# 78 - DERMATOGLYPHICS IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS FROM SANTA IZABEL HOSPITAL IN SALVADOR–BRAZIL AND HEALTHY INDIVIDUALS.

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## INTRODUCTION

Through his life, mankind has been suffering modifications. Some of these modifications can be considered convenient and being also considered part of human development. Others, as an example the diseases, disrupt this natural process. For Helmanc (1994), these modifications are part of the experience lived by the live being and can be considered as normal. Therefore, their causes, the diagnosis and the cure process are part of the social sphere. Is a part of this social dimension the loss of health, which can be a transitory loss or chronic.

As related by Sato (et al., 2002), the Systemic lupus erythematosus (SLE) is a inflammatory, chronic and multi systemic disease of unknown cause, and with a auto-immune nature characterized by the presence of various auto-antibodies. SLE develops with clinical signs with periods of intensify and remissions. Its etiology is still obscure. Today, there is a consensus among the scientific community, Bonfá (2002), Hanh (1997), although genetic, environmental, hormonal and immunological factors are associated and/or involved with the development of the disease.

The SLE is a rare disease, associated with morbidity and mortality. Its main target are young women, i.e., in the reproductive phase, in a proportion from nine to ten women to each man and with a prevalence in American studies of 14 to 50/100,000 habitants. According to Wallace (2002), the SLE diagnosis current criterion are based upon the American College of Rheumatology on 1982 and revised on 1997.

According to Antolín and Amérgio (1996), the SLE is considered a chronic disease, with a unpredictable characteristic with reach various organs simultaneously or successively, many times, bringing to a collapse of some vital organs or compromising definitively its functions.

The utilization of finger, palmar or plantar prints has become very disseminated among the medical area clinics after association between these prints and congenital pathologies, as Turner and Down syndrome, among others, were discovered. Saldanha (1968) affirms that these dermopapilar patterns helps in the clinical diagnosis of these anomalies. More recent studies have also related the use of dermatogliphos to others pathologies as the Hansen's disease (ALMEIDA; GALLO, 1989).

The dermatoglyphic method consists in the fingerprints analyzes of the 10 fingers of a human being. It is considered a Science which study the fingertips relief and draws, the palm of the hands and the sole of the feet. According to Fernandes Filho (1997), the fingerprints represents universal genetic marks, besides can represent determinate ethnic characteristics and also characteristic of the population.

The study objective is to promote a comparative analysis between individuals with systemic lupus erythematosus and individuals without lupus, utilizing the DERMATOGLYPHICS protocol (CUMMINS; MILDO, 1961).

## MATERIALS AND METHODS

The study was transversal, descriptive - comparative type, which is useful for comparing differences between means when the cause of the differences is isolated and known (THOMAS; NELSON; SILVERMAN, 2007).

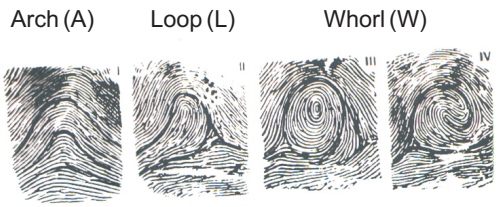
The sample was composed by 27 women with mean of 40±9.41 years, being 14 with mean of 39±12.65 years, all patients with SLE diagnostic and all from the rheumatology ambulatory of the Santa Izabel Hospital (Salvador–Brazil), according to Santiago (2008)[2], and 13 women with mean of 41±4.13 years, all volunteers, without diagnosis of lupus, and from a Fitness Center. This research follows rigorously the criteria proposed by the National Health Council resolution 196, dated on October 10th 1996, being approved by the Ethic Committee of the Santa Izabel Hospital, under the protocol number 208748.

The protocol utilized to determinate the dermatoglyphic profile was the Cummis and Mildo (1961) DERMATOGLYPHICS. This method includes the fingerprints processing and obtaining. After the data are collected, the protocol predict:

1. Identifying the draws types - Arch (A), Loop (L), or Whorl (W);
2. Determinate the “ATD” angle (ATDD=right hand and ATDE=left hand);
3. Count the quantity of palmar lines between the digital a-b triradius.
4. Determinate the delta index (D10) – summary the intensity of the draws.

The D10 identification is obtained after the draws collecting of the finger's distal phalanges: Arch “A”, draw without deltas; Loop “L”, one delta draw; Whorl “W”, two deltas draws, i.e., D10= Σ L + 2 (Σ W).

Figure 1- Digitals Draws.

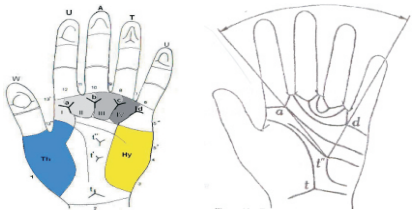



Source: Fernandes Filho (1997).

[2] SANTIAGO, Mittermayer Barreto. Rheumatologist Physician, Santa Izabel Hospital.

The Montenegro (2007) protocol was utilized to indentifying the genetic pattern of the palmar complex. This protocol identifies six palm's areas, composed by the thenar, hypothenar and interdigital area I,II,III and IV, and the ATD angle, which is the angle measured with the “t” vertices and sides passing through the “a” e “d” triradius.

Figure 2 –Thenar, hypothenar and interdigital Areas I,II,III and IV, and the a-t-d angle



Source: Fernandes Filho (et al, 2007).

5. Ridge count of each finger (RC);

6. Total ridger count of all 10 fingers (TRC) delineating the line which connect the delta to the nucleus of the draw. The lines are counted disposing the first and the last of the ten fingers. For the a-b triradius a line count of the 'a' delta to 'b' delta from both hands was done (a-bD=right hand and a-bE=left hand).

For analysis purposes, the data were organized in two groups (healthy people and patients with lupus). Data were tabulated with the GraphPad Prism 4 program. The continue quantitative variables (D10, TRC, ATDE, ATDD, a-bD e a-bE) were described as mean and deviation pattern ( ± SD) and for the qualitative variables (A, L, W) percentages were utilized. To compare all the variables the Mann-Whitney test was utilized. For all the statistic tests the p<0,05 value of significance was considered.

**RESULTS**

Table 1 – Frequency percentage of the Arch (A), Loop (L) and Whorl (W)draws of healthy women and with SLE

| Dermatoglyphics characteristics | Studied Groups | |
|---|---|---|
| | Healthy | SLE |
| Arch | 61.54 | 38.46 |
| Loop | 48.62 | 51.38 |
| Whorl | 41.27 | 58.73 |

Table 2 – Dermatoglyphics characteristics results of D10 E TRC of healthy women and with SLE

| Dermatoglyphics characteristics | Studied Groups | |
|---|---|---|
| | Healthy | SLE |
| | $\bar{x}$ ± SD | $\bar{x}$ ± SD |
| D10 | 10.92 ± 0.90 | 11.93 ± 3.17 |
| TRC | 125.92 ± 50.38 | 115.71 ± 38.32 |

Table 3 – Dermatoglyphics characteristics results of ATDE, ATDD angle of healthy women and with SLE

| Dermatoglyphics characteristics | Studied Groups | |
|---|---|---|
| | Healthy | SLE |
| | $\bar{x}$ ± SD | $\bar{x}$ ± SD |
| ATDE | 41.69 ± 2.81 | 42.86 ± 4.90 |
| ATDD | 42.08 ± 3.68 | 43.64 ± 5.30 |

Table 4 – Dermatoglyphics characteristics results of a-bD and a-bE triradius line count from healthy women and with SLE

| Dermatoglyphics characteristics | Studied Groups | |
|---|---|---|
| | Healthy | SLE |
| | $\bar{x}$ ± SD | $\bar{x}$ ± SD |
| a-bD | 69.00 ± 13.53 | 50.00 ± 7.05 |
| a-bE | 68.61 ± 14.90 | 50.07 ± 6.45 |

Table 5 – p-value comparison of the A, L, W, D10, TRC, ATDE, ATDD, a-bD and a-bE dermatoglyphics characteristics of healthy women and with SLE

| Dermatoglyphics characteristics | *p-value* |
|---|---|
| A | 0.2298 |
| L | 0.7516 |
| W | 0.3809 |
| D10 | 0.3433 |
| TRC | 0.5442 |
| ATDE | 0.865 |
| ATDD | 0.5764 |
| a-bD | 0.0009* |
| a-bE | 0.0011* |

Mann-Whitney *(p<0,05)

Observing Table 1, the individuals with lupus show a higher predominance of Whorl 58.73% and Loops 51.38% and a lower predominance of Archs 38.46% when compared with healthy women Whorl 41.27%, Loop 48.62% and Arch 61.54%. The Table 2 results, in comparison with the D10 variable, were very close: women with SLE 11.92±3.17 and healthy women 10.92±.90. But the TRC of healthy women was higher 125.92±50.38 than the women with SLE 115.93±38.32. In Table 4, the variable a-b with mean of 69.00±13.53 for right hand and 68.61±14.90 for the left hand in healthy women, contrasting with women with SLE: right hand 50.00 ±7.05 and left hand 50.07±6.45.obtaining a 38% increase for right hand and 36% for left hand. From 9 analyzed characteristics 7 haven't shown a significative difference (p > 0,05). The ATD angle, as much right hand as left hand, haven't shown a significative p: left hand p =0.865 and the right hand with p=0.764 contrasting with the Dubois and Weiner (1976) study, but the D10 has shown p=0.3433. For the TRC p=0.5442, in fingers draws' presentation the relation among groups was with p=0.2298 for (A), p=0.7516 for (L) and for (W) p=0.3809.

Two Dermatoglyphics characteristics have shown as result p<0.05: the line count among the a-b triradius of both hands, showing a count reducing of line count among patients with (SLE) right hand p=0.0009 and p=0.011 for the left hand, corroborating with the previous Dubois and Weiner (1976) study, which had found a p=0.033 for a-b triradius count. The Vormittag

(et al.,1981) work had also found a low a-b triradius line count. The Dubois and Weiner (1976) studies had observed significative statistic results between SLE and combined controlled populations. But in Schur (1990) study, significative differences were observed in palmar patterns between the right hand medial region and left hand lateral region in triradius of individuals with SLE and individuals under the control of the research.

**CONCLUSION**

The present study has found a significative difference in the line count of the a-b triradius variable in both hands of patients with lupus in comparison with healthy individuals, right hand p=0.0009 and left hand p=0.0011 pointing to the DERMATOGLYPHICS utilization as a additional parameter in the identification of individuals with this disease .

Complementary studies are suggested as a information increment related to the connection between the lines quantity of the a-b triradius and the systemic lupus erythematosus.

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**DERMATOGLYPHICS IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS FROM SANTA IZABEL HOSPITAL IN SALVADOR–BRAZIL AND HEALTHY INDIVIDUALS.**

**ABSTRACT**

The study objective was to compare the results of the dermatoglyphic characteristic of patients with systemic lupus erythematosus (SLE) from Santa Izabel Hospital in Salvador-Brazil with healthy individuals volunteers from a specific Fitness Center in Salvador-Brazil. For this purpose, the Cummins and Midlo (1961) DERMATOGLYPHICS method was used. 27 women were analyzed, being 14 women with SLE with mean of 39±12.65 years old and 13 healthy women with mean of 41±4.13 years old. The variables were compared by the Mann-Whitney no parametric test. For the statistic test, a significative p-value of (p< 0,05) was considered. The analyzed variables have shown the following mean and deviation pattern for healthy women: D10 (10.92±0.90); TRC (125.92±50.38); ATDD angle (42.08±3.68) and ATDE (41.69±2.81), 'a-b' triradius right hand (69.00±13.53) and (68.61±14.90) left hand. For women with SLE, the following pattern: D10 (11.93±38.32); TRC (115.71±38.32); ATDD angle (43.64±5.3) and ATDE (42.86±4.9), 'a-b' triradius right hand (50.00±7.05) and (50.07±6.45) left hand. The obtained results haven't shown a significative statistic difference among the studied groups in the variables: drawn type Arch (A) p=0.2298; drawn type Loop (L) p=0.7516 and drawn type Whorl (W) p=0.3809; D10 p=0.3433; TRC p=0.5442; ATDD angle p=0.5754 and ATDE p=0.865, but in the ab triradius variable from both hands, the study has shown a significative right hand p of p=0.0009 and for left hand p of p=0.0011. It can be concluded from this study, based upon results which was found in(a-bD) and (a-bE) triradius, that the use of the DERMATOGLYPHICS method helps the diagnosis for patients with SLE corroborating with works which were done previously and had obtained similar results and confirm the existence of the relationship between the genetic factor and the SLE.

**KEYWORDS:** systemic lupus erythematosus, disease, DERMATOGLYPHICS.

**DERMATOGLYPHIQUE CHEZ DES PATIENTS ATTEINTS DE LUPUS ÉRYTHÉMATEUX SYSTÉMIQUE DE L'HÔPITAL SANTA IZABEL SALVADOR-BA ET CHEZ DES INDIVIDUS SAINS**

**RÉSUMÉ**

L'objectif de cette étude a été de comparer les résultats des caractéristiques dermatoglyphiques de patients atteints de lupus érythémateux systémique (LES) de l'Hôpital Santa Izabel Salvador-Ba avec des individus sains volontaires d'une académie de gymnastique de Salvador-Ba. Pour cela, il a été fait usage de la méthode Dermatoglyphique de Cummins et Midlo (1961). 27 femmes ont été analysées, dont un groupe de 14 femmes avec LES d'un âge moyen 39±12,65 et 13 femmes saines d'un âge moyen de 41±4,13. Les variables ont été comparées par le test non paramétrique de Mann-Whitney. Pour le test statistique on a considéré un p-valeur significatif de (p< 0,05). Les variables analysées présentent les moyennes suivantes et écart type pour les femmes saines : D10 (10,92±0,90) ; SQTL (125,92±50,38); angle ATDD (42,08±3,68) et ATDG (41,69±2,81), triradius 'a-b' main droite (69,00±13,53) et (68,61±14,90) main gauche. Pour les femmes avec LES typique : D10 (11,93±38,32) ; SQTL (115,71±38,32) ; angle ATDD (43,64±5,3) et ATDG (42,86±4,9), triradius 'a-b' main droite (50,00±7,05) et (50,07±6,45) main gauche. Les résultats obtenus n'ont pas indiqué une différence statistique significative entre les groupes étudiés dans les variables : dessin type arc (A) p=0,2298 ; dessin type boucle (B) p=0,7516 et dessin type tourbillon (T) p=0,3809; D10 p=0,3433; SQTL p=0,5442 ; angle ATDD p=0,5754 et ATDG p=0,865, quant à la variable triradius ab des deux mains, l'étude a indiqué un p significatif main droite p=0,0009 et pour la main gauche un p=0,0011. On en a conclu sur la base des résultats trouvés pour les triradius (a-bD) et (a-bG) de cette étude que l'usage de la méthode de la dermatoglyphique aide le diagnostic pour des patients atteints de LES corroborant des travaux réalisés antérieurement qui ont obtenu desrésultats semblables et qui affirment l'existence de la relation entre le facteur génétique et le LES.

**MOTS-CLÉ:** lupus érythémateux systémique, maladie, dermatoglyphique.

**DERMATOGLIFIA EN PACIENTES CON LUPUS ERITEMATOSO SISTÉMICO DEL HOSPITAL SANTA IZABEL SALVADOR–BRASIL Y INDIVIDUOS SALUDABLES**

**RESUMEN**

El objetivo de este estudio fue comparar los resultados de las características dermatoglificas de los pacientes con lupus eritematoso sistémico (LES) del Hospital Santa Izabel Salvador-Brasil con individuos saludables y voluntarios de una academia de gimnástica de Salvador-Brasil. Para tanto, el método Dermatoglifia de Cummins y Midlo (1961) ha sido utilizado. 27 mujeres, siendo un grupo de 14 mujeres con LES con edad media de 39±12,65 y 13 mujeres saludables con edad media de 41±4,13 han sido analizadas. Las variables han sido comparadas pelo teste no paramétrico de Mann-Whitney. Para el teste estadístico un p-valor significativo de (p< 0,05) ha sido considerado. Las variables analizadas presentan las siguientes promedias y desviación estándar para mujeres saludables: D10 (10,92±0,90); SQTL (125,92±50,38); ángulo ATDD (42,08±3,68) y ATDE (41,69±2,81), triradius 'a-b' mano derecha (69,00±13,53) y (68,61±14,90) mano izquierda. Para las mujeres con LES estándar: D10 (11,93±38,32); SQTL (115,71±38,32); ángulo ATDD (43,64±5,3) y ATDE (42,86±4,9), triradius 'a-b' mano derecha (50,00±7,05) y (50,07±6,45) mano izquierda. Los resultados obtenidos no han apuntado una diferencia estadística significativa entre los grupos estudiados en las variables: diseño tipo arco (A) p=0,2298; diseño tipo presilla (L) p=0,7516 y diseño tipo verticilo (W) p=0,3809; D10 p=0,3433; SQTL p=0,5442; ángulo ATDD p=0,5754 y ATDE p=0,865, pero en la variable triradius ab de ambas las manos, el trabajo he demostrado un p significativo mano derecha p=0,0009 y para la mano izquierda con un p=0,0011. Se concluye que con base en los resultados encontrados en los triradius (a-bD) y (a-bE) de este estudio el uso de lo método de la Dermatoglifia auxilia en el diagnóstico para pacientes con LES corroborando con trabajos realizados anteriormente que obtuvieron resultados semejantes y que afirman la existencia de la relación entre el factor genético y el LES.

**PALABRAS CLAVE:** lupus eritematoso sistémico, enfermedad, dermatoglifia.

**DERMATOGLIFIA EM PACIENTES COM LÚPUS ERITEMATOS SISTÊMICO DO HOSPITAL SANTA IZABEL SALVADOR–BA E INDIVÍDUOS SADIOS**

**RESUMO**

O objetivo deste estudo foi comparar os resultados das características dermatoglificas de pacientes com lúpus eritematoso sistêmico (LES) do Hospital Santa Izabel Salvador-Ba com indivíduos sadios voluntários de uma academia de ginástica de Salvador-Ba Para tanto, foi utilizado o método Dermatoglifia de Cummins e Midlo (1961). Foram analisadas 27 mulheres, sendo um grupo de 14 mulheres com LES com idade média de 39±12,65 e 13 mulheres sadias com idade média de 41±4,13. As variáveis foram comparadas pelo teste não paramétrico de Mann-Whitney. Para o teste estatístico considerou-se um p-valor significativo de (p< 0,05). As variáveis analisadas apresentam as seguintes médias e desvio-padrão para mulheres sadias: D10 (10,92±0,90); SQTL (125,92±50,38); ângulo ATDD (42,08±3,68) e ATDE (41,69±2,81), trirrádio 'a-b' mão direita (69,00±13,53) e (68,61±14,90) mão esquerda. Para as mulheres com LES padrão: D10 (11,93±38,32); SQTL (115,71±38,32); ângulo ATDD (43,64±5,3) e ATDE (42,86±4,9), trirrádio 'a-b' mão direita (50,00±7,05) e (50,07±6,45) mão esquerda. Os resultados obtidos não apontaram uma diferença estatística significativa entre os grupos estudados nas variáveis: desenho tipo arco (A) p=0,2298; desenho tipo presilha (L) p=0,7516 e desenho tipo verticilo (W) p=0,3809; D10 p=0,3433; SQTL p=0,5442; ângulo ATDD p=0,5754 e ATDE p=0,865, já a variável trirrádio ab de ambas as mãos, o estudo demonstrou um p significativo mão direta p=0,0009 e para a mão esquerda com um p=0,0011. conclui-se que com base nos resultados encontrados nos trirrádios (a-b-D) e (a-b-E) deste estudo o uso do método da dermatoglifia auxilia no diagnostico para pacientes com LES corroborando com trabalhos realizado anteriormente que obtiveram resultados semelhantes e que afirmam há existência da relação entre o fator genético e o LES.

**PALAVRAS-CHAVE**: lúpus eritematoso sistêmico, doença, dermatoglifia.

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