MAIN MODIFICATIONS OF THE BODY FUNCTIONS FOUND BY CONTACT SPECTROPHOTOMETRIC ANALYSIS, UNDER THE INFLUENCE OF TRACE ELEMENT IMBALANCES AND TISSUE HEAVY METALS IN PSORIASIS

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Summary

Contact spectrophotometric analysis allows the percentage quantification of the impairment level of 12 important physiological functions of the human body (diabetes mellitus predisposition, allergy predisposition, enzymatic status, assimilation level, metabolism level, immune system status, level of cognitive functions, hormonal status, healing and self-repair ability, emotional status, functional level of the cardiovascular system, and the general function of the nervous system) by measuring the tissue concentrations of trace elements and heavy metals.

In our study on psoriasis, those 12 physiological functions characterized by the specific indexes, which were calculated based on the software included in the device, have indicated various impairment degrees, ranging between 51.99% for the index of nervous system, 86.35% for the index of emotional function, 86.36% for the index of immune system, and 73.90% for the index of intestinal absorption.

The indexes for the other physiological functions (diabetes mellitus predisposition - 60.63%, allergy predisposition - 59.08%, enzymatic status - 68.17%, metabolism level - 63.64%, level of cognitive functions - 63.62%, hormonal status - 77.26%, tissue self-repairing - 64.08%, functional level of the cardiovascular system - 59.08% and index of nervous system function - 51.99%) have been modified to variable proportions, which are significant for explaining the symptomatology and pathogenicity, as well as for completing the specific psoriasis therapy.

Keywords: *spectrophotometry, oligominerals, heavy metals, physiological functions, psoriasis.*

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Introduction

Tissue imbalances of trace elements and heavy metal concentrations alter the physiological response of various organs and systems of the human body. Contact spectrophotometric analysis measures the quantity of tissue concentration of trace elements and heavy metals and then, based on those concentrations, which are analyzed by complex interpretation algo-rithms, which are included in the device's software, it quantifies in percentages the values of the physiological functions of the human body. [1,2, 3,4,5]

Scope

By having a contact spectrophotometer, which measures the quantity of tissue concentrations of trace elements and heavy metals, which it then submits for interpretation based on complex algorithms, for percentage quantification of the values of the main twelve physiological functions (diabetes mellitus predisposition, allergy predisposition, enzymatic status, assimilation level, metabolism level, immune system status, level of cognitive functions, hormonal status, healing and self-repair ability, emotional status, functional level of

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the cardiovascular system, and the general function of the nervous system), we have attempted to emphasize those modifications on a batch of patients with skin disorders, for better knowing the pathogenic mechanisms and setting the bases for therapy improvement. [9, 10, 11, 12, 13, 14].

Material

By contact spectrophotometry analysis, we have tested 22 patients with psoriasis vulgaris (plaque-like psoriasis): 13 women and 9 men, aged 25 to 68, having an average age of 43.3.

Method

We have measured the tissue concentrations for 20 trace elements (Calcium, Magnesium, Phosphor, Silicon, Potassium, Sodium, Copper, Zinc, Iron, Manganese, Chrome, Vanadium, Bohr, Cobalt, Molybdenum, Iodine, Lithium, Germanium, Selenium and Sulfur), **14 toxic heavy metals** (Mercury, Aluminum, Lead, Arsenic, Cadmium, Silver, Barium, Beryllium, Bismuth, Antimony, Nickel, Platinum, Thallium, and Thorium), by the use of Oligoscan contact spectrophotometer, based on the user book. Those concentrations, which were processed by the device based on complex test algorithms, according to its software, generated percentage quantification information on the impairment degree of 12 main functions of the human body (diabetes mellitus predisposition, allergy predisposition, enzymatic status, assimilation level, metabolism level, immune system status, level of cognitive functions, hormonal status, healing and self-repair ability, emotional status, functional level of the cardiovascular system, and the general function of the nervous system) [15,16, 17,18,19,20,26].

The software of the device indicated the results by means of color graphs and percentages. The significance of percentages is set out by the producer, while complying with the company's database, thus: 0 to 33%, green color field, the patient has an adequate function; 33 to 66%, yellow field impairment, the patient experiences "tolerable" functional modifications. When finding this impairment degree, therapy is recommended for annulling the imbalances found in connection to the trace element and heavy metal concentrations, with the aim of treating the functional dysfunctions, which are at a level that the patient does not perceive by sickness signs and symptoms. The impairment degree between 67 and 100%, which is in the red field, certifies a functional imbalance having a bad significance, given its extent, which must be followed by adequate therapy. [13,14,15,16,17,18,19,20]

Personal results and discussions (Table 1)

The index on "diabetes mellitus predisposition" derived from an algorithm relying on the tissue concentration of Zn, Mg, P, V, Cr, and Hg, and displayed values ranging between 33 and 66% in 27.27% of the patients, and values ranging between 67 and 100% in 33.36% of the patients. The impairment percentage of the index concerning diabetes mellitus predisposition in the entire psoriasis batch researched was 60.63%. That percentage confirms the clinical finding on diabetes mellitus predisposition in patients with psoriasis as an element of general metabolic syndrome X accompanying psoriasis.

The index on protection – allergy predisposition relies on an algorithm comprising the values of Mn, Mo, and Ni. That index had values between 33 and 66% in 22.72 of the batch patients and of 36.36% for the impairment degree between 67 and 100%. In the entire batch, we have found an alteration value of 59.08% for the impairment degree of 33-100%. This fact might explain the frequency of allergy sensitization and intolerance reactions to certain topical medication used for treating psoriasis.

The index of enzymatic status comprising also the tissue concentrations of Zn, Fe, Cu, Mn, and Se had values of 22.72% for the impairment degree between 33 and 66%, and of 45.45% for the patients in the impairment degree between 67 and 100%. For the impairment degree of 33-100%, it was found a general incidence of 68.17%.

The index of intestinal absorption generated by an algorithm testing the values of Zn, Fe, Mn, Cu, and Cr indicated an alteration of 31.81% for the degree between 33 and 66% and of la 41.90% for the patients on the degree between 67 and 100%. For the general impairment degree

Table I: **Frequency and impairment degree of the psychological functions in the batch**

No patients	Tested physiological functions					
22	**Diabetes mellitus predisposition**	**Allergy predisposition**	**Enzymatic status**	**Assimilation level**	**Metabolism level**	**Immune system**
Number of patients with impaired parameters	impairment/ degree/no patients 33-66%=6 67-100%=8 Total=14 patients	impairment degree 33-66%=5 67-100%=8 Total=13 patients	impairment degree 33-66%=5 67-100%=10 Total=15 patients	impairment degree 33-66% =7 67-100%=9 Total=16 patients	impairment degree 33-66% =6 67-100%=8 Total 14 patients	impairment degree 33-66%=8 67- <100%=11 Total=19 patients
%percentage impairment 33-66% 67-100%	impairment degree %patients 33-66% =27,27% 67-100%=33,36%	impairment degree %patients 33-66% =22,72 67-100%=36,36	impairment degree %patients 33-66% =22,72% 67-100%=45,45%	impairment degree %patients 33-66% =31,81% 67-100%=40,90%	impairment degree %patients 33-66%=27.27% 67-100%=36,36%	impairment degree %patients 33-66% =36,36% 67-100%=50,00%
Total impairment 33-100%	60,63%	59,08%	68,17%	73,90%	63,63%	86,36%
No patients	**Tested physiological functions**					
22	**Cognitive functions**	**Hormonal status**	**Healing and self-repair**	**Emotional status**	**Cardiovascular system**	**Nervous system**
Number of patients with impaired parameters	impairment degree/ %patients 33-66%= 7 67-100%=7 Total=14 patients	impairment degree/ %patients 33-66% =8 67-100%=9 Total =17 patients	impairment degree/ %patients 33-66%=5 67-100%=8 Total=13 patients	impairment degree/ %patients 33-66% =9 67-100%=10 Total=19 patients	impairment degree/ %patients 33-66% =6 67-100%=7 Total =13 patients	impairment degree/ %patients 33-66% =5 67-100%=6
Total impairment with percentage 33-66% 67-100%	impairment degree/ 31-66% =31,81% 67-100%=31,81%	impairment degree/ 33-66% =36,36% 67- 100%=40,90%	impairment degree/ 33-66% =27,72% 67 -100%=36,36%	impairment degree/ 33-66%=40,90% 67-100%=45,45%	impairment degree/ 33-66%=27,27% 67-100%=31,81%	impairment degree/ 33-66% =22,72% 67-100%=27,27%
Total impairment 31-100%	63,62%	77,26%	64,08%	86,35%	59,08%	51,99%

33-100%, the level of the impariement incidence for the entire batch was 73.90% of the patients.

The metabolism index deriving from the algorithm including the Cr, Mo, and Iodine concentrations.

For that index, we have found an impairment frequency of 27.27% of the patients, for the 33-66% degree and of 36.35% for the patients in the impairment degree 67-100%. For the entire batch, 63.63% of the patients were on the impairment degree between 33 and 100% [6,7,8,9].

The modification of those three indexes, connected to the aspects and yield of the food metabolism, substantiates the need for special diet and for approaches of increasing the digestive yield in patients having psoriasis.

The index of immune system relying on an algorithm that includes the tissue values of Zn, Cu, Mg, Se, and Ge has indicated an impairment in 36.36% of the patients, in the impairment degree between 33% and 66%, and an impairment in 50.0% of the patients for the degree between 67 and 100%. In the entire psoriasis batch, 86.36% of the patients had an impairment in the general degree between 33 and 100%, which confirms once more the involve-ment of immune mechanisms in the genesis of inflammation with immune mechanism, which is characteristic to psoriasis. [14, 15, 16]

The index of cognitive function generated by an algorithm the includes the tissue level of Zn, Fe, Iod, P, and Bi has indicated impairment values in 31.81% of the patients, at an impairment degree between 33 and 66% and in 31.31% of the patients in the alteration level between 67 and 100%. On the entire batch, on the general

impairment degree between 33 and 100%, 63.62% of the batch patients were affected.

The index of the hormonal functional status obtained from the algorithm analysis of the concentration values of Zn, Iodine, Hg, and Pb proved the impairment of 36.36% of the patients, in the impairment degree between 33 and 66%, and an impairment of 40.90% of the psoriasis batch patients, for the impairment degree between 67 and 100%. In the entire batch, 77.26% of the patients displayed modifications in the impairment degree 33-100%. The alteration of the hormonal status found by contact spectrophotometry as metabolic modifications can be to blame for the frequent obesity of patients having diabetes. [17, 18, 19, 20]

The index of the tissue repair and anti-wrinkle ability indicated by the algorithm that includes Zn and Si has proved the impairment of 27.72% of the patients for the range between 33 and 66% and an impairment of 36.36% of the patients on the range between 67 and 100%. In the entire batch, the impairment of the index of tissue repair ability was found in 64.08% of the patients, in the general range 33-100%. Impairing the tissue repair ability can explain the progressive increase of the psoriasis surfaces, slowing down the clinical response in the anti-psoriasis therapies as the patients get older, and an increase in the psoriasis age. [22,23,24,25]

The index of the emotional function and self-control function, as well as of the anti-stress ability of the patients, proven by an algorithm including Ca, Mg, Zn, Li, and Cr, was amended in 40.90% of the patients with psoriasis from the batch, in a range of 33-66% and in 45.45% of the patients, in the impairment range between 67 and 100%. On the entire batch, the index was modified in 86.35% of the psoriasis patients for the 33-100% range. A modification of the index of the emotional function status, which was found by spectrophotometry, has confirmed the particular affective component in the psoriasis patients, which would bind the physician to therapy involving affective balancing. [9,10]

The index of the cardiovascular system status shown by an algorithm including Mg, Ca, K, Si, and Cr indicated the impairment of 27.27% of the subjects, in the impairment range between 33 and 66%, and of 31.81% in the impairment range between 66 and 100%. On the entire batch, we have found an impairment frequency of the index of cardiovascular status in 59.08% of the psoriasis patients included in the batch, a fact confirmed also by the clinical cardiac conditions associated with psoriasis. [9, 10, 27]

The index of the nervous system indicated by the algorithm using the tissue concentrations of Mg, Ca, S, K, and Co had impairment values in 22.72% of the patients in the 33-66% range and impairment values of 27.27% in the impairment range between 67 and 100%. On the whole batch, the modifications of the impairment index of the nervous system was 51.99%, which confirmed once more, by laboratory tests, the clinical fact that the components connected to the nervous system play an important part in the appearance and evolution of psoriasis. [8, 9, 10]

Conclusions

By measuring the tissue concentrations of trace elements and heavy metals, contact spectrophotometry allows to quantify the percentage of the impairment level of 2 physiological functions, which are important to the human body.

In this study on psoriasis, those 12 physiological functions characterized by specific indexes drafted while complying with the device software indicated various impairment degrees between 51.99% for the index of the nervous system, 86.35% for the emotional function index, 86.36% for the index of immune system, and 73.90% for the index of intestinal absorption.

The indexes for the other physiological functions (diabetes mellitus predisposition, allergy predisposition, enzymatic status, assimilation level, metabolism and self-repair level, functional level of the cardiovascular system) have been modified to variable but significant propositions for explaining the symptomatology and pathogenicity, as well as for completing the specific therapy of psoriasis.

This preliminary study must be extended to bigger batches, with a better statistical significance, for substantiating the completion of the nosology, pathogenicity, and therapy panel of psoriasis.

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Conflict of interest
NONE DECLARED

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