CAN BIOELECTRICAL IMPEDANCE ANALYSIS HELP US IN MANAGING, EASY AND FASTER OUR PATIENTS' HEALTH PROBLEMS?

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CAN BIOELECTRICAL IMPEDANCE ANALYSIS HELP US IN MANAGING EASY AND FASTER OUR PATIENTS' HEALTH PROBLEMS? (Abstract) Bioelectrical impedance principle it is a new way of detecting abnormal cellular response. Wegamed devices use this method to discover in a holistic manner a view of the man in all dimensions, body, emotions and intellect, and correlate's the treatment with the characteristics of the individual at all these levels. The aim of the study was to see if using alternative medicine methods can we evaluate correct and noninvasive the patients. **Material and methods:** A retrospective study was conducted to investigate the correlations between the clinical and paraclinically diagnoses and the diagnoses offered by the Wegamed devices. The study includes 440 patients who referred to our clinic between January 2013 and January 2016, who were thoroughly examined through evidence-based medicine methods and then undergo the Test expert plus analyze. **Results:** This retrospective study showed a concordance for some pathologies and diagnostics. The concordance was 100% for acute or oncological pathologies and for other pathologies, mostly chronic, degenerative; the most important is the doctor, who must interpret and correlate, based on his/her experience. **Conclusion:** The classical diagnostic methods can provide accuracy, but a personalized treatment requires viewing the man in all dimensions and specific correlations with the characteristics of the individual. **Keywords**: ELECTRODIAGNOSTIC STUDY, HOLISTIC MEDICINE, WEGAMED DEVICES.

Bioelectrical impedance analysis (BIA) is based on the principle that electric current flows at different rates through the body depending upon its composition. The body is composed mostly of water with ions, through which an electric current can flow (1, 2, 3). The water in the body is localized in two compartments: extracellular water (ECW, approximately 45%) and intracellular water (ICW, approximately 55%) (4, 5, 6). On the other hand, the body also contains non-conducting materials (body fat) that provide resistance to the flow of electric current (7). Adipose tissue is significantly less conductive than muscle or bone (8, 9, 10, 11). The principal of BIA is that electric current passes through the body at a differential rate depending on body composition (3, 12). Hence, there is a direct relationship between the concentrations of ions and the electrical conductivity and an indirect relationship exists between the ion concentration and the resistance of the solution (6, 13, 14, 15).

Nowadays the scientists want to discover a perfect, cost efficient, fast and noninvasive method for a correct diagnose. A mixture between the principles of alternative medicine and the science based medicine may be the answer (16, 17).

For this study, we used 2 types of diagnostic devices from Wegamed based on the bioelectrical impedance characteristics (14). The first one, Text expert plus is a highly – sensitive skin-resistance measuring device designed for use on humans to register physical skin characteristics with respect to their normal, reactive and regulative magnitudes. Investigational and therapeutic options include:

- metabolic regulation testing & therapy program (using homeopathic test and therapeutic data);
- energy screening-automatic resistance measurement of predefined body segments;
- investigational and therapeutic application of pulse currents;
- in addition, by means of special electrodes, a current measurement cam be made to localize galvanic buccal currents.

The Test expert plus device makes causal indication investigations possible by means of holistic capture of the bioenergetics functional state of the human body, its organs and organ systems under normal conditions, as well as monitoring the course of diseases and therapies.

The second device, check medical sport, measures the whole-body. There are 6 electrodes attached to the patient's feet, hands and head. The electrodes are used to apply very low-intensity 13 Hz pulse currents to specific body regions. The current flowing between the two electrodes automatically seeks out the path of least resistance via the body's fluids. The condition and constitution of the tissue affects the system's resulting electrical conductance. For safety reasons, when using this device there are some exclusion criteria, such as: pregnancy, epilepsy, pacemakers, severe cardiac arrhythmia and general acute ailments (7, 14).

MATERIAL AND METHODS

A retrospective study was conducted to investigate the correlations between the clinical and paraclinically diagnoses and the diagnoses offered by the Wegamed devices.

The study includes 440 patients who referred to our clinic between January 2013 and January 2016, who were thoroughly examined through evidence-based medicine methods and then undergo the Test expert plus analyze. The cases consist of 37% men and 63% women, range, 14-97 years, with an average age of 57.8 years, all of them Caucasians.

Designed and developed as an electro acupuncture test device, it provides the prerequisite for bioelectronics regulatory diagnostics using the Wegatest method, including homeopathic remedy test. Known electromagnetic test signals are applied to an acupuncture point via the device's measurement circuit, which then lead to resonance phenomena with the organism and thus to resistance changes at the acupuncture point. In accordance with the applied test information, these resonance phenomena provide investigational information to the trained and qualified users.

The data obtained was processed with the purpose to investigate the relationship between the clinical diagnoses and the information offered by the Test expert plus analyze.

RESULTS AND DISCUSSION

The clinical diagnoses found are divided in 32 main pathology groups. In this article

are reviewed the first 4 major diseases found in the selected group: common lombosciatic syndrome, spondyloarthropathy, knee osteoarthritis and one major group that contains all cardiovascular pathologies.

Test expert plus analysis showed that the main organs with abnormal electrical response are the head (more than 50% of the patients), the large intestine and the lumbar area (fig. 1).

TABLE I.

Clinical diagnosis.

Clinical diagnosis	No. %
Common lombosciatic syndrome	30.00%
Spondyloarthropathy	18.86%
Knee osteoarthrosis	16.14%
Cardiovascular pathology	11.14%
Arthralgia	10.00%
Osteoarthrosis	9.77%
Cervicobrachial neuralgia	9.77%
Herniated disc	7.95%
Gastroenterological pathology	7.05%
Chronic lumbago	6.82%
Neurological pathology	6.36%
Coxarthrosis	5.68%
Osteoporosis	5.23%
Periarthritis scapula humeralis	4.09%
Endocrinological pathology	3.41%
Trauma	3.18%

TABLE II

Clinical diagnosis.

Clinical diagnosis	No. %
Discopathy	2.95%
Otolaryngology pathology	2.27%
Arnold / Luschka neuralgic	1.82%
Temporomandibular arthrosis	1.82%
Calcaneal spur	1.82%
Cervical arthropathy	1.59%
Vertebrobasilar insufficiency	1.14%
Tendinitis	0.91%
Rheumatoid arthritis	0.91%
Ankylosing spondylitis	0.68%
Anemic syndrome	0.68%
Algoneurodystrophy	0.45%
Pulmonary pathology	0.45%
Lumbar spinal stenosis	0.23%
Gout	0.23%
Brahial plexus injury	0.23%

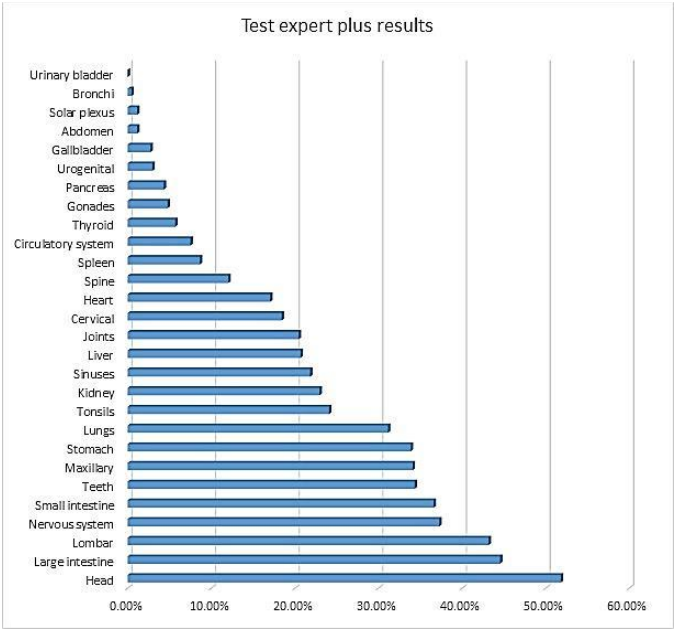

Fig. 1. Test expert plus results.

A. **Common lombosciatic syndrome**. In the selected group were diagnosed 132 (30%) patients with common lombosciatic syndrome. 73 (55%) were women and 59 (45%) men. These patients also presented other pathologies represented in figure 3. 27 (20.45%) cases suffered from spondyloarthropathy, 25 (18.9%) patients were diagnosed also with knee osteoarthritis and 18 cases (13.63%) had herniated disc problems. At the evaluation of the entire body with the Test expert plus, 67 (50.75%) patients had the lumbar region affected. The next organ that presented modifications was the large intestine, found abnormal in 62 (46.96%) cases.

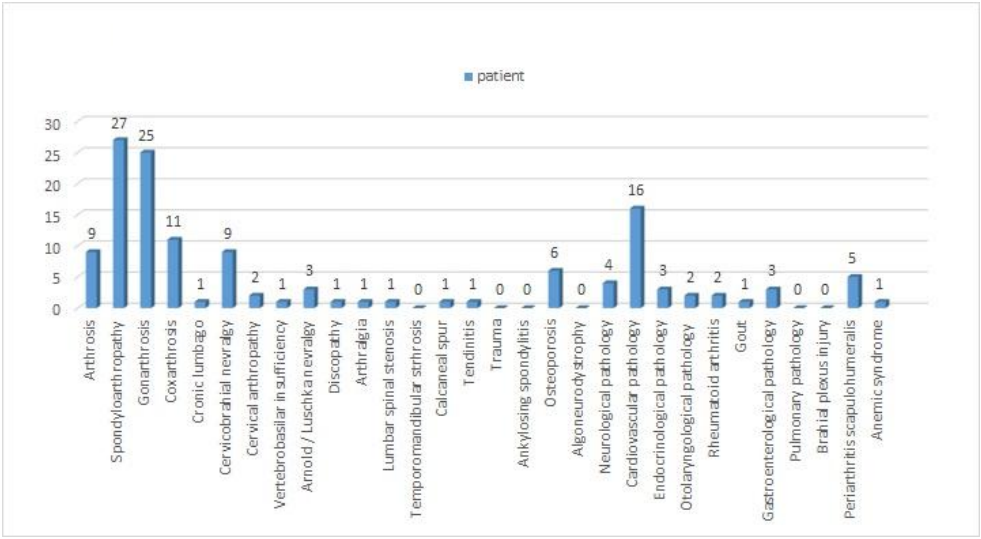

Fig. 2. Clinical diagnosis of the patients with common lombosciatic syndrome.

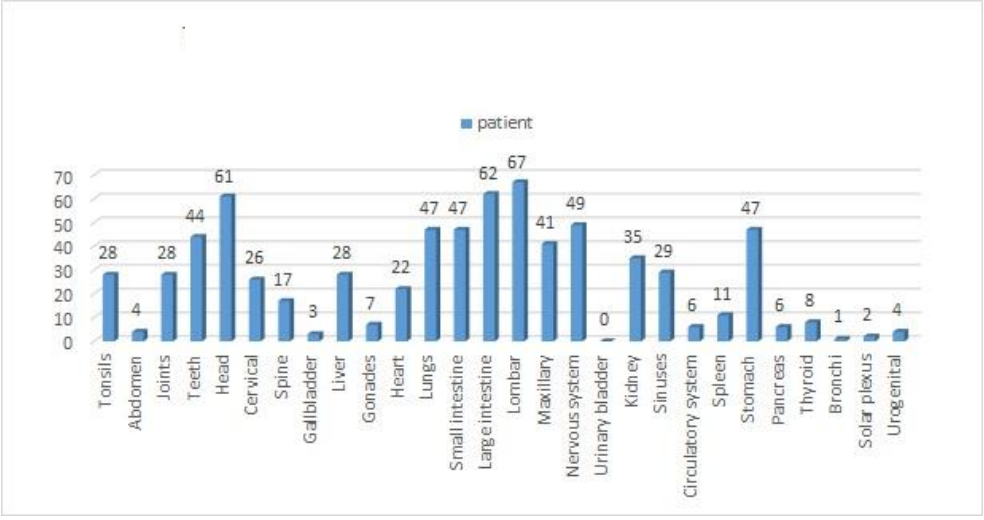

Fig. 3. Test expert plus results from patients with common lombosciatic syndrome.

B. **Spondyloarthropathy**. There were diagnosed clinical and paraclinically 83 (18.86%) patients with spondyloarthropathy. In 27 (32.53%) cases, this disease was associated with common lombosciatic syndrome and with knee osteoarthritis in 17 (20.48%) cases (fig.4).

C. The results from Test expert plus analyze showed that 47 (56.6%) patients presented alteration of the electrical signal in the region of the head. The large intestine was affected in 42 (50.6%) cases. The number of the patients with digestive problems at any level exceeds the number of the patients with spondyloarthropathy, therefore is a strong correlation of the spondyloarthropathy and digestive system alteration (fig. 5).

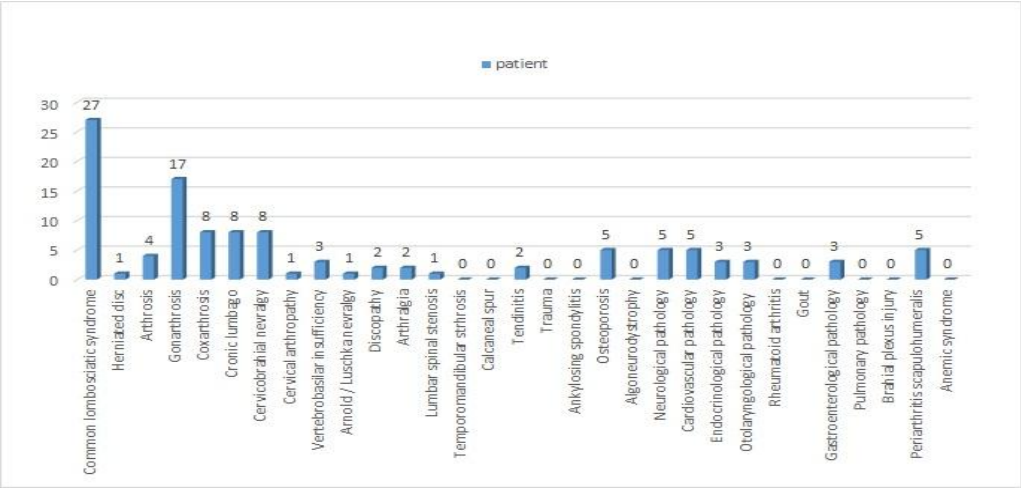

Fig. 4. Clinical diagnosis of patients with spondyloarthropathy.

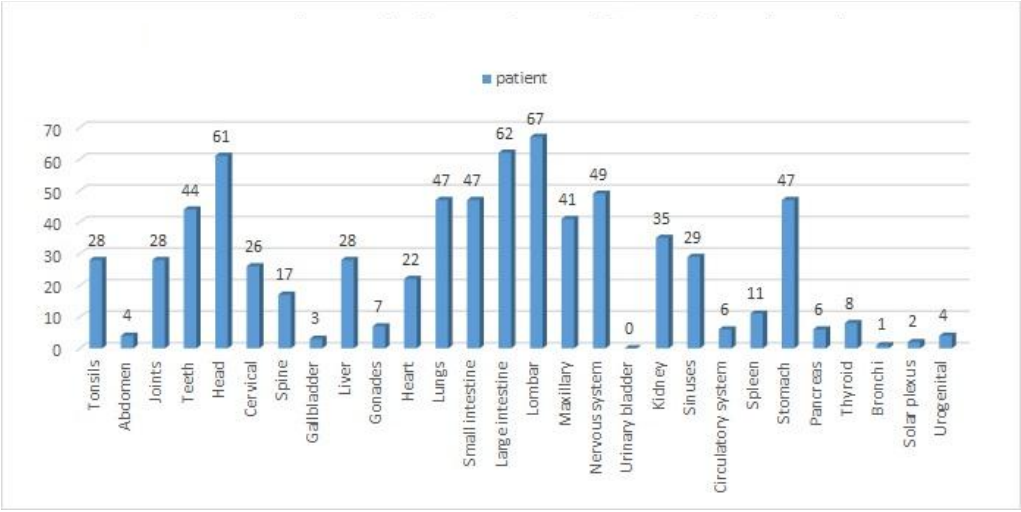

Fig. 5. Test expert plus results from patients with spondyloarthropathy.

D. **Knee osteoarthritis**. From the selected group, 71 (16.14%) patients were diagnosed with knee osteoarthritis. 24% of those patients had older degenerative osteoarticular pathologies. 14 (19.71%) cases had associated cardiovascular diseases (fig. 6).

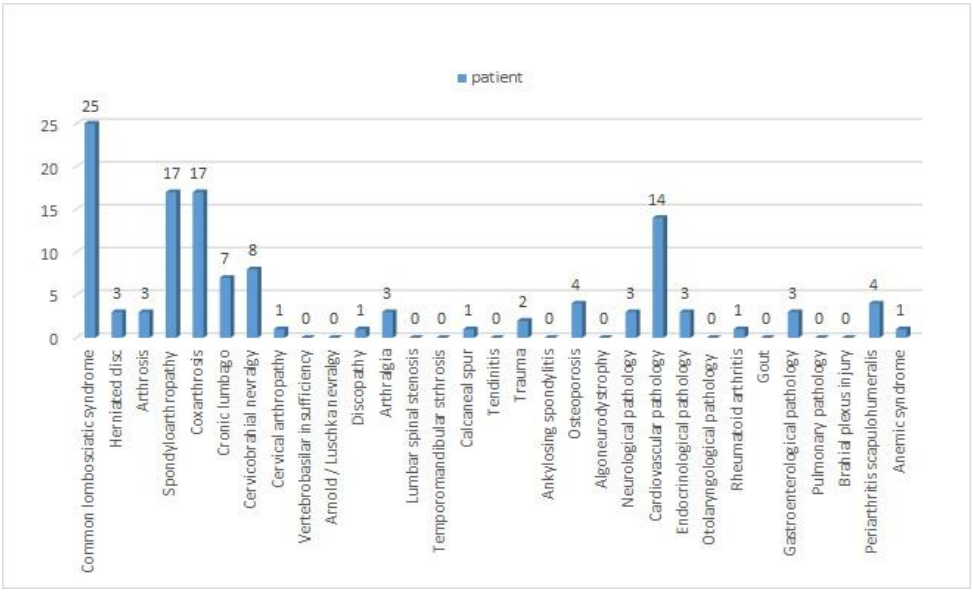

Fig. 6. Clinical diagnosis of patients with spondyloarthropathy.

Test expert plus evaluation results are similar with the ones mentioned above. Thus, 38 (53.3%) of patients presented large intestine modifications. The head region had the electrical signal altered in 35 (49.2%) cases. For this disorder, also exists a strong correlation with one or more digestive system problems (fig. 7).

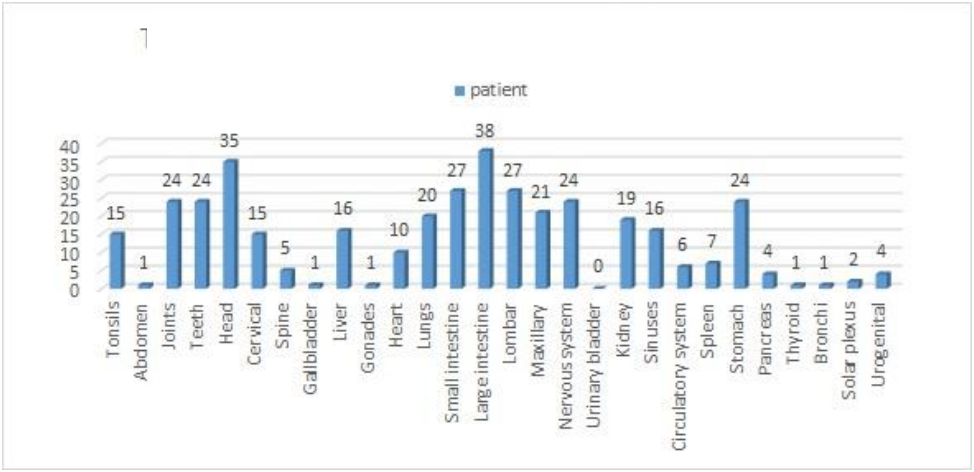

Fig. 7. Test expert plus results from patients with knee osteoarthritis.

E. **Cardiovascular pathologies**. 45 (11.14%) cases were initially diagnosed with cardiovascular pathologies. 16 (33.5%) associated common lombosciatic syndrome and 14 (31.1%) suffered from knee osteoarthritis (fig. 8). Test expert plus investigation showed that 24 (53.3%) of patients presented modifications of the electrical response at the head level and 22 (49%) of cases at the nervous system level (fig. 9).

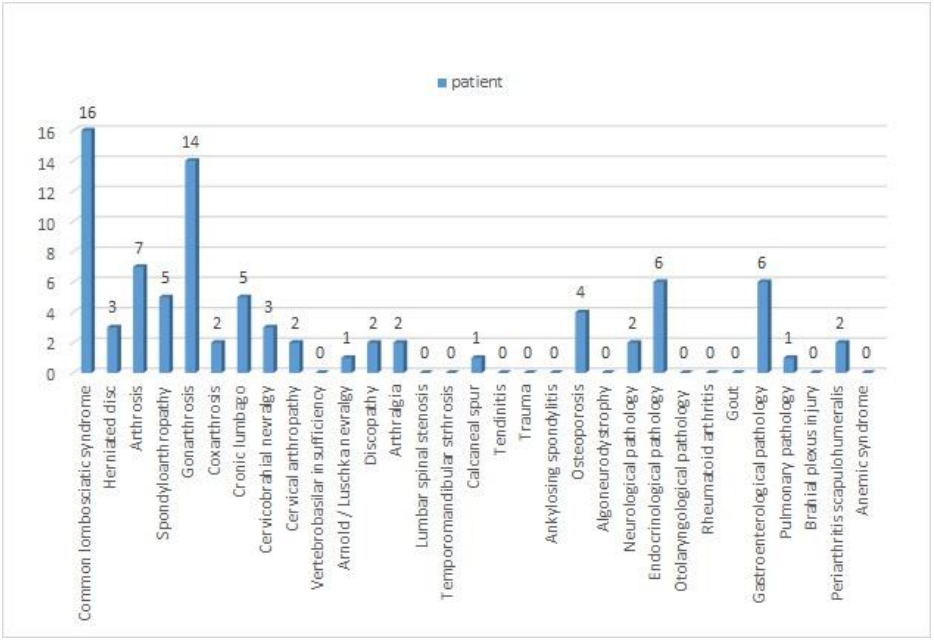

Fig. 8. Clinical diagnosis of patients with cardiovascular pathology.

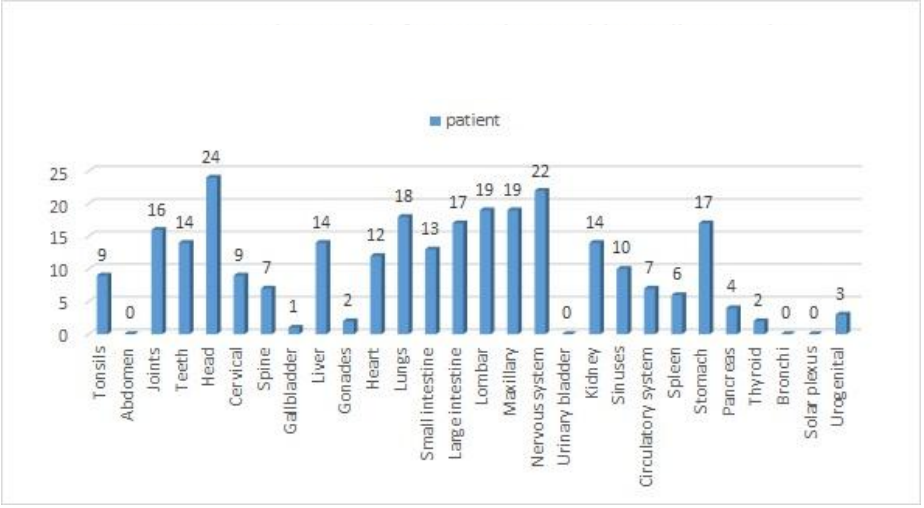

Fig. 9. Test expert plus results from patients with cardiovascular pathology.

Next, we will illustrate 2 cases that reveal the benefits and the limitation of this holistic method of diagnose.

Case study 1: female patient, 60-years-old, with family history of colon cancer, presented for cervical spondylosis. The Wegamed electro diagnostic revealed an important energetic anomaly concerning the inferior digestive system. Clinical and paraclinically diagnostic did not show any pathological signs at that level and based on the Wegamed study, we recommended a colonoscopy with biopsy, which revealed numerous polyps in the large intestine in a pre-malignant stage (fig. 11).

Case study 2: male patient 60-years-old, diagnosed with ankylosing spondylitis stage IV. The patient has a good functionality overall but his physical impairments affect his daily living activities. The Wega test showed moderate to severe impairment in all major organs affected by the disease. Also, there were low energy resources.

The dental examination showed minimal-moderate inflammation (fig. 12).

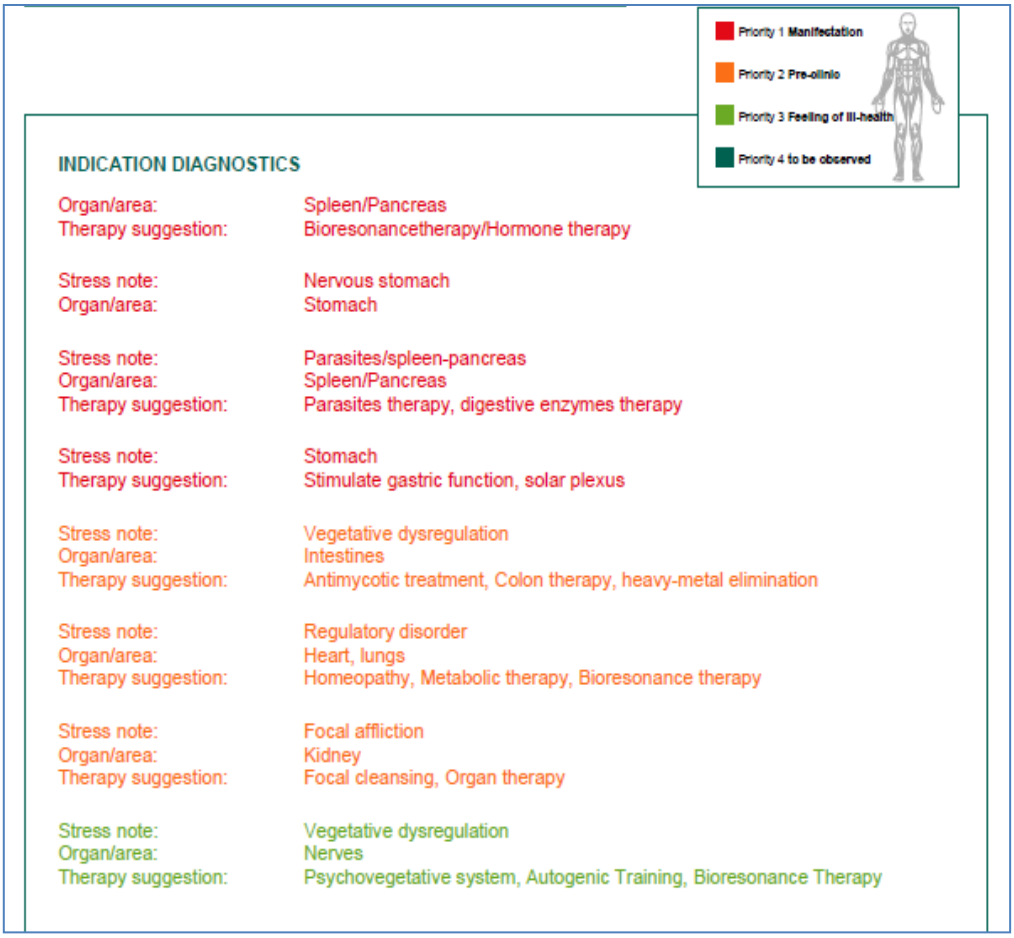

Fig. 10. Wegamed analyze of case study 1 revealing the inferior digestive system.

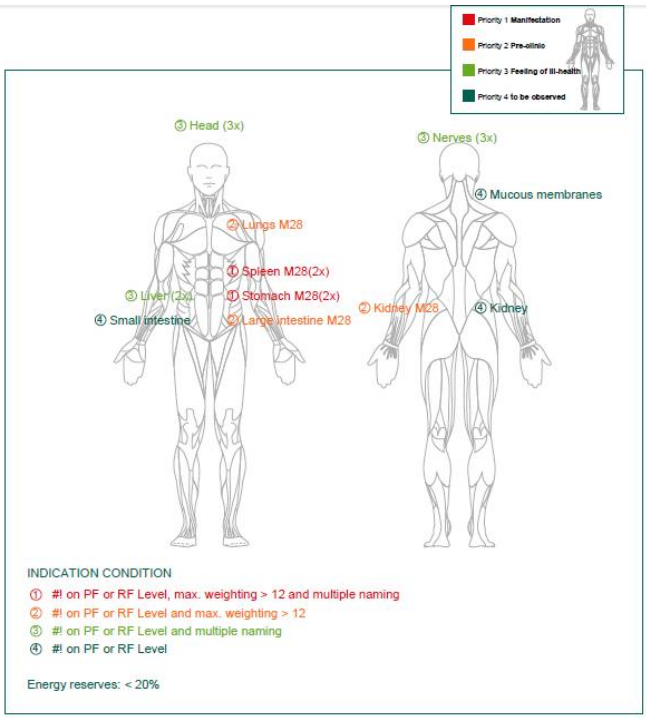

Fig. 11. Wegamed analyze of case study 2 showing moderate to severe impairment in all major organs affected by the disease.

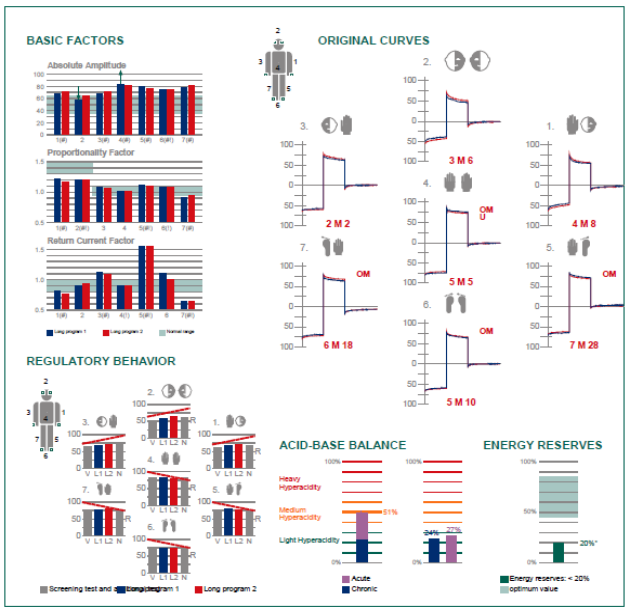

Fig. 12. Wegamed analyze of case study 2 that reveals low energy resources.

CONCLUSIONS

In our research the statistical analysis based on the correlation between primary and secondary diagnostics of the cases and Wegamed devices analyze was done to find a concordance between these two methods of diagnostic. This showed that for some pathologies and diagnostics the concordance is 100% and for other pathologies, mostly chronic, degenerative, the most important is the doctor, that must correlate based on his/her experience.

Based on the obtained results we should view in our medical practice the patient in all dimensions, body, emotions and intellect, and to correlate the treatment with the characteristics of the individual at all these levels.

The classical diagnostic methods provide accuracy to the molecular level, but it doesn't correlate in functionality over time. Bioelectrical impedance analysis (BIA) could be cost efficient, fast and noninvasive method associated with the classical diagnosis methods.

Further studies are needed to understand the intimate correlation mechanism between classical diagnostic and bioelectrical impedance analysis (BIA).

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NEWS

HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY – A CUTTING EDGE THERAPHY FOR ADVANCED OVARIAN CANCER?

Nowadays, it is well known the importance of hypertermic intraperitoneal chemotherapy in colo-rectal cancer, pseudomyxoma peritoneii and malign mesothelioma, but it's significance in advanced ovarian cancer isn't so certain so far. There were published the results of a phase II study performed at the Unit of General, Emergency and Transplant Surgery at Sant'Orsola-Malpighi Hospital, University of Bologna, Italy, the Unit of General Surgery and Gynaecologic Surgery of Papa Giovanni XXIII Hospital, Bergamo and the Unit of Gynaecology of the Jena University Hospital, Germany. Patients with primary, advanced (FIGO stage IIIC to IV), or recurrent EOC were eligible for the present study to be treated with cytoreductive surgery and HIPEC with Cisplatin (100 mg/m^2) and Paclitaxel (175 mg/m^2). It seems that using cytoreductive surgery and HIPEC, using cisplatin and paclitxel it is feasible and comparable with the other drugs regimens with similar mortality and morbidity rate. The benefit for the overall survival and for the morbidity and mortality rate, it seems that it's a statement for the treatment in ovarian cancer (Federico Coccolini, Luca Campanati, Fausto Catena et al. Hyperthermic intraperitoneal chemotherapy with cisplatin and paclitaxel in advanced ovarian cancer: a multicenter prospective observational study. *J Gynecol Oncol*. 2016 Jan;26(1):54-61).

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