Some Biochemical parameters Of People With Atopic Eczema And There Comparison With Normal People

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Abstract

The present study aimed to identify the biochemical changes in sera of patients with Atopic Eczema, which included some blood analysis included serum urea, uric acid, creatinine, cholesterol, blood glucose, albumin, total protein, calcium, GPT, ALP, total serum bilirubin. Samples were collected from 19 August to 19 December in Salaheddin Hospital in Tikrit city, the study included 94 sample, 65 from patients with Atopic Eczema, and 29 healthy people as a control group, the results were compared between the Atopic Eczema patients group and the healthy control group, and there was elevation in blood urea, uric acid, creatinine, total protein, GPT, ALP, TSB, (34.9 ± 22.10), (5.49 ± 4.38), (0.788 ± 0.669), (7.34 ± 6.41), (13.38 ± 6.96), (13.63 ± 8.52), (0.831 ± 0.190), respectively. And there was no elevation in total albumin, cholesterol, calcium, blood glucose, (4.595 ± 4.321), (161.5 ± 148.1), (8.96 ± 9.13), (109.3 ± 105.3), respectively when compared between patients group and control group.

Introduction

Atopic Eczema (AE) It is one of the most common skin diseases affecting infants, children and a small group of adults who have a chronic or newly developed AE. The symptoms are the appearance of itching and redness of the skin to get roughness in the area of infection, but these symptoms vary from person to person according to certain circumstances of the environment outside and inside the skin in the case of the injury either chronic or acute, and other minor injuries with atopic eczema like skin infection (bacterial, viral, fungal), Malignant tumors, genetic and immune disorders [1].

Now found that the incidence of AE in children is possible And with a probability of 30% can develop the incidence of asthma during lifetime[2], AE can occur in children in age of 1.5 to 2 years and only 3% of 5 years old diagnosed with AE [3]. Atopic Eczema is usually inheritance between families, so if one of the parents have eczema so one of their kids would have eczema, usually, the symptoms of eczema coincide from severe to less severe and then return to become acute again, as the continuous itching of the patient causes sleep disturbance of the patient causing fatigue and lack of sleeping [4].

Diagnosis of the infection is usually done by knowing the history of the family in the incidence of dermatitis, which is the most important component of the diagnosis and through the symptoms and signs of the disease on the skin there is no test to diagnose the disease, as well as if it began before the age of two years or that there are any other related diseases such as asthma or allergies towards certain foods [5], there is no certain way to treat eczema but can be avoided by keep away from irritant substances like cosmetics and as well as food that irritant the eczema, and the moisturizers as well as some creams can be used to reduce itching and redness [6].

The aim of the study

1. study the effect of eczema on the blood glucose concentration level of patients with eczema by analyzing blood glucose and comparing it with healthy people.
2. find out how affected the kidney function in eczema patients is by measuring a number biochemical parameters (urea, uric acid, creatinine, total protein) and comparing it with healthy people.
3. study the effect of the eczema on the liver function by analyzing GOT, GPT, ALP, enzyme activity and total serum bilirubin concentration in the blood and comparing it with healthy people.
4. Study the effect of eczema on patients heart and comparing it with healthy people.
5. analyzing the calcium level concentration in the eczema patients blood and comparing it with healthy people.
6. Knowing the albumin concentration level in the blood of eczema patients.

Patients and methods
The study included 65 patients with atopic eczema, 36 female and 29 male and 29 healthy people (control) and placed in three age groups. 1. Age from 1-20 years. 2. Age 21-40 years. 3. Age 41-60 years. The patients diagnosed with eczema by a dermatologist at Salaheldin General Hospital, the samples were taken and placed in a centrifuge to separate the serum from the rest of the blood components and to treat the serum as following:
1. cholestrol: the serum was treated to determine the cholestrol concentration level in the blood by using a kit from an Egyptian company [7].
2. urea: the serum was treated to determine the urea concentration level in the blood by a colorimetric method using a kit from a British company [8].
3. glucose: the serum was treated to determine the glucose concentration level in the blood by a colorimetric method using a kit from an Egyptian company [9].
4. uric acid: the serum was treated to determine the uric acid concentration level in the blood by a uricase-POD enzymatic colorimetric method with 4-amino antipyrine using a kit from an Egyptian company [10].
5. albumin: the serum was treated to determine the albumin concentration level in the blood by modified bromocresol green colorimetric method using a kit from an Egyptian company [11].
6. ALP: the serum was treated to determine the Alkaline phosphotase enzyme activity in the blood by enzymatic colorimetric method using a kit from an Egyptian company [12].
7. GPT: the serum was treated to determine the GPT enzyme activity in the blood by a colorimetric method with using a kit from an Egyptian company [13].
8. creatinine: the serum was treated to determine the creatinine concentration level in the blood by enzymatic colorimetric method with using a kit from an Egyptian company [14].
9. total protein: the serum was treated to determine the total protein concentration level in the blood by enzymatic colorimetric method with using a kit from a France company [15].
10. calcium: the serum was treated to determine the calcium concentration level in the blood by O-Cresol phatalein complexone method with using a kit from a France company [16].

Statitical analysis
The statitical analysis was done by the T-test using (minitab) program. [17]

Results and dissucion
Results were compared with control sample to determine the presence or absence of differences between patients and healthy individuals results, as in Table 1. The results showed that there was a significant increase in urea, uric acid, creatinine, total protein concentration level, ALT, ALP activity, TSB concentration level, (34.9±22.10), (5.49±14.38), (0.788±0.669), (7.34±6.41), (13.38±6.96), (13.63±8.52) and (0.831±0.831), respectively in atopic eczema patients when compared with healthy group. The high level of urea in the serum was consistent with the results of a recent study that the incidence of eczema is accompanied by an increase in the level of urea, which is due to the use of steroids continued from childhood, kidney damage may be caused by eczema or vice versa [18], and the high level of uric acid where it agrees with there is a rise in the level of uric acid in 14 out of 20 people with eczema [19]. In the high creatinine level, it corresponds to [20], which is people with eczema show a 3-fold increase in creatinine than normal persons.
And the high level of total protein in patients with eczema differed with [21] as people with eczema showed a decrease in total protein Especially in children. The high level of GPT or ALT corresponds to the high rate of this enzyme and according to a study conducted on patients with eczema, psoriasis and others found a rise in the level of the enzyme GPT because the liver reflects the skin because the inability of the liver to get rid of toxins and large protein molecules lead to transit these toxins and molecules to the circulation and transit to the skin causing irritation, especially for people with eczema [22].
The high activity of ALP corresponds to the fact that its elevation in patients with eczema is attributed to a defect in the liver and the high proportion of this enzyme associated with having eczema [23]. For the high TSB level in eczema patients, these results correspond to [24] as patients with eczema showed a high TSB level, especially in children. The study also found that of 65 patients with eczema, (42) of them had asthma and allergic rinitis, [25] and 29 patients with a high sensitivity to foods such as legumes, meat, eggplants and hot spices, [26].
As for blood glucose, there was a rise in the third age group of the age of 41 years to age 60 years by 184.7 + 82.7), which did not correspond with that it was found that children are more likely to have type 1 diabetes with eczema [27].

Conclusions
1. in the kidney function test, there was significant increase in urea, uric acid, creatinine, total protein concentration level.
2. in the liver function test there was significant increase in GPT, ALP enzyme activity and TSB concentration level, and there was no elevation in albumin concentration.
3. It is found that patients with atopic eczema have no elevation in cholesterol, calcium, and blood glucose concentration levels, but there was an increase in blood glucose concentration level in the third age group (41-60 years).
4. There was a relationship between food allergy and eczema that food included (legumes, hot spicy food, meat).
5. There is a relationship between eczema and asthma.

Recommdations

Table 1 shows the levels of uric acid, creatinine, total protein concentration level GPT, ALP enzyme activity, albumin, cholesterol, calcium, RBS, and TSB concentration level when comparing results with healthy individuals.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Groups</th>
<th>Patients Mean SD ±</th>
<th>Control Mean SD ±</th>
<th>T-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>UREA</td>
<td></td>
<td>34.9 ±10.5</td>
<td>22.10 ±9.78</td>
<td>5.72 **</td>
</tr>
<tr>
<td>URIC ACID</td>
<td></td>
<td>5.49 ±1.82</td>
<td>4.38 ±1.45</td>
<td>3.17</td>
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<tr>
<td>CREATININ</td>
<td></td>
<td>0.788 ±0.365</td>
<td>0.669 ±0.197</td>
<td>2.06</td>
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<tr>
<td>TOTAL PROTEIN</td>
<td></td>
<td>7.34 ±1.58</td>
<td>6.41 ±1.45</td>
<td>2.77</td>
</tr>
<tr>
<td>GPT</td>
<td></td>
<td>13.38 ±3.25</td>
<td>4.38 ±1.45</td>
<td>11.61</td>
</tr>
<tr>
<td>ALP</td>
<td></td>
<td>13.63 ±6.27</td>
<td>0.669 ±0.197</td>
<td>4.75 **</td>
</tr>
<tr>
<td>TSB</td>
<td></td>
<td>0.831 ±0.687</td>
<td>0.190 ±0.187</td>
<td>9.96 **</td>
</tr>
<tr>
<td>Albumin</td>
<td></td>
<td>4.595 ±0.884+</td>
<td>4.321 ±0.779+</td>
<td>m=1.51</td>
</tr>
<tr>
<td>Cholesterol</td>
<td></td>
<td>161.5 ±55.0+</td>
<td>148.1 ±44.7+</td>
<td>m=1.25</td>
</tr>
<tr>
<td>Calcium</td>
<td></td>
<td>161.5 ±55.0+</td>
<td>148.1 ±44.7+</td>
<td>m=0.60</td>
</tr>
<tr>
<td>RBS</td>
<td></td>
<td>109.3 ±13.4+</td>
<td>105.3 ±17.9+</td>
<td>m=0.64</td>
</tr>
</tbody>
</table>

*means that p-value < 0.05, ** means that p-value < 0.001, ns means that p-value = 0.

References

بعض المعايير الكيموحيوية للأطفال المصابين بالحساسية الجلدية ومقارنتها مع الأطفال الاصحاء

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المختصر

الهدف من الدراسة هو معرفة التغييرات الكيموحيوية في مصل الأطفال المصابين بالحساسية الجلدية (Atopic Eczema) ، ثم تحديد هذه التغييرات من خلال عمل تحليلات (الكوليسترول، البروتين، الكالسيوم، الكرياتينين، الجلوكوز، الليوريك). تم جمع العينات في فترة من شهر كانون الأول إلى شهر كانون الثاني في مدينة تكريت. الدراسة تضمنت 94 عينة، 65 منها من مرضى التهاب الجلد الثاني و29 منها من الأطفال الاصحاء، تم تجميع عينات крови من جميع المرضى. تم قياس الكوليسترول، البروتين، الكالسيوم، الكرياتينين، الجلوكوز، الليوريك، الجلوكوز، الكرياتينين، الليوريك، البروتين، الكالسيوم، الكرياتينين، الجلوكوز، الليوريك، البروتين، الكالسيوم، الكرياتينين، الجلوكوز، الليوريك، البروتين. وجد أن وفرة الدم وizational variability in children, adolescents, and adults."

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