Lipid Profile in Sudanese Patients with Atopic Eczema (Atopic dermatitis)

Nagla Ali Ahmed Mahdi, Dr. Omer Balla Ibrahim

INTRODUCTION

The term "Eczema" derived from the Greek word for "Boiling" which reflect that the skin becomes acutely inflamed that fluids weep out or vesicles appear. In developed world eczema accounts for a large proportion of skin diseases, both in hospital and community. Atopic eczema is a one type of eczema that may start at any age but the onset is often in childhood. It may also start later in life in people who did not have Atopic eczema as a child. Blood samples were collected into plain containers from each participant (40 patients and 40 healthy individuals as control). Serum lipids were measured with semi-automated analyzer Spec BTS 350 using enzymatic methods. Data were analyzed using SPSS version 16 and presented as mean ± SD. P value < 0.05 was considered significant. The means of T CHOL in the patients and control group were (145 mg/dl ±47) and (162 mg/dl ±12) respectively. The means of TG in the patients and control group were (100 mg/dl ± 60) and (115 mg/d/l ±22) respectively. The means of HDL in the patients and control group were (93 mg/dl ±38) and (69 mg/dl ±11) respectively. Results of the patients when compared to that of the controls, showed a significant decrease in CHOL (P = 0.02) and HDL (P = 0.00), a significant increase in LDL (P = 0.00) and no significant difference in TG (P = 0.15). Sera of Sudanese patients with atopic dermatitis showed a significant higher level of LDL, lower level of HDL and total cholesterol and no change in triglyceride level when compared with non-atopic dermatitis controls.

Keywords: Atopic dermatitis (Atopic eczema), Lipid profile.

Abstract: This study was carried out between February and April 2017. This study aimed to evaluate serum lipid profile (Total cholesterol (T CHOL), triglycerides (TG), high density lipoprotein (HDL) and low density lipoprotein (HDL)) in atopic dermatitis (AD) patients. Atopic eczema is a very common skin condition. It may start at any age but the onset is often in childhood. It may also start later in life in people who did not have Atopic eczema as a child. Blood samples were collected into plain containers from each participant (40 patients and 40 healthy individuals as control). Serum lipids were measured with semi-automated analyzer Spec BTS 350 using enzymatic methods. Data were analyzed using SPSS version 16 and presented as mean ± SD. P value < 0.05 was considered significant. The means of T CHOL in the patients and control group were (145 mg/dl ±47) and (162 mg/dl ±12) respectively. The means of TG in the patients and control group were (100 mg/dl ± 60) and (115 mg/d/l ±22) respectively. The means of HDL in the patients and control group were (93 mg/dl ±38) and (69 mg/dl ±11) respectively. Results of the patients when compared to that of the controls, showed a significant decrease in CHOL (P = 0.02) and HDL (P = 0.00), a significant increase in LDL (P = 0.00) and no significant difference in TG (P = 0.15). Sera of Sudanese patients with atopic dermatitis showed a significant higher level of LDL, lower level of HDL and total cholesterol and no change in triglyceride level when compared with non-atopic dermatitis controls.

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they can infiltrate into the extracellular space of the vessel wall, where they can be oxidized and taken up by macrophages through scavenger receptors [7].

**Study design**

This is a descriptive case control study in Dermatology and Venereology hospital at Khartoum state, during the period from February 2017 - April 2017.

**Study group**

A study group of randomly selected 40 patients who were diagnosed as atopic dermatitis and a control group of 40 normal healthy individual at Khartoum state. An inclusion criterion is patients already diagnosed as atopic eczema (or atopic dermatitis), an exclusion criteria is any patient have other atopic diseases, diabetes mellitus, hypertension and cardiovascular diseases.

Blood samples were collected from the patients after fulfillment the questionnaire as well as control group, using disposable syringes under a septic condition. The blood was drowning in heparin containers and then centrifuged at 3000 RPM for 3 min to obtain plasma. Hemolyzed samples were rejected and excluded from study; two ml of plasma was preserved at -20°C prior to analysis for total cholesterol, high density lipoprotein cholesterol, low density lipoprotein cholesterol and triglycerides.

Serum lipids were measured with semi-automated analyzer spec BTS 350 using different reagent kits. [Serum TG: (enzymatic GPO–PAP method), total cholesterol: (enzymatic CHOD–PAP method) and LDL and HDL using enzymatic methods].

**STATISTICAL ANALYSIS**

Data were analyzed using SPSS version 16 and presented as mean ± SD. P value < 0.05 was considered significant.

**RESULTS**

**Cholesterol**

The mean total cholesterol in the patients and control group were (145 mg/dl ±47) and (162 mg/dl ±12) respectively. Results showed a significant decrease in the patients mean when compared to that of the control (P = 0.02) see table (1).

**Triglycerides**

The mean triglyceride in the patients and control group were (100 mg/dl ± 60) and (115 mg/dl ±22) respectively. Results showed no significant difference between the patients mean and that of the control (P = 0.15) see table (1).

**HDL**

The mean HDL in the patients and control group were (31 mg/dl ±7) and (70 mg/dl ±6) respectively. Results showed a significant decrease in the patients mean when compared to that of the control (P = 0.00) see table (1).

**LDL**

The mean LDL in the patients and control group were (93 mg/dl ±38) and (69 mg/dl ±11) respectively. Results showed a significant increase in the patients mean when compared to that of the control (P = 0.00) see table (1).

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>Sig</th>
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<tbody>
<tr>
<td>T. CHOL (mg /dl)</td>
<td>P</td>
<td>145</td>
<td>47</td>
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<td></td>
<td>C</td>
<td>162</td>
<td>12</td>
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<td>TG (mg /dl)</td>
<td>P</td>
<td>100</td>
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<td>C</td>
<td>115</td>
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<tr>
<td>HDL (mg /dl)</td>
<td>P</td>
<td>31</td>
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</tr>
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<td></td>
<td>C</td>
<td>70</td>
<td>6</td>
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<tr>
<td>LDL (mg /dl)</td>
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<td>93</td>
<td>38</td>
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<td>C</td>
<td>69</td>
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<table>
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<tr>
<th>Table-2: correlation between the different parameters of the patients</th>
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<tr>
<td><strong>Duration</strong></td>
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<tr>
<td>Duration In Years</td>
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<tr>
<td>T. CHOL in mg/dL</td>
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<td>TG in mg/dL</td>
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<td>HDL in mg/dL</td>
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<td>LDL in mg/dL</td>
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**. Correlation Is Significant At The 0.01 Level (2-Tailed). *. Correlation Is Significant At The 0.05 Level (2-Tailed).**
DISCUSSION

Our study showed that there was a significant decrease in the patients total cholesterol (145 mg/dl ± 47) compared with that of the control group (162 mg/dl ± 46) (p. value = 0.02). Total cholesterol showed a small positive correlation with the duration of the disease (p =0.4) (r = 0.11). Although the level was normal, the correlation showed that there was an effect of the disease duration on the level of the cholesterol. Here we disagree with studies by Sungchl seo et al. [10] and Ji Hyun LEE et al. [11] who found no difference in the total cholesterol when comparing between AD patients and non-AD controls.

Fig-1: showed positive correlation between cholesterol and duration of AD

In this study, when comparing triglycerides between atopic dermatitis patients and controls, there were no significant differences (P = 0.15) and there was small negative correlation between duration of the disease and triglycerides (r = -0.13, P = 0.4). This is in agreement with study by Sung chul et al. [10].

The significant decrease in the HDL of the patients (mean = 31 mg/dl ±7) when compared with that of the control group (mean = 69 mg/dl ± 5, P = 0.00) and there was a small positive correlation between duration of disease and HDL (r = 0.2, P =0.1), the observed results agreement with Dr. Enza D’Auria et al. who found that; serum HDL was lower in children with atopic dermatitis than controls[6].

The significant increase in the patients LDL (93 mg/dl ±38) when compared with the control group (69 mg/dl ±11, P. =0.00) and its small positive correlation with duration of the disease (P. value = 0.3)(r = 0.13) , is in agreement with studies by Dr. Enza D’Auria and et al.[6].

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All thanks to Allah for taking care of me and giving me the desire. I thank my father, mother. My deep gratitude to my supervisor Dr. Omer Balla for his continuous guiding, support and encouraging. I thank all people's help me in home and university.

CONCLUSION

Sera of Sudanese patients with atopic dermatitis showed a significant higher level of LDL, lower level of HDL and total cholesterol and no changed in triglyceride level when compared with non-atopic dermatitis controls.

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