriasis:**

1) The \( \bar{X} \) of serum zinc = 0.3714 and S.D. = 0.0452

Minimum concentration = 0.30.

Maximum concentration = 0.41.

2) \( \bar{X} \) of serum copper = 1.755 and S.D. = 0.5922.

Minimum concentration = 1.3.

Maximum concentration = 3.0
3) $\bar{X}$ of serum selenium 101.14 and S.D. = 26.598.

Minimum concentration = 95
Maximum concentration = 150.

In cases of flexural type of psoriasis.

1) $\bar{X}$ of serum zinc = 0.4733 ± S.D. = 0.055

Minimum concentration = 0.42
Maximum concentration = 0.53.

2) $\bar{X}$ of serum copper = 1.6633 ± S.D. 0.2245.

Minimum concentration = 1.4.
Maximum concentration = 1.85.

(3) $\bar{X}$ of serum selenium = 128.3333 ± S.D. = 45.368.

Minimum concentration = 95
Maximum concentration = 180

* The (t = test) Zinc concentration in clinical types of psoriasis:

1) $t$ between discoid and vulgaris type = 1.397.
   i.e. $P =$ insignificant

2) $t$ between discoid and flexural type = 0.394.
   i.e. $p =$ insignificant.

3) $t$ between vulgaris and flexural type = 2.826.
   i.e. $p =$ significant

* The (t) copper concentration in clinical types of psoriasis,

1) $t$ between discoid and vulgaris = 0.282.
   i.e. $p =$ insignificant

2) $t$ between discoid and flexural = 0.804
   i.e. $p =$ insignificant
3) t between vulgaris and flexural = 0.352.
   i.e. p. = insignificant.

* The (t) selenium concentration in clinical types of psoriasis.

1) t between discoid and vulgaris = 1.247
   i.e. p. = insignificant

2) t between discord and flexural = 0.320.
   i.e. p. = significant.

3) t between vulgaris and flexural type = 0.969.
   i.e. p. = insignificant.

Table (6) shows the comparison between psoriatic patients (n = 5) and controls (n = 5) regarding tissue levels of trace elements (Zn, Cu and Se) in μg/gm of dry weight.

1) Zinc in tissue of psoriatic patients varied between 30 and 60 μg/gm of dry weight with \( \overline{X} \) of 43 and S.D. = 12.0415

   \[ t = 2.414 \]
   \[ p < 0.05 \]
   i.e. = significant.

2) Copper in tissue of psoriatic patients varied between 15 to 35 μg/gm of dry weight with \( \overline{X} \) of 21 and S.D. = 8.2158

   \[ t = 0.085 \]
   \[ p > 0.05 \]
   i.e. insignificant.

3) Selenium in tissue of psoriatic patients varied between 180 to 290μg/gm of dry weight with \( \overline{X} \) of 132 and S.D. = 43.2434.

   \[ t = 0.4124 \]
   \[ p > 0.05 \]
   i.e. insignificant.
II - Seborrhoeic patients:

20 cases of seborrhoeic dermatitis. They are (5) males and (15) females (table 1), their age varied between (25) to (55) years with mean of (38.5) table. 3. The clinical picture varied from mild form (3), moderate from (7) and sever form (7) table (8).

Table (7) shows the comparison between seborrhoeic patients and controls regarding serum Zn, Cu and Se concentration in μg/ml.

1) Zinc in serum of seborrhoeic patients 0.60 μg/ml with a mean of 0.6005 and

   \[ S.D. = 0.0673. \]

   \[ t = 1.237 \]

   \[ p > 0.05 \]

   i.e. insignificant decrease.

2) Copper in seborrhoeic patients serum varied between 0.85 to 1.94 μg/ml with mean of 1.322 and S.D. = 0.2160.

   \[ t = 4.195 \]

   \[ p < 0.001 \]

   i.e. significant.

3) Selenium in seborrhoeic patients serum varied between 110 to 200 μg/ml with mean of \( \bar{X} = 2.550 \) and S.D. = 24.2519

   \[ t = 2.550 \]

   \[ p < 0.05 \]

   i.e. significant.

Table (8) shows the \( \bar{X} \) and S.D. of serum Zn, Cu and Se levels among seborrhoeic dermatitis with different degree of severity.
In cases of mild form of seborrhoic dermatitis (n = 6) shows the follows:

1) Serum Zinc $\bar{X} = 0.5716$ and S.D. = 0.0515
   Minimum concentration = 0.36
   Maximum concentration = 0.49.

2) Serum copper $\bar{X} = 1.20$ and S.D. = 0.2193
   Minimum concentration = 1.1
   Maximum concentration = 1.74.

3) Serum selenium $\bar{X} = 150.1666$ and S.D. = 29.3422.
   Minimum concentration = 110.
   Maximum concentration = 190.

In moderate form of seborrhoic dermatitis (n = 7):

1) $\bar{X}$ of serum zinc = 0.6285 and S.D. = 0.0578.
   Minimum concentration = 0.41
   Maximum concentration = 0.055.

2) $\bar{X}$ of serum copper = 1.3614 and S.D. = 0.1617.
   Minimum concentration = 0.95
   Maximum concentration = 1.39.

3) $\bar{X}$ of serum (Se) = 140.8571 and SD. = 26.767.
   Minimum concentration = 126.
   Maximum concentration = 200

In sever form of seborrhoic dermatitis (n = 7).

1) $\bar{X}$ of serum Zinc = 0.5971 and S.D. = 0.0840.
   Minimum concentration = 0.35
   Maximum concentration = 0.60

2) $\bar{X}$ of serum copper = 1.41 and S.D. = 0.2315
   Minimum concentration = 0.85
   Maximum concentration = 1.39.
3) $\bar{X}$ of serum selenium = 196 and S.D. = 17.1075.
Minimum concentration = 139
Maximum concentration = 180

* The (t) zinc concentration among the clinical degree of seborrhoeic dermatitis.
1) $t$ between mild and moderate form = 1.876.
   i.e. (p) = insignificant increase.
2) $t$ between mild and severe form = 0.853.
   i.e. (p). = insignificant increase.
3) $t$ between moderate and severe form = 0.814.
   i.e. (p). = insignificant increase.

* The (t) copper concentration among the clinical degree of seborrhoeic dermatitis.
1) $t$ between mild and moderate form = 2.00
   p. significant.
2) $t$ between mild and severe form = 1.485
   p. significant.
3) $t$ between moderate and severe form = 0.465.
   p. insignificant increase.

* The (t) selenium concentration among the clinical degree of seborrhoeic dermatitis.
1) $t$ between mild and moderate form = 0.593.
   p. insignificant decrease.
2) $t$ between mild and severe form = 1.261.
   p. insignificant increase.
3) $t$ between moderate and severe form = 0.428
   p. insignificant increase.

Table (9) shows the comparison between seborrhoeic patients ($n =$ 5) and controls (n=5) regarding tissue levels of trace elements (Zn, Cu and
(Se) in \(\mu g/gm\) of dry weight.

1) Zinc level in tissue of seborrhoeic patients varied between 25 to 40 \(\mu g/gm\) of dry weight with \(\bar{X}\) of 32 and S.D. = 5.7008.

\[
\begin{align*}
t &= 0.784 \\
p &> 0.05 \quad \text{i.e. = insignificant increase.}
\end{align*}
\]

2) Copper level in tissue of seborrhoeic patients varied between 15 to 27 \(\mu g/gm\) of dry weight with \(\bar{X}\) of 18 ± S.D. = 5.6568

\[
\begin{align*}
t &= 0.688 \\
p &> 0.05 \quad \text{i.e. = insignificant decrease.}
\end{align*}
\]

3) Selenium level in tissues of seborrhoeic patients varied between 80 to 250 \(\mu g/gm\) of dry weight with \(\bar{X} = 150\) and S.D. = 62.849.

\[
\begin{align*}
t &= 0.169 \\
p &> 0.05 \quad \text{i.e. = insignificant increase.}
\end{align*}
\]
III - Atopic dermatitis patients:

20 cases of atopic dermatitis (AD). They are (12) males and (8) females (table 1) their age varied between (3) to (20) years with mean of (8.65) table (3).

The distribution of atopic patients and controls group according to consanguinity (table 2, figure 2) where shows (8) patient with + ve history of consanguinity between their parents.

(8) patient with mild form of (AD), (7) with moderate form and (5) with sever form (table 11).

Table (10) shows the comparison between atopic patients and controls regarding serum levels of Zn, Cu and Se in μg/ml.

1) Zinc in serum of (AD) patients varied between 0.30 to 0.50 Mg/ml with a mean values of 0.3945 and S.D. = 0.0674.
   
   \[ t = 13.238 \]

   \[ p < 0.001. \]

   i.e. highly significant.

2) Copper in serum of (AD) patients varied between 1.2 to 1.92 μg/ml with a mean of 1.5165 and S.D. = 0.2463.

   \[ t = 5.930 \]

   \[ p < 0.001 \]

   i.e. p highly significant.
3) Selenium in serum of (AD) patients varied between 75 to 269 µg/ml with a mean of 106.1 and S.D. = 22.939.

\[ t = 5.120 \]

\[ p < 0.001 \]
i.e. highly significant.

Table (11) shows the mean \( \bar{X} \) and S.D. of serum trace elements (Zn, Cu and Se) among AD patients with different degree of severity.

In cases of mild form of AD (8) show the following:

1) \( \bar{X} \) of serum level of zinc = 0.448 and S.D. = 0.0399.
   Minimum concentration = 0.36.
   Maximum concentration = 0.50.

2) \( \bar{X} \) of serum copper level = 1.3062 and S.D. = 0.0834.
   Minimum concentration = 1.2
   Maximum concentration = 1.4.

3) \( \bar{X} \) of serum level of selenium = 99.142 and S.D. = 13.667.
   Minimum concentration = 80
   Maximum concentration = 120

In case of moderate form of AD (n = 7) show the following.

1) \( \bar{X} \) of serum level of zinc = 0.3928 and S.D. = 0.0558.
   Minimum concentration = 0.30.
   Maximum concentration = 0.49.

2) \( \bar{X} \) of serum level of copper = 1.4625 and S.D. = 0.1562.
   Minimum concentration = 1.28
   Maximum concentration = 1.74.

3) \( \bar{X} \) of serum level of selenium = 112.25 and S.D. = 32.216.
   Minimum concentration = 86
   Maximum concentration = 188.
In cases of severe form of AD (n = 5) show the following:

1) $X$ of serum level of Zinc = 0.314 and S.D. = 0.026.
   Minimum concentration = 0.30
   Maximum concentration = 0.31.

2) $X$ of serum copper level = 1.876 and S.D. = 0.0502
   Minimum concentration = 1.80
   Maximum concentration = 1.92.

3) $X$ of serum selenium level = 106.0 and S.D. = 15.272.
   Minimum concentration = 85
   Maximum concentration = 120

* The t zinc concentration in clinical types of AD:

1) $t$ between mild and moderate form = 2.095
   P. significant.

2) $t$ between mild and severe form = 7.220.
   P. highly significant.

3) $t$ between moderate and severe form = 3.272.
   P. significant.

* The t copper concentration in clinical types of AD.

1) $t$ between mild and moderate form = 2.368.
   P. significant.

2) $t$ between mild and severe form = 15.375
   P. significant.

3) $t$ between moderate and severe form = 6.546.
   P. highly significant.

* The t selenium concentration among clinical types of (AD):

1) $t$ between mild and moderate = 1.0
   p. insignificant increase.

2) $t$ between mild and severe = 0.488
   p. insignificant increase.

3) $t$ between moderate and severe = 0.737.
   p. insignificant decrease.
Table (12) shows the comparison between AD patients (n = 5) and controls (n = 5) regarding tissue levels of trace elements (Zn, Cu and Se) in μg/gm dry weight.

1) Zinc level in tissue of AD patients varied between 20 to 40 μg/gm of dry weight with $\bar{X}$ of 34 and S.D. = 8.2158.
   $\begin{align*}
   t &= 1.088 \\
   p &> 0.05 \text{ insignificant decrease.}
   \end{align*}$

2) Copper level in tissue of AD patients varied between 20 to 40 μg/gm of dry weight with $\bar{X}$ of 33 an S.S. = 8.3666
   $\begin{align*}
   t &= 2.652 \\
   P &< 0.05 \\
   \text{i.e. significant.}
   \end{align*}$

3) Selenium level in tissue of AD patients varied from 80 to 200 μg/gm of dry weight with $\bar{X} = 144$ and S.D. = 53. 1977
   $\begin{align*}
   t &= 0 \\
   p &--
   \end{align*}$

IV - Pityriasis alba patients:

20 cases of pityriasis alba. They are (12) males and (8) females (table 14 figure 1), their ages varied between (3) to (15) years with mean of 9.55 (table 3).

(8) with mild form, (8) moderate form and (4) sever form (table 14). Table (13) shows the comparison between pityriasis alba patients and controls regarding serum concentration of Zn, Cu and Se in μg/ml.
1) Zinc in serum of pityriasis alba patients varied between 0.32 to 0.55 μg/ml with a mean of 0.419 and S.D. = 0.0667.
   \[ t = 4.595 \]
   \[ p < 0.001 \]
   i.e. highly significant.

2) Copper in serum of pityriasis alba patients varied between 0.85 to 1.62 with mean of 1.1045 and D.S. = 0.2899.
   \[ t = 3.260 \]
   \[ p < 0.01 \]
   i.e. significant.

3) Selenium in serum of pityriasis alba patients varied between 80 to 300 μg/ml with a mean of 124.80 and S.D. = 51.8891.
   \[ t = 3.470 \]
   \[ p < 0.01 \]
   i.e. significant.

Table (14) shows \( \bar{X} \) and S.D. of trace elements (Zn, Cu and Se) among pityriasis alba patients with different degree of severity.

**In Cases of mild form \( (n = 8) \) shows the following.**

1) \( \bar{X} \) of serum zinc in mild form = 0.4037 and S.D. = 0.0578.
   Minimum concentration = 0.33
   Maximum concentration = 0.50

2) \( \bar{X} \) of serum copper in mild form = 1.2612 and S.S. 0.3119
   Minimum concentration = 1.10
   Maximum concentration = 1.90

3) \( \bar{X} \) of serum selenium in mild form =128.875 and S.D. = 58.516.
   Minimum concentration = 90
   Maximum concentration = 200
In cases of moderate form of pityriasis alba (n = 8) show the following:

1) $\bar{X}$ of serum Zn in moderate form = 0.4525 and S.D. = 0.0664.
   Minimum concentration = 0.32
   Maximum concentration = 0.55

2) $\bar{X}$ of serum Cu in moderate form = 1.0612 and S.D. = 0.2589
   Minimum concentration = 0.85
   Maximum concentration = 1.62

3) $\bar{X}$ of serum Zn in moderate form = 124.625 and S.D. = 73.034
   Minimum concentration = 100
   Maximum concentration = 300

In cases of severe form of pityriasis alba (n = 4) show the following:

1) $\bar{X}$ of serum Zn in severe form = 0.3975 and S.D. = 0.0512
   Minimum concentration = 0.32
   Maximum concentration = 0.43

2) $\bar{X}$ of serum Cu in severe form = 0.905 and S.D. = 0.1452
   Minimum concentration = 0.75
   Maximum concentration = 0.99

3) $\bar{X}$ of serum Se in severe form = 120.75 and S.D. = 25.4738
   Minimum concentration = 88
   Maximum concentration = 155

* The (t) zinc concentration in clinical degrees of pityriasis alba.

1) t between mild and moderate form = 1.567
   p = insignificant increase.

2) t between mild and severe form = 0.799
   p = insignificant decrease.

3) t between moderate and severe form = 2.159
   p = significant.
* The (t) copper concentration in clinical degrees of pityriasis alba:
1) t between mild and moderate form = 1.395
   \( p = \) insignificant increase.
2) t between moderate and severe form = 1.337
   \( p = \) insignificant decrease.
3) t between mild and severe form = 2.698
   \( p = \) significant

* The (t) selenium concentration in clinical degrees of pityriasis alba.
1) t between mild and moderate form = 0.145
   \( p = \) insignificant decrease.
2) t between mild and severe form = 0.435
   \( p = \) insignificant decrease.
3) t between moderate and severe form = 0.134
   \( p = \) insignificant decrease.

Table (15) shows the comparison between pityriasis alba patients \((n = 5)\) and controls \((n = 5)\) regarding tissue level of trace elements (Zn, Cu and Se) in \( \mu g/gm \) of dry weight.

1) Zinc in tissue of pityriasis alba patients varied between 25 to 30 \( \mu g/gm \) of dry weight with \( X \) of 28 and S.D. = 2.121
   \[ t = 2.108 \]
   \( p > 0.05 \) insignificant decrease.

2) Copper in tissues of pityriasis alba patients varied between 40 to 60 \( \mu g/gm \) dry weight with \( X \) of 49 and S.D. = 7.4161
   \[ t = 6.539 \]
   \( p < 0.001 \)
   i.e. significant increase.
3) Selenium in tissues of pityriasis alba patients varied between 100 to 200 μg/gm dry weight with $X$ of 142 and S.D. = 42.0713

$t = 0.069$

$p > 0.05$

i.e. insignificant decreased

Table (16) shows the correlation coefficient ($r$) and significant values ($p$) of serum and tissue (Zn) among the studied groups.

1) In psoriasis ($r = 0.2432$ and $P > 0.05$, i.e. insignificant.

2) In seborrhoeic dermatitis ($r = 0.38673$ and $p < 0.05$

i.e. insignificant

3) In atopic dermatitis ($r = 0.24263$ and $P > 0.05$

i.e. insignificant

4) In pityriasis alba ($r = 0.08350$ and $P > 0.05$

i.e. insignificant.

Table (17) shows ($r$) and ($p$) of serum and tissue (Cu) among the studied group.

1) In psoriasis ($r = 0.12025$ and $P . 0.05$

i.e. insignificant

2) In seborrhoeic dermatitis ($r = 0.02734$ and $P > 0.05$

i.e. insignificant

3) In atopic dermatitis ($r = 0.10457$ and $p > 0.05$

i.e. insignificant

4) In pityriasis alba ($r = 0.41039$ $P > 0.05$ i.e. significant

Table (18) shows ($r$) and ($p$) of serum and tissues (Se) in studied groups.
1) In psoriasis \( r = 0.36403 \) and \( P < 0.05 \)
   i.e. insignificant.
2) In seborrhoeic dermatitis \( r = 0.04891 \) and \( P < 0.05 \)
   i.e. insignificant.
3) In atopic dermatitis \( r = 0.41322 \) and \( P < 0.0 \)
   i.e. significant
4) In pityriasis alba \( r = 0.26397 \) and \( p > 0.05 \)
   i.e. significant.
Table (3): Showed mean values $(\bar{X}) \pm S.D.$ of ages among the studied groups compared with controls:

<table>
<thead>
<tr>
<th>Studied group</th>
<th>$\bar{X} \pm SD$</th>
<th>Test of significance vessels control</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Psoriasis</td>
<td>36.25 ± 15.234</td>
<td>t 0.497, p &gt; 0.05</td>
</tr>
<tr>
<td>2- Seborrhoeic dermatitis</td>
<td>38.5 ± 9.190</td>
<td>t 0.809, p &gt; 0.05</td>
</tr>
<tr>
<td>3- Atopic dermatitis</td>
<td>8.65 ± 5.132</td>
<td>t 1.038, p &gt; 0.05</td>
</tr>
<tr>
<td>4- Pityriasis alba</td>
<td>9.55 ± 4.058</td>
<td>t 1.176, p &gt; 0.05</td>
</tr>
<tr>
<td>5- Control [I]</td>
<td>39.14 ± 14.872</td>
<td>--</td>
</tr>
<tr>
<td>6- Control [II]</td>
<td>12.48 ± 7.334</td>
<td>--</td>
</tr>
</tbody>
</table>

Table (4): Comparison between psoriatic patients and control regarding serum zinc (Zn), copper (Cu) and selenium (Se) concentration in µg/ml.

<table>
<thead>
<tr>
<th>Trace element</th>
<th>St. group</th>
<th>Psoriatic patient (n = 20)</th>
<th>Control (n = 10)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{X} \pm S.D.$</td>
<td>$\bar{X} \pm S.D.$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. Zinc</td>
<td>0.428 ± 0.1245</td>
<td>0.7305 ± 0.1563</td>
<td>6.796*</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>S. Cu</td>
<td>1.776 ± 0.4992</td>
<td>0.9281 ± 0.041</td>
<td>5.765*</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>S. Se</td>
<td>114.3 ± 32.7463</td>
<td>189.49 ± 41.37</td>
<td>5.015*</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
</tbody>
</table>

S. (serum).
Table (7): Comparison between seborrhoeic patients and controls regarding serum (Zn), (Cu) (Se), concentration in µg/ml.

<table>
<thead>
<tr>
<th>St. group</th>
<th>Seborrhoeic patients (n = 20)</th>
<th>Control (n = 10)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Zn</td>
<td>0.66.5 ± 0.0673</td>
<td>0.730 ± 0.087</td>
<td>1.237</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>S. Cu</td>
<td>1.322 ± 0.2160</td>
<td>0.9249 ± 0.1935</td>
<td>4.195</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>S. Se</td>
<td>148.95 ± 24.2519</td>
<td>189.37 ± 45.771</td>
<td>2.550</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

Table (8): X and S.D. of serum (Zn, Cu, and Se) levels among seborrhoeic dermatitis with different degrees of severity.

<table>
<thead>
<tr>
<th>Seborrhea patients</th>
<th>trace elements</th>
<th>Zinc X ± S.D.</th>
<th>Copper X ± S.D.</th>
<th>Selenium X ± S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I - Mild</td>
<td>(n = 6)</td>
<td>0.5716 ± 0.0515</td>
<td>1.4183 ± 0.2193</td>
<td>150.1666 ± 29.3422</td>
</tr>
<tr>
<td>II- Moderate</td>
<td>(n = 7)</td>
<td>0.6285 ± 0.0578</td>
<td>1.2014 ± 0.1617</td>
<td>140.8571 ± 26.767</td>
</tr>
<tr>
<td>III - Sever</td>
<td>(n = 7)</td>
<td>0.5971 ± 0.0840</td>
<td>1.36 ± 0.2315</td>
<td>156 ± 17.1075</td>
</tr>
<tr>
<td>test of significance</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>I &amp; II</td>
<td>1.876</td>
<td>2.00*</td>
<td>0.593</td>
<td></td>
</tr>
<tr>
<td>II &amp; III</td>
<td>0.814</td>
<td>1.485</td>
<td>1.261</td>
<td></td>
</tr>
<tr>
<td>I &amp; III</td>
<td>0.853</td>
<td>0.465</td>
<td>0.428</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at the level of 0.05% (P < 0.05).
Table (9): Comparison between sebarrhoeic patients and controls regarding tissue levels of trace elements (Zn, Cu and Se) in mg/gm of dry weight.

<table>
<thead>
<tr>
<th>Studied group</th>
<th>Seborrheic patients (n = 5)</th>
<th>Controls (n = 5)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X ± S.D.</td>
<td>X ± S.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1- Zinc</td>
<td>32 ± 5.7008</td>
<td>30 ± 0.0</td>
<td>0.784</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>2- Copper</td>
<td>5.5 ± 5.6568</td>
<td>6.1 ± 6.2689</td>
<td>0.688</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>3- Selenium</td>
<td>103 ± 62.849</td>
<td>100 ± 48.27</td>
<td>0.169</td>
<td>&gt; 0.05</td>
</tr>
</tbody>
</table>

Table (10): Comparison between atopic patients and controls regarding serum Zn, Cu and (Se) concentration in µg/ml.

<table>
<thead>
<tr>
<th>St group</th>
<th>Atopic patients (n = 20)</th>
<th>Controls (n = 10)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum trace</td>
<td>X ± S.D.</td>
<td>X ± S. D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>elements.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. Zn</td>
<td>0.394 ± 0.0674</td>
<td>0.9432 ± 0.1221</td>
<td>13.238</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>S. Cu</td>
<td>1.5165 ± 0.2463</td>
<td>0.9964 ± 0.2158</td>
<td>5.930</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>S. Se</td>
<td>106.1 ± 22.939</td>
<td>186.27 ± 4.7744</td>
<td>5.120</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>
Table (11): $\bar{X}$ and S.D. of serum trace elements (Zn, Cu, Se) among atopic patients with different degrees of severity.

<table>
<thead>
<tr>
<th>Trace element</th>
<th>Zinc $X \pm \text{S.D.}$</th>
<th>Copper $X \pm \text{S.D.}$</th>
<th>Selenium $X \pm \text{S.D.}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atopic patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I Mild (n = 8)</td>
<td>0.448 ± 0.0399</td>
<td>1.3062 ± 0.0834</td>
<td>99.142 ± 13.667</td>
</tr>
<tr>
<td>II Moderate (n = 7)</td>
<td>0.3928 ± 0.0558</td>
<td>1.4625 ± 0.1562</td>
<td>112.25 ± 32.216</td>
</tr>
<tr>
<td>III Sever (n = 5)</td>
<td>0.314 ± 0.026</td>
<td>1.876 ± 0.0502</td>
<td>106.0 ± 15.575</td>
</tr>
<tr>
<td>Test of significance between</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>I &amp; II</td>
<td>2.095</td>
<td>2.368</td>
<td>1.0</td>
</tr>
<tr>
<td>II &amp; III</td>
<td>3.272*</td>
<td>6.546 **</td>
<td>0.737</td>
</tr>
<tr>
<td>I &amp; III</td>
<td>7.220 **</td>
<td>15.375 **</td>
<td>0.488</td>
</tr>
</tbody>
</table>

* Statistically significant differences at the level p. of 0.05% ($P < 0.05$)

** Significant of the level of 0.01% ($P < 0.01$).

Table (12): comparison between atopic patients and controls regarding tissue levels of trace elements (Zn, Cu and Se) in µg/gm dry weight.

<table>
<thead>
<tr>
<th>Studied group</th>
<th>Atopic patients (n = 5)</th>
<th>Controls (n = 5)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc</td>
<td>34 ± 8.2158</td>
<td>80.0 ± 0.0</td>
<td>1.088</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Copper</td>
<td>9 ± 8.3666</td>
<td>6.1 ± 6.2689</td>
<td>2.652</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Selenium</td>
<td>100 ± 53.1977</td>
<td>100 ± 48.27</td>
<td>0</td>
<td>--</td>
</tr>
</tbody>
</table>
Table (13): Comparison between pityriasis alba and controls regarding serum concentration of Zn, Cu, Se in μg/ml.

<table>
<thead>
<tr>
<th>St. group</th>
<th>Pityriasis alba patients (n=20)</th>
<th>Controls (n = 10)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum trace elements</td>
<td>X ± S.D.</td>
<td>X ± S.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. Zn</td>
<td>0.419 ± 0.0667</td>
<td>0.949 ± 0.3339</td>
<td>4.595</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>S. Cu</td>
<td>0.4545 ± 0.2899</td>
<td>0.9922 ± 0.2734</td>
<td>3.260</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>S. Se</td>
<td>124.80 ± 51.8891</td>
<td>186.63 ± 40.3241</td>
<td>3.470</td>
<td>&lt; 0.01</td>
</tr>
</tbody>
</table>

Table (14): X and S.D. of trace elements (Zn, Cu, Se) among pityriasis alba with different degree of severity.

<table>
<thead>
<tr>
<th>Trace element</th>
<th>Zinc</th>
<th>Copper</th>
<th>Selenium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pityriasis patient</td>
<td>X ± S.D.</td>
<td>X ± S.D.</td>
<td>X ± S.D.</td>
</tr>
<tr>
<td>I Mild (n = 8)</td>
<td>0.4037 ± 0.0578</td>
<td>0.5612 ± 0.3119</td>
<td>128.875 ± 38.516</td>
</tr>
<tr>
<td>II Moderate (n = 8)</td>
<td>0.4525 ± 0.0664</td>
<td>0.6612 ± 0.2589</td>
<td>124.625 ± 73.034</td>
</tr>
<tr>
<td>III Sever (n = 4)</td>
<td>0.3775 ± 0.0512</td>
<td>0.305 ± 0.1452</td>
<td>120.75 ± 25.4738</td>
</tr>
</tbody>
</table>

Test of significance:

<table>
<thead>
<tr>
<th></th>
<th>I &amp; II</th>
<th>II &amp; III</th>
<th>II &amp; III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>1.567</td>
<td>0.395</td>
<td>0.145</td>
</tr>
<tr>
<td></td>
<td>2.159*</td>
<td>1.337</td>
<td>0.134</td>
</tr>
<tr>
<td></td>
<td>0.799</td>
<td>2.698*</td>
<td>0.435</td>
</tr>
</tbody>
</table>

* Statistically significant difference at the level of 0.05% (P < 0.0).
Table (15): Comparison between pityriasis alba patients and controls regarding tissue level of trace elements (Zn, Cu, Se) in μg/gm dry weight.

<table>
<thead>
<tr>
<th>Studied group</th>
<th>Pityriasis alba patient (n = 5)</th>
<th>Controls (n = 5)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trace elements</td>
<td>X ± S.D.</td>
<td>X ± S.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc</td>
<td>28 ± 2.121</td>
<td>30 ± 0.0</td>
<td>2.108</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Copper</td>
<td>12 ± 7.9161</td>
<td>6.1 ± 6.2684</td>
<td>6.539</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Selenium</td>
<td>99 ± 42.0713</td>
<td>100 ± 48.27</td>
<td>0.069</td>
<td>&gt; 0.05</td>
</tr>
</tbody>
</table>

Table (16): Correlation coefficient (r) and significant values (P) of serum and tissue (Zn) in studied groups.

<table>
<thead>
<tr>
<th>Serum zinc in studied group</th>
<th>Tissue zinc</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psoriasis</td>
<td></td>
<td>0.2432</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Seborrhoeic dermatitis</td>
<td></td>
<td>0.38673</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Atopic dermatitis</td>
<td></td>
<td>0.24263</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Pityriasis alba</td>
<td></td>
<td>0.08350</td>
<td>&gt; 0.05</td>
</tr>
</tbody>
</table>
Table (17): Correlation coefficient (r) and probability values (p) between serum and tissue (Cu) among the studied group.

<table>
<thead>
<tr>
<th>Serum Cu in studied group</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psoriasis</td>
<td>0.12025</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Seborrhoeic dermatitis</td>
<td>0.02734</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Atopic dermatitis</td>
<td>0.10457</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Pityriasis alba</td>
<td>0.41039</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

Table (18): Correlation coefficient (r) and probability values (P) of serum and tissues (Se) in studied groups.

<table>
<thead>
<tr>
<th>Serum Se in studied group</th>
<th>r</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psoriasis</td>
<td>0.36403</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Seborrhoeic dermatitis</td>
<td>0.04891</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Atopic dermatitis</td>
<td>0.41322</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Pityriasis alba</td>
<td>0.26397</td>
<td>&gt; 0.05</td>
</tr>
</tbody>
</table>
Fig. (1): Sex distribution among the studied groups.
Fig.(2): Consanguinity among cases of atopic dermatitis and controls.

Atopic patients

Present 8
Absent 12

60% 40%

Present 5
Absent 5

50% 50%
Fig. (3): Serum selenium (µg/ml) among psoriatic patients and their controls.