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Congress Abstract – L01

Research of Sanogene Quality of Natural Mineral Water

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Abstract: Significant progress has been made, especially in the last decades, in the field of food quality, and according to European Council regulations, water is included in the category of food. Natural mineral water quality research provides scientific information and arguments about its therapeutic properties and efficacy, its contribution to our health, possible benefits in drug economics or the discovery of new factors with therapeutic potential. However, their administration for therapeutic purposes requires close monitoring, and the frequency must be constantly adapted to the hydromineral source. Mineral waters, these ecosystems can have multiple and diverse interactions, on the supply route or in the distribution system. Research must be multidisciplinary, from the point of view of the geologist, the chemist regarding mineral waters in terms of their physico-chemical, microbiological composition, stability, pharmacist on pharmacodynamics, biologist who considers them an integral part of the ecosystem, of the sensory analysis, but also the research of the radioactivity of the source water, of the doctor for whom the mineral waters are cure factors with clinical, pharmacodynamic effects. New quality concepts are emerging, such as information quality, which can assess the quality of the effect of food on the epigenetic level. As methods of analysis of the informational quality we mention the electronography, the biocrystallization (crystallization of the copper chloride) which allows the evaluation of the stability of the mineral waters in time. In conclusion, we can say that water quality research is necessary for its safety, for the spa industry, for the industry involved in natural water bottling, for the final beneficiaries, consumers who use mineral waters for prophylactic and therapeutic purposes.

Congress Abstract – L02

Environmental and Lifestyle Factors in Neuromodulation of Central Monoaminergic Neurotransmitter Systems

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Abstract: Experimental modeling and revealing of neuromodulation on central monoaminergic systems of environmental and lifestyle factors were realized. 3 groups of laboratory animals (rats): control (n=5); forced physical activity during the resting period (n=5); forced physical activity with the consumption of hedonic food (n=5) were used. Forced physical activity during the resting period (shift work modeling) was simulated by a rotating cage. The hedonic food consumption included the preferred aliments in the diet. The concentration of monoamines and their metabolites was estimated by high-performance liquid chromatography. In the prefrontal cortex (PFC) after forced physical activity the norepinephrine concentration significantly increases compared to control group (by 36.7%, P<0.01). The serotonin concentration increase in the PFC was less pronounced (by 17.9%, P<0.05) and associated with the dopamine concentration decrease (by 23, 2%, P<0.05) and reduced homovanillic acid concentration (by 21.8%, P<0.05). In order to optimize physical activity its duration was limited up to 240 min and combined with the intake of palatable food. Optimization scheme induced a significant increase in the dopamine concentration increase (by 27.5%, P<0.01) in the PFC, compared with the group of non-optimized animals. Optimization revealed an elevation of the level of serotonin in the hippocampus on the background of a decrease in the concentration of 5-hydroxyindoleacetic acid. Forced wakefulness activates the NE-ergic system and suppresses the DA-ergic system, which provides the effect of reinforcement and the formation of motivation. Physical activity optimization allows leveling the created imbalance of centripetal neuromodulatory action on the cerebral cortex and hippocampus.

Congress Abstract – L03

Particularization of Orthosizing Devices and Anti-Pressure Sores Devices in Immobilized Patients

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Abstract: Introduction: Orthoses - are essential medical devices for neuro-muscular recovery of immobilized patients in the medium and long term (immobilized patients after traumatic accidents or immobilized patients due to severe degenerative neurological pathologies: paralysis, coma, neuro-motor dystrophies, etc.). Objectives: The objectives of this project are aimed both at reducing the time required for recovery and at the accessibility of these devices among patients with medium or low income and even without income (in this case we also involve the voluntary sector and sponsors). Methods: The medical recovery of patients with neurological pathologies requires a close multidisciplinary collaboration (surgeons, neurologists, balneologists, cardiologists; physiokinetotherapists, orthosis specialists as well as a continuous specialized medical assistance). The aim of this project is to offer as many patients as possible the benefit of a customized orthosis or anti-pressure sores devices that will increase their chance of recovery and, at the same time, to minimize the complications that may occur over time (ligament retractions and tendons, anatomical deformities, muscle atrophies, etc.) at the lowest possible cost. Results: The technique of making an orthosis requires solid knowledge both in terms of the principles of orthosis and the techniques and materials needed to make it. In addition to these aspects, the economic segment - represented by the analysis of total costs - led to the same result: much lower costs per device compared to the purchase price in specialty stores and short lead times: maximum 48 hours / orthosis, respectively 20 - 45 minutes for making an anti-pressure sores. Conclusions: In a modern, growing society, we need to find innovative solutions in terms of medical recovery because Prevention involves much lower costs than Treatment.

Congress Abstract – L04

Olanesti Balneological Resort – a Future Perspective

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Abstract: Baile Olanesti is a balneological settlement of national interest with an all-year activity. It is located at 18 km west of Ramnicu Valcea, in a depression between the hills of the Southern Carpathians on the banks of the Olanesti river. First chemically analyzed in 1830 and mentioned in 1837 in the first paper on balneology published in Romania, the waters from the resort received the Gold Medal at the Vienna International Exhibition in 1873. The internal water cure is one of the main types of therapies that can be performed in Olanesti. This is very effective because in addition to the physical-chemical qualities of the water drunk directly from the spring, the treatment is also associated with the curative effects of walks, the landscape, rest - with all their positive psycho-affective implications. The use of natural healing factors is done in association with artificial healing factors such as medical massage, kinesiotherapy, hydro-kinesiotherapy, electrotherapy, phototherapy, sound-therapy, magnetotherapy. In addition to the classic methods of treatment in the resort, new 4-star accommodation facilities have appeared that want to change the paradigm. More and more companies and businessmen were attracted by this area, which offers them top conditions with western level spas and conference rooms. Even the youth is more and more present, being attracted by the new location Aqua Park Tisa Spa Resort which is divided into 2 parts, namely the Aqua Park area and the Spa area. In the Aqua zone the youth can enjoy 5 slides, an outdoor pool, a swimming pool and a leisure pool equipped with hydromassage beds, waterfalls, lazy river, jacuzzi and pool bar. The Spa zone is called Thermarium with strict access for people over 16 years old to maintain an atmosphere of complete peace and harmony. Here, among the many facilities, there is a relaxation area with various types of saunas, steam baths, saline and emotional showers. Also in this area, tourists can opt for one of the many types of massages with volcanic stones, aromatic sachets, ice and fire, anti-aging rituals and even a Moroccan-style hammam. Although the addressability of the resort was until recently one for people past a certain age, we can say that through investments in the latest generation facilities this has changed and the future sounds very good for this resort.

Keywords: Olanesti, hydro-kinesyotherapy, therapeutical water

Congress Abstract – L05

Health effects of mineral water from 1 and 1 bis Springs, Slănic Moldova: *in vitro* study design

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Abstract: What characterizes science and research is a certain model of thinking that goes beyond the stage of simple passive observation. Scientific thinking "asks" or "asks questions" and gives "answers" according to certain methodical rules, fixing its point of view on a certain project, which thus becomes a research topic. This time, the proposed theme is to find the answer to the question "How does the consumption of the researched water influence our lives?". Wistar rat studies will support the pharmacology investigations that will be needed to test and understand the therapeutic properties of water. The cellular and molecular approach uses primary cultures of muscle fibroblasts obtained from tissues collected from Wistar rats. Research at the molecular level will follow the characterization by electrophoresis, ELISA and Western blotting of molecular markers described in the specialized literature. Mathematical data analysis supports and validates experimental hypotheses. During the inflammatory process, various cell types are recruited, including monocytes that differentiate locally into macrophages. This leads to the regulated production of various pro- and anti-inflammatory mediators including cytokines such as tumor necrosis factor (TNF)- α and interleukins IL-6 that play critical roles in controlling the inflammatory process. Experimental demonstration of the therapeutic effects of water on health will be carried out on Wistar rats, using experimental models and techniques of *in vitro* cultivation of cells - fibroblasts. On Wistar rats, groups bred under standard conditions according to existing standards as follows: in cages, in groups of 6 animals, so that it is possible to observe each animal; temperature 21-22°C; humidity: minimum 30% - maximum 70%; the circadian cycle of 12 hours of light and 12 hours of darkness; conventional or batch-specific diet. Primary cultures of muscle fibroblasts. Treatment of cell cultures with water, phase contrast microscopy. Determination of cell division and cell viability - Cell viability assay (MTT) on water-treated fibroblast cell cultures. Determination of total protein, sodium and potassium pump activity. Analysis of the protein profile of primary cell cultures. SDS-PAGE electrophoresis, Western blotting.



Figure 1 Wistar rat pups (aged 3-4 days) and the related research infrastructure used experimentally (presented setup) to obtain primary glial cells cultures.

Keywords: sulfurous mineral water; Slanic Moldova; fibroblasts cell cultures; electrophoresis, ELISA and Western blotting

Congress Abstract – L06

Combined method based on hyperspectral imaging and biological investigations to evaluate the effects of natural therapeutic factors in diseases in the field of Neuro-Mio-Artro-Kinetic pathology (BIOHIS Project)

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Abstract: Natural therapeutic factors such as **mud** and **sulfurous mineral therapeutic waters** are used in sanatoriums and rehabilitation clinics as baths or topical applications on the body for many affections in the **Neuro-Myo-Arthro-Kinetic (NMAK)** pathology. Topical applications effects of natural factors on healthy and pathological tissues could be explored by electromyography (EMG), pulse-oximetry, biological investigations, using various blood and biochemical parameters, or through indirect, clinical methods, using various scales, in a medical evaluation activity, as for pain (VAS-Visual Analog Scale), for motion capacity (Range of Motion), or the improving of performing daily living activities. The spectrum of pathological conditions related to **NMAK** apparatus includes arthroses, arthritis, spondylitis, traumatic injuries, stroke, neurodegenerative diseases, muscle tone dysfunction, and joint mobility – spasticity; peripheral nervous system pathology: discogenic and/or vertebrogenic radiculopathies, poly-radiculoneuritis, limb amputations, post-COVID-19 peripheral nerves or central nervous system sequelae, neurogenic heterotopic ossifications, traumatic musculoskeletal pathology, including degenerative diseases, fractures, endoprostheses for osteoarthritis especially on hip joints, disabling knees, contusions, muscle contractions/retractions, algoneurodystrophies, pressure sores, eschars or burns. Studies regarding the natural therapeutic factors point often in their conclusions the lack of scientific substantiation for many therapeutic practices using balneary remedies. The **BIOHIS project** aims to develop, test, and validate a novel **bioengineering method**, using **combined data of hyperspectral imaging (HSI) tools** with **biological investigations** for evaluating the therapeutic efficacy of natural therapeutic factors, like mud or natural sulfurous mineral waters, in the field of **NMAK** pathology. In contrast to current approaches that take into account only discrete biological parameters, as hematological or biochemistry laboratory parameters, invasive electromyography, or clinical scales as measuring instruments, the **BIOHIS** project will be able to exploit both spatial context and spectral correlation but also intimate biological information for a better understanding of the effects of natural therapeutic factors.

Keywords: Neuro-Myo-Arthro-Kinetic (NMAK) pathology; BIOHIS project; mud; sulfurous mineral therapeutic waters

Congress Abstract – L07

The Role of Nutrition in Combating Inflammation and in Pain Management

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Abstract: Pain and inflammation are ubiquitous among patients seeking the help of physical medicine and rehabilitation specialists. Studies have shown that both pro-inflammatory and anti-inflammatory cytokines are elevated in painful conditions and that there is some association between the level of inflammatory cytokines and intensity of the pain. Administration of anti-inflammatory and pain medications, electrotherapy, balneotherapy and massage therapy are some of the methods used in physical medicine and rehabilitation to manage inflammation and pain; however, many studies show that diet can also play an important role in how much inflammation is generated within the body. Polyphenols, found exclusively in plant foods, modulate various inflammatory signaling pathways, decreasing their activity, including the NFkB cascade, MAPK pathway, and the arachidonic acid signaling pathway. Their action upon the latter is considered one of their most important anti-inflammatory mechanisms. Likewise, omega-3 fatty acids, particularly eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), have been shown to have an anti-inflammatory effect. In contrast omega-6 fatty acids, which are found in high levels in animal products and many processed oils, are converted to arachidonic acid, thus favoring an inflammatory state. The arachidonic acid pathway involves the release of inflammatory mediators, such as prostaglandins, thromboxanes and leukotrienes, and is the target of numerous anti-inflammatory drugs, however a more balanced dietary intake of omega-3 and omega-6 fatty acids could also contribute to a reduced level of inflammation. Epidemiological data, observational studies as well as interventional studies have demonstrated that various dietary components modulate the inflammatory process. As recommended by most nutrition authorities, a high intake of vegetables, fruit, and whole grains would provide a wide array of bioactive compounds to help improve the inflammation profile of patients suffering from chronic illness.

Congress Abstract – L08

Charcot-Marie-Tooth disease – a review

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Abstract: Introduction: Charcot-Marie-Tooth (CMT) disease is a common inherited neuropathy, which involves demyelination or axonal degeneration. Charcot-Marie-Tooth is transmitted through autosomal dominant, autosomal recessive, or X-linked inheritance¹. Clinical features are: progressive muscle weakness of the limbs with biomechanical consequences; followed by atrophy, distal sensory loss, absent tendon reflexes, foot deformities² and pain. Symptoms begin with distal leg weakness and later on the disease can affect the distal arms. Commonly, the onset of the disease occurs in young adults, but symptoms may appear later on. At the present time there is no available treatment for CMT, rehabilitation therapy is used to slow down muscle atrophy and maintain flexibility, and also orthopedic surgical treatment is used for skeletal deformities. Materials and methods: We used the PubMed database to select and evaluate articles about treatment in Charcot-Marie-Tooth disease. We filtered results by year, text availability and publication date. Conclusions: Charcot-Marie-Tooth disease is a progressive genetic disorder, affecting peripheral nerves. Rehabilitation therapy may be beneficial in preserving functionality in patients with CMT, however there is a need for larger randomized controlled trials to prove clear results in this type of intervention for the treatment of Charcot-Marie-Tooth disease.

Keywords: neuropathy, rehabilitation, muscle weakness, genetic disorder.

Congress Abstract – L09

Osteonecrosis – What we know?

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Abstract: Osteonecrosis is a condition affecting patients usually under the age of 50 years and is a major health, social and economic challenge. It has become more prevalent along with increasing use of corticotherapy, chemotherapy as well as management of organ transplantation or partly due to raised awareness, but still no one pathophysiologic mechanism has been identified as the etiology for development of osteonecrosis. However, the basic mechanism remains impaired circulation to an area of bone that eventually becomes necrotic. Background: In the last years there was a big focus on treating osteonecrosis, especially osteonecrosis of the femoral head (ONFH), with bone preserving procedures, in the early stages (precollapse) and even in later stages. Non-operative treatment option like low-molecular-weight heparin, bisphosphonates, statins, prostaglandins analogue, angiogenic growth-factors, antiapoptotic factors, hyperbaric oxygen, biophysical therapies (electromagnetic fields, extracorporeal shock-wave therapy), mesenchymal stem cells, combined or not with operative treatment like core decompression, femoral os-teotomies, vascularized and non-vascularized bone grafting, has been intensively studied, along with improved classification systems and new potential biomarkers. The aim of our paper is to try and answer the question "What we know?" and summarize the progress that was made in the last years with regard to osteonecrosis through a review of literature. Conclusions: With no one pathophysiologic mechanism identified as the etiology for development of osteonecrosis there are many research directions and strong, evidence based studies are still needed. Yet, there are few studies that led to adopting new therapies and classification systems, and recognized the pathophysi-ological mechanism in corticosteroid and alcohol induced ONFH.

Keywords: osteonecrosis, study, patient, review, treatment

Congress Abstract – L10

Flexible flatfoot in children and adolescents : clinical aspects and algorithmic approach

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Abstract: Flexible flatfoot is considered a normal foot shape that is present in most children and many adults. It is known that the plantar arch of the foot elevates spontaneously in most children during the first decade of life. There are two types of flat foot which we should know how to diagnose and differentiate each other: flexible flat foot with a tight Achilles tendon and rigid flatfoot, which may be a more serious condition and usually it has surgical indication as a treatment. In flexible flatfoot, medial longitudinal arch of the foot collapses in various degrees during weight-bearing. However, during tiptoe test foot arch forms again, which is a very important test to make a difference between flexible and rigid flatfoot. In many cases, this condition of the foot doesn't produce any symptoms, but children are brought to the medical centres by their families. As a diagnostic method for flatfoot is a plantar pressure analysis which can provide information about dynamic loading of the foot, as well information specific to each region in contact with the ground. Treatment for flatfoot: many studies have demonstrated that there is no need to treat flexible flatfoot in children without any complaint. But in symptomatic patients with painful medial longitudinal arch, night cramps or shortening of Achilles tendon, stretching exercises, muscle strengthening exercises, orthosis, arch support insoles, use of more rigid orthoses such as UCBL or Helfet heel cups may be helpful to correct talo-navicular-cuneiform axis and increasing calcaneal dorsiflexion with good result on patients' complaints.

Congress Abstract – L11

The Role of Physiotherapy in Sleep Apnea in Adults

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Abstract: Introduction: Obstructive sleep apnea affects approximately 24% of men and 9% of women, characterized by episodes of partial or complete cessation of breathing during sleep, due to hypotonia of the neck and tongue muscles. This leads to a decrease in oxygen saturation in the blood and interruption of sleep. Material and method: Following the anamnesis and clinical evaluation, 4 subjects with obstructive sleep apnea were selected, aged between 52 and 71 years, 3 males and 1 female who received physiotherapy treatment for 4 months. The specific assessment aimed at assessing the range of motion of the cervical spine, the circumference index, the Epworth sleepiness scale, the Berlin questionnaire and sleep time. The physiotherapy program included exercises for reeducating the nasal breathing, diaphragmatic breathing exercises, phonation and swallowing exercises, tongue muscle toning exercises. Results: There was an improvement in the range of motion of the cervical spine, respiratory movements in the three areas evaluated, axial, medial and abdominal, from 3 cm initially to 7 cm final. The values recorded following the evaluation of the specific questionnaires, the Berlin questionnaire and the Epworth drowsiness scale showed decreases in the 4 patients in the study. The night's rest time increased by an average of 1.5 hours. Conclusions: Oropharyngeal exercises are a new way to recover patients with obstructive sleep apnea syndrome. An individualized physiotherapy program focused on the symptoms of each patient improves respiratory function and increases sleep quality.

Key words: sleep apnea, physiotherapy, breathing and swallowing exercises

Congress Abstract – L12

A Challenging, Complex Rehabilitative Case, With Finally Favorable Outcomes, of an AIS/Frankel D Paraplegia post Thoraco-Lumbar Spinal Cord Injury (SCI) with Repetitive Episodes of Cephalgia, Local Postsurgical Complications and Recent Paroxysmic Atrial Fibrillation

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Abstract: Introduction: Our paper presents a complex neurorehabilitative case of a paraplegic patient after SCI due to a few complications risen during hospitalization, which led to some vital potential secondary diagnoses suspicions, and also due to difficult therapeutical management. Paraplegia is a long term consequence of SCI that can usually determine severe and permanent dysfunctions, generating rather permanent sequels. Materials and methods: We followed the evolution of a hypertensive 73 years old patient with psoriasis who suffered a thoraco-lumbar SCI due to a polytraumatism by falling down the stairs (2 meters) on 06.05.2022 with: T8 vertebral fracture, comminuted fracture with intracanalicular fragment L1 operated (20.05.2022) in neurosurgical unit of our hospital, where she also was diagnosed, in the intensive care unit, after a severe heart rhythm disorder, with paroxysmic atrial fibrillation. Afterwards, the patient was hospitalized in our Neuromuscular Clinic Division for incomplete AIS/Frankel D paraplegia and neurogenic bladder for

initiation of the rehabilitative treatment. In our clinic the patient was assessed functionally using the following scales: AIS / Frankel, modified Ashworth, Functional Independence Measure (FIM), FAC International Scale, Life Quality Assessment (QOL), and also for the lack of autonomy in daily basic activities using Independence Assessment Scale in Daily Activities (ADL / IADL), Walking Scale for Spinal Cord Injury (WISCI). During hospitalization in our unit, the patient had an undulating evolution, with episodes of cephalgia accompanied by nausea, subfebrility and pain in the postsurgical wound, reasons for which were performed repetitive lumbar punctures with cerebrospinal fluid examinations, followed by long term antibiotics treatment. We also treated the comorbidities and performed the management of neurogenic bladder. Results: The patient benefited from a complex pharmacological treatment (managing the urinary tract infection, the blood infection, the pain treatment using: anticoagulant, antihypertensive, antialgic, antiinflammatory and antibiotic therapy) a proper nursing support and a neuromuscular rehabilitation program, with a favorable evolution, with the increasing scores from the evaluated scales and, thus, with a final performance of walking with support of an walking frame and on short distances only with surveillance from another person, as well as a sphincter training with the neurogenic bladder remission. Conclusions: Associating interdisciplinary approach with a customized rehabilitation program in a patient with thoraco-lumbar SCI and other comorbidities/particularities highlighted during evolution, including some of them with life-threatening potential, led to neuromotor improvements, and sphincter function reeducation, with an important improvement in patient's quality of life.

Key words: paraplegia, neurogenic bladder, paroxitic atrial fibrillation, rehabilitation program

Congress Abstract – L13

Ultrasound and Shockwave: Common and Differential Therapeutic Features - Narrative Review

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Abstract: Introduction: Oscillatory electromechanotherapy represents the application of high pressure and frequency mechanical oscillations, that depend on a mechanical medium for propagation. From a theoretical point of view, the following oscillatory mechanical waves, that are currently being used therapeutically, can be classified as oscillatory electromechanotherapy: ultrasounds (US), shockwaves (SW). Materials and methods: Starting with the following keywords: physiotherapy, ultrasound (US), and shockwave (SW), I have selected and analysed 50 published articles between 2000 and 2020, with the purpose of updating basic notions and communicating news in the field. Results: SW, as well as US, are mechanical oscillations that act inside the targeted tissue, thus allowing a comparative analysis on them. SW has an apex pressure that is at least 1000 times stronger than that of the US, and it can be divided into two types: Focused ShockWave/ FSW (or "high pressure") and Radial SW/ RSW (or "low pressure"). Technically, the US and RSW therapies have the same physical-chemical particularities and are being used in physiotherapy programs with relatively superposable indications and contraindications, but the SW's microtraumatic effect makes the difference. The thermal effect (US and SW as thermotherapy) is only a modulable side effect until its elimination depending on the doses used. Conclusions: The comprehensive study of the two related procedures, UST and SWT, makes it possible to develop a physiotherapy chart that is adequate for the patient's disorder and maximize the therapeutic effect with the purpose of improving the patient's quality of life.

Key words: ultrasound, shockwave, physiotherapy

Congress Abstract – L14

Evolution - Eventually Favorable - Particular Evolution in a Patient with Ais-Frankel C Post Traumatic Tetraplegia Having low Tolerance to the Indwelling Catheter for Neurogenic Bladder

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Abstract: Introduction: Spinal cord injury (SCI) is commonly associated with paralysis. More than a decade ago, it meant confinement to a wheelchair and a low quality of life. The range of treatments was very limited. However, advances in researching SCI are made, which brings hope in finding a path leading to regeneration and functional restoration of the deficit. This paper presents a complex clinical case from the point of view of the particularly addressed therapeutic-recuperative management, due to the complications encountered during the evolution. The paper will follow a patient diagnosed initially with tetraplegia AIS/Frankel initial A, and subsequently C-D post spinal cord trauma with C6-C7 dislocation operated on 10.05.2022 (rachisynthesis with bone graft and metal fixation with plate and screws - through anterior cervical approach) and TCC minor grade 0 (GCS=15 points), in a polytraumatic context (affirmative accidental fall from another level, from the ladder from a distance of about 2 m on 29.04.2022). Materials and methods: A 60-year-old patient was hospitalized multiple times in our clinic for complete tetraplegia, later tetraparesis motor deficit, recent personal pathological history of grade 0 brain trauma, neurogenic bladder (wearing an indwelling catheter) and specialized recuperative treatment. The patient has the following personal pathological antecedents: chronic alcoholism, chronic nutritional toxic hepatopathy, left renal cortical cyst. Upon the first admission, he presented multiple infections: urine culture with antibiogram positive for *Proteus Mirabilis*, etiologically treated, remission, positive blood culture for asymptomatic *Staphylococcus Haemolyticus*, etiologically treated, as well as episodes of hematuria, which initially led to the timing of the indwelling catheter. He was clinically-functionally evaluated, according to the standardized protocols implemented in our clinic through the evaluation scales/grids and paraclinically through laboratory analyses, front and profile thoraco-pulmonary x-ray, cervical spine CT. The particularities of the case are represented by the episodes of hematuria associated with low tolerance to the indwelling catheter, as well as multiple infections, respectively with *Proteus Mirabilis* and *Staphylococcus Haemolyticus*, for which the patient was isolated and received appropriate treatment. Results: The patient received complex neuromuscular recovery program implemented by a multidisciplinary team, including specific treatment for the infectious complications and restorative care that addressed the somatic, motor and neurogenic dysfunctions. The overall evolution was eventually favorable from the functional point of view, despite of fact that the recovery process was initially slowed down by the complications that occurred. Conclusions: This clinical case of neuromuscular recovery represents an exhaustive example that highlights the complex multidisciplinary clinical therapeutic-recovery approach, with necessary collateral measures in order to obtain the best results.

Congress Abstract – L15

A complex clinical case associating benign thoracal tumors (vertebral hemangioma and Th3-4 meningioma), thoracal myelopathy, multiple (pre-op and post-op) complications, followed by a favorable evolution from grade C to D paraplegia

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Abstract. Meningioma is generally a benign tumor developed from the meningotheial cells of the arachnoid. Usually, meningioma is a solitary tumor, but sometimes multiple tumors are associated (meningiomas). Patients with an intradural spinal meningioma occupancy percentage of over 65% are more likely to have preoperative symptoms and deficits. Diagnosis is confirmed with a thoracal CT scan with contrast and/or MRI. A comprehensive diagnosis is obtained by surgical resection and histopathological examination.

Case presentation: a 66-year-old female patient with a history of an old Th5 vertebral consolidation, vertebral hemangioma at Th4 level, right L4 disc herniation (operated on 11.05.2022), Th3-Th4 extramedullary subdural meningioma (operated on 17.05.2022), complicated with a CSF fistula (operated on 23.05.2022), was admitted to the TEHBA Neuromuscular Recovery Department with Th3 AIS Frankel C paraparesis.

She was clinically evaluated according to the standardized protocols implemented in our Clinic (MRC, ASIA, ADL, FAC, SCIM, ASHWORTH scales), and paraclinical (usually blood and urinary analyses, contrast MRI of the thoracic spine) to establish a properly adapted rehabilitation program.

Discussion:

Following a complex, multidisciplinary recovery program, her locomotor dysfunction was significantly improved, along with her autonomy and quality of life: regaining the walking scheme, coordination, control, balance, and also sphincter control. At discharge, she was able to independently maintain orthostatic posture and walk with the walking frame for short distances, under the supervision of the physiotherapist.

Conclusions: Asymptomatic, otherwise fit, patients with spinal meningioma occupancy approaching 65% of the spinal canal should be considered for surgery due to the high risk of developing sensory-motor deficits. Even patients with high tumor occupancy and significantly impaired function tend to improve their functional level post-surgery and a specialized rehabilitation program.

Congress Abstract – L16

Correlation between Anxiety or Depression and Pain in Rehabilitation Patients

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Abstract: Introduction: Anxiety and depression has been often correlated to pain and especially with chronic pain. These are the type of patients which address the rehabilitation medical ward, once or twice a year, every year. Some of these patients are at their first visit with a rehabilitation specialist, while others have many years

since they first addressed our clinic. Material and methods: We revised 30 patients which addressed the Rehabilitation ambulatory of the Clinical Regional Hospital Ilfov between February and July of 2022. All patients had pain in several levels, some of them, on multiple levels. All patients were prescribed individual rehabilitation program with physical therapy, kinesiotherapy and massage. At the medical primary visit, the patients were asked and helped to complete the following scales and questionnaires: VAS (Visual Analog Scale), Hamilton Anxiety Scale, Major Depression Inventory, FABQ (Fear-Avoidance Belief Questionnaire) and (PASS-20) Pain Anxiety Symptoms Scale Short Form 20. Results: Most of the patients had a form of anxiety, some of them had the depression scale positive for depression symptoms. The majority of patients which had the higher scores of fear and anxiety related to pain were patients with spinal cord pain, knee pain, and combined affections. Conclusions: Patients with severe pain have some psychological impact leaving them with fear of activity which can lead to pain, with anxiety and sometimes with depression. There is a need to complete de rehabilitation program with psychological evaluation and therapy for these type of patient in order to improve not only their physical condition, but also their state of mind and general well-being.

Keywords: fear of activity related to pain, anxiety related to pain, depression related to pain, rehabilitation and psychological therapy

Congress Abstract – L17

Physical Therapy Role in Managament of Patients with Operated Cervix Carcinoma

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PHYSIOPRAXIS Marian

Abstract: Objectives: One cancer diagnostic is one big psychological, emotional and physical burden that causes in many aspects of one patient's life and his family important changes. The use of physical therapy after cervix carcinoma surgery is an important step in the patient's complete rehabilitation and full socio-professional and family reintegration. Physical therapy means can be: specific and physical exercises, swelling control (compressive therapy, massage) and also personalised programs after each session. Raising awareness regarding the importance of the above mentioned means of treatment after surgical intervention is the main goal of this article. Methods: After several years working with many oncological patients as a physical therapist specialised in manual lymphatic drainage, the importance of physical therapy after cervix carcinoma surgery has been revealed. The first method used in writing this article was consulting the specialised literature about cervix carcinoma, reading and researching through differences between stages and different medical treatment plans that can influence the therapy plan. The second method used was the direct use of therapy on patients with this condition and doing observations, filling patient progress forms and keeping a close contact with his doctors. Results: Due to radiotherapy, chemotherapy and multiple drug treatments that can cause different body reactions, the use of physical exercises, manual lymphatic drainage and classical massage has improved both physical and psychological condition of the affected patients. Conclusions: Due to the fact that cervix carcinoma diagnostic is a life changing condition, using physical therapy can bring quality in day-to-day life and a faster reintegration in society, work environment and family circle.

Key Words: cancer, physical therapy, manual lymphatic drainage, compressive therapy, reintegration, surgery

Congress Abstract – L18

Particularities of the Rehabilitation Program of Patient with Mills Syndrome

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Abstract: Introduction: Mills syndrome is a motor neuron disease, rarely encountered in clinical practice, which can cause difficulties in establishing an certain diagnosis due to the similar clinical pictures such as amyotrophic lateral sclerosis, primary lateral sclerosis, myelitis, antiphospholipid syndrome, being a challenge in establishing the specific rehabilitation program. Objective: The purpose of this case presentation is to highlight the particularities of the rehabilitation program to improve functional status by training walking, improving coordination, quality of life and preventing the occurrence of neuropathic pain syndrome, in case of a patient with Mills syndrome. Material and method: We present a case of an in-patient, 37 years old, female, with Mills syndrome, hospitalized in the rehabilitation unit, presenting left hemiparesis, locomotion self-care deficit and anarthria. After evaluation showed at upper limb: proximal-intermediate motor control present and absent distal, flexum attitude at the elbow and wrist (15-20 degrees), performing pinches and prehension with difficulty. At lower limb: proximal-intermediate motor control present, reduced distal, Babinski indifferent (unsteady). Patient is able to walk with difficulty for short and medium distance with the aid a canadian crutch, requiring help for fulfillment of some daily activities. Results: During the hospitalization the evolution was favorable, with improvement of spasticity, coordination, patient transfers and gait pattern (walking speed, stability, stride length). Conclusions: Considering the progressive aspect of patient pathology, the main role of the rehabilitation program is to improve adaptability, dynamic balance and improving or maintaining quality of life.

Congress Abstract – L19

Our endeavours and experience towards the Re-Accreditation of the Teaching Emergency Hospital “Bagdasar-Arseni” with focused on the related particularities of the NeuroRehabilitation Clinic Division

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Abstract: Introduction: Accreditation is seen as a tool for assessing and improving the quality of healthcare services. However, its effect on performance and results must be established. This analysis of the last 5 years of the Neuromuscular Rehabilitation Clinic Division of the Teaching Emergency Hospital “Bagdasar-Arseni” aimed to identify evidence of the impact of hospital accreditation. Methods: We systematically searched the hospital’s electronic database for resource management indicators, service utilization indicators and quality indicators for the last five years and we synthesized the effects of accreditation on the Neuromuscular Rehabilitation Clinic. Results: In addition to the effect of workplace stress on healthcare staff imposed by obtaining accreditation, our results indicate a positive effect of hospital accreditation on communication, on the culture of improving the quality of the medical record and on patient safety, aspects highlighted in patient satisfaction questionnaires but also through the processing of indicators. Conclusions: There is evidence to support the idea that adhering to accreditation standards brings multiple benefits in improving hospital performance, including with well-documented procedures that improve the organization’s final results, procedures that decrease the rate of adverse events and where patients safety is enhanced.

Keywords: accreditation, healthcare services, medical services, hospital, quality, patient

Congress Abstract – L20

Oscillating Evolution, Finally Favorable After a Complex Rehabilitation Treatment in a Patient with Incomplete Paraplegia After Spinal Cord Injury

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Abstract: Introduction: The paper presents a complex clinical case in terms of severity, the complications that have been encountered, therapeutic-recovery management and also the evolution of a patient diagnosed with incomplete paraplegia after thoracic spinal cord injury on an osteoporotic background without neurosurgical intervention. Locomotor deficit and moderate self-care was followed. Individuals with neurologically incomplete spinal cord injuries can ambulate but spasticity, muscle weakness, and coactivation of muscle groups can affect the quality of their walking thus causing difficulties in social reintegration and also can affect their quality of life. Materials and methods: A 70-year-old patient, with osteoporotic background suffered a thoracic spinal cord injury after a falling (from 1m height) injury resulting in incomplete paraplegia AIS/Frankel C with T2 neurological level without neurosurgical intervention necessary. In our clinical division, the patient had several admissions, followed a complex nursing program and subsequently continued with an adequate and personalized rehabilitation therapy according to clinical stages. The patient was assessed functionally using the following scales: AIS / Frankel, modified Ashworth, Functional Independence Measure (FIM), Life Quality Assessment (QOL), FAC International Scale, Independence Assessment Scale in Daily Activities (ADL / IADL), Walking Scale for Spinal Cord Injury (WISCI). The particularities of the case reside in the osteoporotic background, knowing that vertebral, or spinal, fractures are the most common ones caused by osteoporosis, also the deconditioning tendency of the elderly. The cervical stenosis IRM diagnosed was also a negative predictive factor on evolution of this case, leading to the persistence of insecurity and balance disorders. Neurogenic bladder complications, including urinary tract infections are a frequent cause of morbidity and in this case also determined the limitation of mobility. Results: The patient received complex neuromuscular rehabilitation treatment, with an improvement in the motor and sensitive dysfunctions. The evolution was slowly favorable, the recovery process being hampered by the multiple local and general complications that occurred along the way. Conclusions: This clinical case of neuromuscular recovery is an exhaustive example that highlights the complex multidisciplinary clinical approach, but also the unusual features highlighted during its evolution. Even if there is a long process for a paraplegic to adapt, the accurate clinical-functional evaluation, adding complex nursing measures, personalized rehabilitative kinesiological programs for the patient determined neuro-locomotor improvements with an increase in patient's quality of life: Learn to use assistive devices such as walkers or wheelchairs, regain strength and mobility in areas of the body with nerve function, recover the skills needed for activities of daily living (ADL), including dressing and using the toilet.

Keywords: osteoporosis, cervical stenosis, paraplegia, spinal cord injury

Congress Abstract – L21

Clinical Slowly Progressing, Paraclinical Aspects and Complex Rehabilitation and Therapeutic Care in a Post-Traumatic SCI Patient with Complete Paraplegia

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Abstract: Introduction Spinal cord injury (SCI) is a life-disrupting event. Limited mobility and lack of modalities to allow safe physical activity led to progressive physical deconditioning. A complex rehabilitative care program may offset these detrimental physical changes characterized by progressive physical deconditioning. Material and method We report the case of a 62-year-old woman with personal antecedents of extrasystolic ventricular arrhythmia, arterial hypertension, and type 2 Diabetes mellitus, who suffered an accidental fall in January, followed by the onset of paraplegia and lumbar pain. Four months later, she underwent neurosurgery for circumferential thoracic spinal stenosis. Postoperatively, she suffered an acute coronary syndrome. Results and discussions. The patient followed a complex neuro-muscular rehabilitation program in our Neuro-Rehabilitation Clinic Division with favorable outcomes, but with very slow progress, mainly due to delayed care, cardiovascular complications, and low physical stamina. The case represented a real challenge regarding the complexity of the factors involved. Conclusions. The clinical outcomes and the quality of life of patients suffering accidental falls depend both on the prompt diagnosis and the efficient treatment, followed by an appropriate rehabilitation program.

Keywords: neuro- rehabilitation, accidental falls, paraplegia, acute coronary syndrome

Congress Abstract – L22

Complex Clinical and Therapeutic Rehabilitation Approach with Recurrent Secondary Bladder Lithiasis of a Young Patient with Complete AIS Frankel A Tetraplegia post Thoracic Spinal Cord Injury after Accidental Fall from a High Level

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Abstract: Introduction. Recurrent secondary bladder lithiasis is not a complication that occurs frequently, therefore it is a research topic that can complement the specialized literature. Material and methods. This article presents the evolution of a 23-year-old man who suffered a severe polytraumatic injury by accidental fall from a high level which resulted in spastic paraplegia, left parieto-occipital epicranial hematoma, fracture of thoracic vertebrae T7-T8 (for which he underwent surgery), thoracic trauma with left 8th rib fracture of the posterior arch, right scapula fracture, bilateral pleurisy (more significant on the left side, without indication of drainage). On admission in our clinic, medical tests proved that the patient had an AIS Frankel A deficit with a complete inability to move. Aside of the kinesiotherapy program, he was functionally assessed using the

following scales: Spinal Cord Independency Measure (SCIM), FAC International Scale, Life Quality Assessment (QOL), Muscle Power Assessment (MRC), Independence in Activities of Daily Living (ADL), American Spinal Injury Association Impairment Scale AIS, modified Ashworth, Penn Spasm Frequency Scale (Penn). Results. The neuromuscular rehabilitation program for this patient was delayed due to a non-obstructive bilateral reno-ureteral microlithiasis and a recurrent secondary bladder lithiasis, which led to the patient needing multiple admissions on our department. Fortunately, at discharge, the patient had increased motor control and muscular strength in the upper limbs, and is now practicing unaided transfer and upright standing exercises on the rehabilitation wall ladder. Moreover, there was a considerable score increase in the evaluation scales, on discharge the patient being able to move his upper body and use a wheelchair on his own. Conclusions. Thoracic vertebro-medullary trauma is a condition that requires a well-prepared recovery plan, and when complications such as recurrent secondary bladder lithiasis occur, it requires an exceptional multidisciplinary collaboration for an optimal result and for the improvement of patient's quality of life.

Keywords: thoracic vertebro-medullary trauma, neuro-rehabilitation program, spastic paraplegia, recurrent secondary bladder lithiasis

Congress Abstract – L23

Challenges for Neuromuscular Rehabilitation in a case of a Young Male Patient with Spastic Tetraplegia of Rare Etiology (Spinal Cord Infarction)-Case Presentation

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Abstract: Introduction: Tetraplegia is one of the most challenging complications of spinal cord infarction. Infarction is a relatively rare cause of spinal cord dysfunction with potentially devastating outcomes. It is caused by acute disruption of the spinal cord vascularization and it is usually marked by sudden and severe back pain associated with bilateral weakness, paresthesia, sensory loss and loss of sphincter control. Material and method: In this paper, we report a case of a 41 years male admitted to the Neuromuscular Clinic Division of TEHBA Bucharest, for spastic tetraplegia post cervical-thoracic spinal cord infarction. Initially, the patient was hospitalized in May at the Bucharest Institute of cerebra-vascular diseases for bilateral upper limb distal paresthesia, upper and lower limb distal motor deficit preceded by interscapular pain. Clinical, anamnestic and radiological aspects have advocated the diagnosis of cervical spinal cord infarction in the territory of the anterior spinal artery. In our clinic, the patient was admitted with incomplete AIS / Frankel C sever spastic tetraplegia (distal upper limbs and predominantly proximal lower limb muscles) and horizontal sensitivity at high thoracic level. A nursing program was initiated, a kinesiotherapy program with progressive mobilization, followed by a rehabilitation program adapted to the patient's tolerance. The patient was assessed functionally using the following scales: AIS/Frankel, modified Ashworth, Spinal Cord Independency Measure (SCIM), Life Quality Assessment (QOL), FAC International Scale, Independence Assessment Scale in Daily Activities (ADL / IADL), MRC Scale. Results and discussions: With a complex and adapted neuromuscular rehabilitation program, the patient had a favorable evolution, he starting walk through parallel bars and use his hands for feeding, manipulating the phone, cleaning his face. Conclusions: Even if is a rare pathology, the spinal cord infarction could determinate a complex and debilitating condition changing the live of the patient, but the prompt diagnosis and a good nursing program with a developed kinesiological approach is able to improve our patient's condition.

Keywords: spinal cord infarction, tetraplegia, neuromuscular rehabilitation

Congress Abstract – L24

A Complex Case Of Neuromuscular Rehabilitation With Favorable Evolution Of A Patient With Paraplegia Progressively Installed After Thoraco-Lumbar Spinal Cord Injuries In A Politraumatic Car Accident Context

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Abstract: Introduction. Politraumatic injuries due to car accidents have been a great challenge for healthcare workers around the world throughout time. These injuries are very time sensitive and require an extensive rehabilitation programme based on the severity of the politraumatism. Material and methods. In this study we carefully analyzed the evolution of an 80 year old male that has suffered a politraumatic injury due to a car accident in which he was the driver. The patient was admitted in another hospital initially and did not describe any type of motor or neuromuscular disfunction after the accident, thus he was discharged with bed rest recommendation. In the following week the patient began to present minimal motor deficits which were proven with a thoracal MRI to be due to comminuted thoracal vertebral fractures (T10-T11), oblique thoracal vertebral fractures (T12) and T11-T12 vertebral canal stenosis. After several days the patient's deficit worsened and he was admitted in our hospital on the Neurosurgical department with severe Frankel C deficit. The patient undergoes surgery for the thoracal fracture (metallic vertebral fixation from T11 to L1) with favorable evolution and later on is transferred on our Neuromuscular Rehabilitation department. During his admission on our department, the patient underwent complex medical and kinesiotherapeutic treatments. The patient was assessed with the help of the following scales: Functional Ambulation Categories (FAC), Life Quality Assessment (QOL), Muscle Power Scale (MRC), Basic Activities of Daily Living (ADL), American Spinal Injury Association (ASIA), modified Ashworth, Spinal Cord Independency Measure (SCIM). Results. During his admission on our department, the patient presented a very successful and favorable evolution of the neurological and motor disfunction, from severe Frankel C deficit to Frankel A deficit. Conclusions. By virtue of considerable multidisciplinary efforts and a personalised rehabilitation programme, the patient's neuro-locomotor disability improved considerably and led to a significant improvement in his quality of life.

Keywords: politraumatism, car accident, neuromotor deficit, neuro-rehabilitation programme

Congress Abstract – L25

A Complex Case Of Neuromuscular Rehabilitation Of A Diabetic Patient With Algo-Dysfunctional Status After Repetitive Amputations Of The Left Lower Limb (Initially $\frac{1}{4}$ Proximal Left Half; Further $\frac{1}{2}$ Distal Left Thigh) As A Result Of An Infrainguinal Venous Occlusive Disease

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Abstract: Introduction: Venous occlusion describes a condition in which a vein becomes narrowed, blocked or compressed by nearby structures such as clots, muscles, arteries or other veins. This can lead to serious complications if the right treatment is delayed, such as amputation of the affected limb, generating a disabling condition that can seriously affect the patient life from many points of view. In this paper we followed the evolution of a patient with algo-dysfunctional status after repeated amputations ($\frac{1}{4}$ proximal left calf – 18/02/2022, $\frac{1}{2}$ left thigh – 06/04/2022.), as a result of infrainguinal occlusive disease and a lot of comorbidities: critique ischemia of the lower left limb, post-operative dehiscent wound, type II diabetes, high blood pressure stage I, chronic tobacco smoking. Materials and methods: We present the case of a 54-year-old smoking patient, known with critique ischemia of the left lower limb, that was surgically treated at Emergency Institute of Cardio-vascular diseases "Prof. Dr. CC. Iliescu" for infrainguinal occlusive disease with angioplasty and stent placement (16/11/2021). Because the evolution was unfavourable and the stent implant was inefficient, this surgery was followed by proximal calf amputation (18/02/2022). He was admitted to our Neuromuscular Clinic Division for rehabilitation treatment. After iterative plastic surgery evaluations due to a dehiscent post operative wound, was performed another surgical intervention, in our hospital, consisting in $\frac{1}{2}$ distal thigh amputation (06.04.2022) with finally a favourable outcome. The patient was re-admitted in our clinic for continuing the nursing care and rehabilitation program. For the clinical and functional evaluation of the motor deficit and how it affects the patient's quality of life we used MRC, ROM, ADL, IADL and QOL scales. For the clinical evaluation of the residual limb, were made periodic plastic surgical examinations, the rehabilitation program consists in physiotherapy, kinesitherapy and psychotherapy sessions. Results: The particularity of our case was represented by the residual limb's dehiscent wound because of numerous comorbidities, such as chronic tobacco smoking, HBP, dyslipidaemia, diabetes melitus which worsen the healing. These comorbidities led to surgical re-intervention, consisting of another amputation of the lower limb ($\frac{1}{2}$ distal thigh). Even if the evolution was initially unfavourable, during the two hospitalizations in our clinic, the patient comorbidities were treated (some of them with a high potential of impeding the recovery), he benefited from a personalised and adequate rehabilitation program and the complex approach of the case managed to improve at the discharge the clinical status (increasing muscular force on MRC scale from 4/5 to 5/5.) the patient being able to perform walking using two crutches, and also climbing stairs. Conclusion: This clinical case represents an exhaustive example which highlights the importance of a complex multidisciplinary approach in the nursing care and treatment management of an amputated patient with multiple comorbidities that can lead to a successfully adaptation at the activity of daily living, with an increased Quality of Life and finally to a good integration in the community.

Key words: smoking, amputation, venous occlusive disease, rehabilitation program

Congress Abstract – L26

Case Presentation Of A Patient With Traumatic Brain Injury Consecutive To A Balance Disorder (Of Hypertensive Cause) And Oto-Liquorrhea Due To Unknown Circumstances

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Abstract: Introduction. Neglected and untreated essential hypertension leads to considerable neurological and neuro-locomotor disfunctions. Pathologies due to uncontrolled high blood pressure represent a serious challenge for healthcare personnel and usually require multidisciplinary efforts. Material and methods. This study describes the case of a 73-year-old woman who was found unconscious in her house. The patient was initially admitted in another hospital with a score of 13 on the Glasgow Coma Scale (GCS), where she was found to be suffering of a moderate cranio-cerebral traumatism, left hemisphere subarachnoid hemorrhage, left parieto-occipital epicranial hematoma, left oto-liquorrhea, left temporal bone fracture and a left parieto-occipital wound which was sutured in said hospital. Subsequently, the patient was transferred in our hospital on the Neurosurgical department, where the patient was found to also be suffering of untreated essential hypertension. The Neurosurgical department concluded that there was no surgical indication for this case, thus the patient was transferred on our Neuromuscular Rehabilitation department for stage treatment. On admission on our department, the patient presented right peripheral facial nerve paresis, osteo-tendinous reflexes decreased bilaterally and considerable vertigo syndrome triggered in Fowler's position and with other positional changes. At this time, the patient was not able to maintain a standing position or walk. During her admission on our department the patient benefitted from extensive multidisciplinary care and a personalized rehabilitation program, which led to a favorable outcome. Evolution was assessed using the scales mentioned below: modified Ashworth, Spasm Frequency Scale (Penn), Basic Activities of Daily Living (ADL), Disability Rating Scale (DRS), Glasgow Outcome Scale-Extended (GOS-E), modified Rankin Scale, Barthel Scale, Muscle Power Scale (MRC), Life Quality Assessment (QOL), Functional Ambulation Categories (FAC). Results. The patient's outcome was significant, being discharged with a complete resorption of the subarachnoid hemorrhage and the ability to walk unsupported but under supervision. Due to multidisciplinary efforts the vertigo syndrome diminished considerably, and the patient was advised to carefully observe and treat her high blood pressure. Conclusions. The extensive and personalized rehabilitation program led to an impressive neuro-locomotor evolution, which consequently increased the patient's quality of life.

Keywords: traumatic brain injury, oto-liquorrhea, facial nerve paresis, vertigo syndrome, neuro-rehabilitation program

Congress Abstract – L27

A Multidisciplinary Approach In A Case Of Complete Paraplegia After An Abdominal Aortic Pseudo-Aneurysm Complicated With Stage 4 Sacral Pressure Sore And Clostridium Difficile Enterocolitis – Case Presentation

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Abstract: Introduction: : Paraplegia is one of the possible severe complications of an abdominal aortic pseudoaneurysm caused by the restricted blood supply of the spinal cord. Pressure sores, one of the most challenging clinical problems in neurologically impaired patients could have a devastating impact on a patient's medical evolution without correct and prompt management. Material and method: We reported a case of a 71 years old patient with multiple cardiovascular risk factors (high blood pressure, smoking, dyslipidemia), admitted to the Neuromuscular Clinic Division of Teaching Emergency Hospital "Bagdasar-Arseni" (TEHBA) Bucharest, for complete paraplegia following a partially thrombosed terminal abdominal aortic pseudoaneurysm with extensive calcifications of the bilateral aortoiliac axis, surgically treated using a Dacron prosthesis, with thrombo-ischemic injury of the myelin sheath. At first admission, the patient presented a stage 4 sacral pressure sore requiring immediate plastic surgery in the Plastic, Reconstructive, and Aesthetic Surgery Clinic Division of TEHBA. Unfortunately, post-surgical intervention, the patient's physical and mental state worsened. Results and discussions: The patient had an oscillating evolution due to his numerous complications caused by his susceptible cardiovascular condition and unpredictable mental status. We also have to mention a Clostridium Difficile Enterocolitis diagnosed during his third admission to our Clinic Division, further aggravating his condition. Conclusions: Following the rehabilitation nursing and the complex neuro-muscular kinesiotherapy program, the subject's evolution was favorable with a significant improvement in his physical and mental state.

Keywords: paraplegia, pseudoaneurysm, pressure sore, Clostridium Difficile Enterocolitis

Congress Abstract – L28

Rehabilitation Program Particularities in a Patient with Tetraparesis Due to Inherited Spinocerebellar Ataxia

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Abstract: Introduction: : The prototype of the progressive forms of spinocerebellar ataxia is Friedreich's ataxia, in which patients initially have difficulties in coordination, control and balance, and later in maintaining upright posture and performing walking. A case of early-onset spinocerebellar ataxia, with no family history or recognizable mutations in the genetic tests performed, with brain imaging showing marked cerebellar atrophy, is the subject of this presentation. Material and methods: Patient C.N. at the age of 38, with ataxic tetraparesis that began early in childhood, with a plegic motor deficit at the level of bilateral plantar

dorsiflexion movement, which associates moderate swelling at the level of the hips bilaterally, severe locomotor dysfunction and moderate self-care was hospitalized in Neuromuscular Recovery Clinic of SCUBA for specific recovery program. The patient was evaluated clinically and functionally according to the standardized protocols implemented in our clinic through evaluation scales (FIM, QoL, MMSE MoCA, modified Rankin scale, GOS-E, FAC) and paraclinical investigations (laboratory analyses, electromyography, cerebral MRI) in order to establish the stage objectives. Results: In order to support the diagnosis, the brain MRI examination performed reveals marked cerebellar atrophy, while the laboratory analyzes and the electromyographic examination are within normal limits. During the hospitalization, the patient followed a complex neuromotor recovery program, having a favorable evolution from a functional point of view, with the improvement of the walking pattern, respectively the improvement of coordination, control and balance. Currently, the patient manages to maintain independent standing and performs walking with bilateral support in crutches for short distances, under the supervision of the physiotherapist. Conclusions: Following the complex recovery program, the locomotor dysfunction of the patient was significantly improved, along with the improvement of autonomy and quality of life.

Key words: tetraparesis, hereditary spinocerebellar ataxia, recovery program

Congress Abstract – L29

Diagnostic Problems: Possible Motor Neuron Disease Causing Progressive Motor Deficit In A Patient With Radiculopathy Of The Lower Limbs And Lumbar Canal Stenosis” - Case Report

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Abstract: Introduction: Motor neuron disease is a pathology with an annual incidence of 0.4-1.76 per 100,000 population (US), predominantly affecting men over 45 years of age; characteristic of this disease is the sparing of the sensitive nervous system, with the predilection of the central and peripheral motor nervous system.¹ It typically begins with muscle weakness, either in the upper limb (impairment of fine movements) or in the lower limb (dropped leg).^{1, 2} The motor deficit in the lower limb can mimic a radiculopathy, but they are where the 2 pathologies coexist, as in the present case, increasing the degree of difficulty of the diagnostic process. Materials and methods: With the approval of the SCUBA Bioethics Commission (No.), this paper presents the case of a 70-year-old male patient, admitted to the Neurosurgery II SCUBA department, known to have L1-L4 lumbar vertebral canal stenosis operated on (2014) and lumbar radiculopathy through HDL3-L4-L5 operated right (hemilaminectomy, 2014), and HDL5-S1. He presents with asymmetric motor deficit of the lower limbs with progressive evolution: deficit of plantar and dorsiflexion bilaterally, left (2/5) more than right (3/5). The local examination revealed vivid reflexes in the upper limbs; bilaterally abolished patellar, achillean; Babinski positive right, CPR indifferent left. The patient presents himself for the electromyographic examination at the recommendation of the neurosurgeon. Results: EMG Exam Neurography within normal limits; SNAP NR amplitude / SNAP NS amplitude = 1.67. In needle EMG, spontaneous activity of neurogenic type, rich, is detected in the muscles: posterior deltoids bilaterally, fasciculations 3+; tibialis anterior bilaterally, CRD 3+, fibrillation potentials 3+; left rectus femoris, PSW 1+; dorsal paraspinal, fibrillation potential 1+; lumbar paraspinal, fibrillation potentials 1+; tibialis anterior bilaterally, neurogenic interference pathway. Conclusions: EMG examination possibly compatible with motor neuron disease. Neurological reevaluation is recommended.

Congress Abstract – L30

Experimental Kinetotherapeutic Program For Adults With Cervical Pain Syndrome

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Abstract: Introduction: Most cases of neck pain are produced by activities that involve repeated and prolonged movements of the neck muscles, ligaments and tendons, bones and joints. These can result in strain (excessive muscle strain or overuse), sprain (ligament damage), cervical muscle spasm or cervical joint inflammation. : The functional and socio-economic rest determined by cervical pain syndrome as well as the major complications that occur in the absence of a proper kinetic treatment led me to direct my attention and efforts to this category of patients. It is assumed that the kinetotherapeutic methods and means applied correctly and systematically will contribute to speeding up the recovery process of the patient with pain syndrome and to the socio-professional reintegration of the patient. The object of the research is the rehabilitation process of patients with cervical pain syndrome through the complex rehabilitation program. The goal is to develop a complex kinetic program, individualized and systematically carried out, to regain the patient's independence in daily activities. The development of a complex, differentiated kinetotherapeutic program, the individualization of the techniques and kinetic methods chosen creates premises in preventing the appearance of degenerative and trophic problems, accelerating the regeneration processes, ensuring an optimal restoration of the structure and functionality of the affected cervical spine, which will decrease the rate of disability, improve the ability work and socio-economic reintegration of the patient.

Keywords: pain, elongation, neuromuscular bands, kinetic program, lordosis.

Congress Abstract – L31

Improving the quality of life in patients with spasticity after botulinum toxin injection

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Abstract: Post-stroke spasticity frequently occurs in patients with stroke, and there is a need for more quality-of-life assessments for different therapies. We evaluated for the first time in Romania the quality of life among patients with post-stroke spasticity, comparing two therapies over a 6-month period: botulinum toxin type A (BOT) with conventional therapy (CON). We also assessed the reduction of spasticity and functionality secondary to the increase in the mobility in upper limbs. This study was based on a prospective, randomized design, including subjects with post-stroke spasticity (N = 34; 34-80 years of age): in the CON arm, patients received therapy against muscle spasticity and physiotherapy, and, in the BOT arm, patients received incobotulinumtoxin-A and additionally conventional treatment, if required. Among 34 treated subjects in the two arms, the quality of life was significantly higher after BOT therapy ($p < 0.001$), represented by improvement in movement ($p < 0.001$), usual activities ($p = 0.018$), and distress ($p < 0.001$). Improvements in muscle tone (Ashworth Scale) over 6 months of treatment period were greater in the BOT arm (100%) than in the CON arm (11.8%). These preliminary results suggested that incobotulinumtoxin-A increased quality of life by improving movement, daily activities, mental health, and muscle tone more effectively than conventional therapy and could form a basis for future comparator studies.

Congress Abstract – L32

Current overview and reappraisal on essays towards systematizing clinical assessment instruments used to evaluate neuro-functional deficits in multiple sclerosis including through the ICF(-DH) conceptual framework

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Abstract: Introduction. We herein continue our series of works dedicated to current reappraisals on clinical assessment instruments designated to evaluate functional deficits in the main neurologic/ neurosurgical conditions. The actual one refers to the most frequently used such instruments in multiple sclerosis. Like we have previously asserted the “... WHO (World Health Organization – o. n.)’s modern kind of endeavor matches with another contemporary advanced concept: of ‘Evidence-based Medicine’, an already renowned proceeding for correct and complete/ minute diagnosis and prognosis, and respectively, for consequent, specific therapeutic-rehabilitative, social, occupational – if applicable – decision-making, and consequent appropriate interventions. Material and method. As in our previous works of this kind, we review the related essays towards systematization through the WHO’s new paradigm to approach human functioning: International Classification of Functioning, Disability and Health (ICF-DH) – as it is progressing towards implementation – based on an updated preliminary literature review. Results. This approach encompasses:

- a related systematic literature review: 27 articles obtained, 20 articles remained after duplicates removing
- some synthetic considerations regarding the actual clinical-epidemiological status of multiple sclerosis
- brief emphasizes on basic characteristics of the WHO’s ICF(-DH)
- an overview on the clinical assessment instruments used in multiple sclerosis and their proposed framing within the ICF(-DH).

Conclusions. General remarks and perspectives in the domain are made, acknowledging the necessity to continuously keeping updated, making reappraisals and selecting to use in practice the most appropriate related evaluation tools – considering both: their international recognition and acceptance and respectively, the specific effective possibilities for their impelmentation.

Key words: multiple sclerosis, systematic literature review, International Classification of Functioning, Disability and Health (ICF-DH), assessment instruments/ measurement scales

Congress Abstract – L33

Controversies of the Statins Treatment: Neuroprotective vs. Adverse Effects upon the Neuro-Myo-Arthrokinetic Suprasystem – Narrative review

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Abstract: Cholesterol plays a vital role in bodily functions as a substrate for the biosynthesis of steroid hormones (testosterone, estrogen, cortisol, and vitamin D), bile acids, and the transport of antioxidant compounds (vitamin E, carotenoids, coenzyme Q10). The brain uses cholesterol to manufacture neurotransmitters responsible for regulating mood and facilitating the ability to remember things, learn new things and cope with stress.

Statins are the second most prescribed drug class in the world used in clinical practice.

Apart from their primary mechanism of action, which is lowering pathological cholesterol levels, many pleiotropic effects have been described so far as favorable (such as anti-inflammatory, anti-atherosclerotic, and beneficial neuroprotective effects) or muscle-related harmful side effects (myotoxicity & rhabdomyolysis).

The lipophilic statins – simvastatin and atorvastatin penetrate the brain-blood-barrier. Brain cholesterol deficiency is implicated in bipolar, major depression, and schizophrenia.

This narrative review focuses on the latest advances regarding the role of cholesterol deregulation in neuronal functions as a determining factor in neuronal degeneration.

The mechanisms by which statins affect neurotransmission, their central impacts on neurological and psychiatric diseases (such as Parkinson's disease, Alzheimer's disease, vascular dementia, traumatic brain injury, Huntington's disease, stroke, and depression), respectively, the peripheral muscular deleterious effects are succinctly presented.

Congress Abstract – L34

Therapeutic And Recovery Difficulties Caused By Multiple Neurological And Cardiovascular Comorbidities In A Patient With Algo-Dysfunctional Status After A Recent Episode Of Loss Of Consciousness

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Abstract: Introduction: Stroke is worldwide the leading cause of death and the third cause of disability. The most frequent strokes are of the ischemic type, and 25% of them are of the lacunar type. Lacunar infarcts are small in size, varying between 0.2-1.5 mm. As a rule, a lacunar infarct is caused by the occlusion of a small penetrating artery, a terminal branch of the main component arteries of the polygon of Willis. Due to these dimensions, lacunarism-type vascular accidents can be asymptomatic, but through cumulative effect can lead to disability and progressive cognitive deterioration. Material and methods: This paper presents the case of a 67-year-old patient, known to have left fronto-parieto-occipital subdural hematoma operated with a bone flap

in 2018 and newly discovered cardiovascular pathology, therapeutically neglected, who suffered in two months before admission to our ward, an episode of loss of consciousness of uncertain etiology (epileptic episode/ bilateral capsulo-thalamic lacunar stroke/ cerebral microangiopathy) followed by an accidental fall from the same level, resulting in fractures (right humeral neck, ribs) and multiple traumatic wounds (posterior chest, buttocks and right thigh, infected by crawling on the floor - patient alone at home), ischemic-necrotic lesions of hallux and toes II, III left foot. The patient was admitted to the Neuromuscular Recovery Clinic of SCUBA for algo-dysfunctional right shoulder status after comminuted fracture of the right humeral neck (inoperable), moderate locomotor and self-care dysfunction, care and stage recovery treatment. The patient was clinically and functionally evaluated according to the standardized protocols implemented in our clinic, through: evaluation scales (FIM, QoL, SCIM, Ashworth Penn, WISCI II, Rankin, GOS, FAC), paraclinical investigations and required multiple interdisciplinary consultations in the context neurological and cardiovascular comorbidities.

Congress Abstract – L35

Clinical-Evolutive And Recuperative Particularities In A Case Of Multiple Sclerosis That Is Difficult To Classify (With Very Slow Evolution)

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Abstract Introduction: Multiple sclerosis (MS) the most common disabling disease known to affect young adults. The incidence is increasing worldwide, together with the socioeconomic impact of the disease. The underlying cause of MS and its mechanisms behind this increase remain somewhat unknown, although interactions between genes and environment play an important role. The present paper will follow a patient diagnosed with progressive (slow) paraparesis and frust lack of ability/dexterity of the right hand and fingers; algoparesthetic and dysfunctional syndrome at lumbar level and lower limbs - under observation multiple sclerosis primary progressive form (/progressively recurrent - very slowly evolving: onset 2012-2013) and respectively myelopathy with C6 radiculopathy on a degenerative osteophytic-discal and deposturing background (retroisthesis C5- C6) and respectively vertebro-discogenic (under observation neurogenic claudication).Materials and methods: A 57-year-old patient was admitted to our clinic presenting a feeling of weakness in the lower limbs associated with walking disorders accentuated by exertion, fatigue slightly accentuated with tonic-dynamic movements of the right hand and fingers, slightly difficult urination with reduced urinary stream and increased duration and specialized recuperative treatment. The patient presents as personal pathological antecedents grade II medium risk group arterial hypertension, std II arterial hypertension angiopathy and dyslipidemia. He was clinically-functionally evaluated, according to the standardized protocols implemented in our clinic through the evaluation scales/grids, including the Expanded Disability Status Scale/EDSS - the method for quantifying disability in multiple sclerosis and for monitoring changes in the level of disability over time and paraclinically through laboratory analyses, brain, cervical, thoracic, lumbar spine MRI, electromyography, sensory evoked potentials. The particularity of the case is represented by the very slow evolutionary nature of the patient's neurological pathology, namely multiple sclerosis.Results: The patient received a complex neuromuscular recovery treatment, including kinetotherapy and physiotherapy, that covered the motor dysfunctions. The evolution was slightly favorable from the functional point of view, with a mild remission of the symptoms that were present upon admission.Conclusions: This case represents an exhaustive example of a multidisciplinary clinical and particular neuro-rehabilitative therapy approach with both clinical and scientific impact.

Congress Abstract – L36

Dupuytren's Disease – Outcomes Of Different Treatment Methods

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Abstract: Introduction: Dupuytren's disease is a musculoskeletal disorder consisting in fibrosis of the palmar aponeurosis. It can occur a flexion contracture of the metacarpophalangeal (MCP) and the proximal interphalangeal (PIP) joints, less commonly, the distal interphalangeal joint (DIP). The goal of this study is to investigate which is the best treatment in different stages of the disease. Material and methods: Searching the database of PubMed, Medscape and Scopus it were found 17 medical articles regarding with this subject which were published between 2018-2022. I've taken into consideration only the articles published in English language. Results: Treatment options of Dupuytren's disease (DD) include minimally invasive procedure such as percutaneous needle fasciotomy (PNF), collagenase clostridium histolytic (CCH) injection and open surgery technique (limited fasciectomy.) The parameters we took into account were the type of procedures (when and where we use it), contracture improvement, the recurrence rate and in some studies the costs of each method. Patients were follow-up for at least one year even to seven years. Conclusion: The choice of treatment method depends on the stage of flexion contracture (under 30 degrees or more), the joint type (MCP or PIP), primary or recurrent Dupuytren's disease, the patient's age and last but not least the cost effectiveness in the treatment of Dupuytren's contracture.

Keywords: Dupuytren's disease, percutaneous needle fasciotomy, collagenase injection, limited fasciectomy

Congress Abstract – L37

Difficulties and controversies in the multi-interdisciplinary therapeutic management of lumbar disc hernia in a breastfeeding mother -- case report

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Abstract:

Introduction. The case highlights the controversies encountered in the literature regarding the therapeutic management of algo-dysfunctional symptoms that occurred during lumbar disc herniation in breastfeeding female patients. The adverse reactions of various analgesic and anti-inflammatory products to the organoleptic properties of breast milk and the possible adverse reactions on the infant are underlined.

Case Report. A 28-year-old, breastfeeding mother, presented with severe dragging lower back pain episodes (in January and recurrence in March) radiating posterolaterally into her left lower extremity. The pain was triggered by repetitive bending movements over the edge of the bed to lift the baby. Imagery confirmed bilateral paramedian L5-S1 disc herniation with mild canal stenosis (Fig. 1).

Initially, she refused a completely correct association of medication because she didn't want to stop breastfeeding her 11-month-old baby.

The initial painful episode diminished from 9/10 intensity on the VAS to 6-5 / 10, but after two weeks she exhibited a mild distal left deficit (motor 4/5) - Peroneal Nerve paresis. repeated MRI examination was in

concordance with the neurological symptoms. Corroborating the clinical data and imagery, the neurosurgeon recommended conservative treatment.

Discussion. There is a difference between the American leaflets (www.e-lactation.com/en) and the Romanian leaflets on drugs that can affect the organoleptic qualities of breast milk (AIS, NSAIDs, analgesics, gastro protectants). Prophylactic measures are discussed.

Conclusions. Lactating mother accusing dorsal pains and disc hernia must be treated by a multidisciplinary team: psychiatrist, neurologist, neurosurgeon, pediatrician general practitioner. A careful risk-benefit analysis must be done.

Congress Abstract – L38

Our clinic's experience facing the complex, tailored & multi-professional approach of patients with multiple comorbidities/complications admitted from other health units - case series

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Abstract: In our rehabilitation clinic are hospitalized patients with neuraxial pathology of various etiologies: mainly traumatic or tumoral (transferred from TEHBA's neurosurgery clinics or ICU, or other neurosurgical departments in Bucharest and the country), but also patients with vascular pathology (ischemic or hemorrhagic) transferred from neurology. These patients are hospitalized during the subacute and chronic stages, with severe dysfunctional neurological syndromes (severe motor deficits such as hemiplegia, paraplegia, or tetraplegia), neuropsychic problems, and executive or cognitive issues.

The traumatic, tumoral, or vascular pathological events may arise on a pre-existing organic background (comorbidities) that can aggravate the evolution and compromise the rehabilitation prognosis and even the vital outcomes.

Patients from other hospital units are admitted to Neurorehabilitation with respect to a unique protocol (Annex 4) that was implemented and developed by our rehabilitation clinic of TEHBA.

Some patients are excluded (or temporarily postponed, until their clinical-biological status improves).

1. Severe septic conditions with aggressive, "multi-resistant" germs (MDR bacteria such as Klebsiella, Proteus, Pseudomonas, Cl Difficile).
2. Patients with a tracheal cannula and/or bronchopneumonia that occurred during the last month must breathe spontaneously, have oxygen saturation between 87-90% for 15 minutes, in the absence of medical oxygen, and have normalized pulmonary imagery (X-ray or CT) performed in the previous week.
3. An absolute immediate contraindication for admission is represented by possible general surgical or neurosurgical emergent indications.

Theoretically, multiple aggravated/decompensated (co-)morbid associations such as severe cardiovascular decompensation (heart failure class IV NYHA), acute myocardial infarction, severe renal failure (stage 3 or 4), and acute high deep thrombophlebitis (crural and/or iliac levels) do not have the necessary endurance and/or indications for physical therapy programs, speech therapy, etc.

4. Cerebral and/or medullary replacing space processes (primary or metastatic tumors, abscesses, active internal hydrocephalus) will be scheduled and reevaluated after solving the acute neurosurgical or neurological problems and CT or /and MRI imagery control.

5. Multiple metastases (somatic and/or neuraxial) are in principle exceeded for proper rehabilitation programs and benefit from palliative therapy, in specialized departments.

7. Persistent vegetative states lasting more than four months benefit from rehabilitative nursing and free qualified home care provided by accredited long-term nursing units.

8. Severe dysphagia needing nasogastric tube feeding over 3-4 weeks benefit from a prior fitting of a gastrostoma/PEG before transfer to our department.
9. Vascular and/or Alzheimer's dementia or advanced Parkinson's disease in stages 4 and 5 H&Y benefits from rehabilitative nursing and qualified home care or institutionalization under the conditions of the regulations in force.
10. Degenerative, chronic/irrecoverable diseases (for example elderly people with sequelae after infantile encephalopathies or severe dystonia occurring perinatally or in childhood) benefit from qualified home care rehabilitative nursing or institutionalization.

The paper illustrates some case reports admitted before the implementation of the aforementioned unique protocol or admitted from ICU.

The main complications associated with the severe neurological disabling syndromes are illustrated: decubitus pressure sores (bedsores), urinary infections with MDR germs, Herxheimer reaction, patients with tracheostomy, spasticity with severe deoposturing/ ankylosis, ectopic ossifications, epilepsy after stroke, neuropsychiatric disorders (frontal lobe syndrome), psychomotor agitation.

Conclusion The admission of patients with multiple comorbidities/complications from other health facilities implies an appropriate selection so that they benefit from an efficient multi-professional approach and rehabilitative programs, avoid intrahospital infections, and inappropriate consumption of material resources and human effort.

Congress Abstract – L39

Short-Term Rehabilitation Outcomes In A Patient With Osteogenesis Imperfecta Complicated With Cerebral Hemorrhage - A Case Report

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Abstract: Introduction: Osteogenesis imperfecta (OI) represents a spectrum of autosomal dominant genetic diseases, related to collagen synthesis deficits that lead to multiple fractures but can have many other clinical features including silent to severe course, different age of onset, blue sclerae, loss of hearing, neurological deficits and tooth development problems. There have been reported several series of cases describing vascular fragility and cerebral hemorrhage in patients with OI. Materials and methods: In this report, we present the case of a 54-year-old woman with multiple fractures, presented with right hemiparesis suggestive for stroke. Clinical and paraclinical data was collected while the patient underwent rehabilitation Results: The patient with acute onset of right hemiplegia and aphasia was delivered(admitted) to the emergency department. Physical assessment revealed blue sclerae and multiple bone deformities in the elbow and tibial region due to pathological consolidation after fractures. Left capsule-thalamic intracerebral hematoma with the intraventricular eruption was visualized on CT scan examination. The diagnosis of OI was confirmed using a genetic test that showed an abnormal phenotype in the COL1A1 gene. After discharge from the rehabilitation unit, a good outcome was obtained with NIHSS score regression from 15 to 9 points, modified Rankin score from 5th to 3rd level, and functional categories of ambulation progression from 0 to 2nd category. Conclusion: While cerebral hemorrhage is not common in patients with OI, this complication may be a result of vascular fragility. Adequate rehabilitation care can strengthen rehabilitation outcomes for patients with OI.

Congress Abstract – L40

Kinetic Program In The Recovery Of The Tibia Fracture. Case Presentation

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Abstract. Introduction. The objective of this paper is to present the case of a patient who suffered a tibia fracture and the recovery program followed. Also, the recovery techniques used are presented, as well as the results obtained at the end of the recovery program. Materials and methods. The paper presents a patient diagnosed with a fractured tibia in the lower third of the right leg. The patient was evaluated functionally postoperatively, during and at the end of the recovery program. Results. During the recovery program, a progress and a good evolution of the patient could be observed. Thus, the patient followed the kinetic program initially established by the physiotherapist and also it was possible to observe the increase of the mobility of the joints, of the stability but also of the muscular strength. Conclusions. The designed physiotherapy program must be preceded by an appropriate evaluation and must include techniques adapted to the patient's abilities. An essential condition is a good collaboration between patient-physiotherapist-orthopedic surgeon, so that complications and recurrences can be avoided.

Congress Abstract – L41

Recovery Of The Patient With Spastic Paraparesis. Case Presentation

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Abstract. Introduction. : The aim of this paper is to present the case of a patient diagnosed with spastic paraparesis as well as the recovery program followed. Materials and method: The paper analyzed a patient diagnosed with spastic paraparesis at the age of 2 years, during which she underwent several surgeries (tenotomies). Various external fixators were also applied to the patient. The patient was evaluated functionally postoperatively, during and at the end of the recovery program. Results: During the recovery program, a progress and a good evolution of the patient could be observed. Thus, the patient followed the kinetic program initially established by the physiotherapist and also it was possible to observe the increase of the mobility of the joints but also of the muscular strength. Conclusions: The designed physiotherapy program must be preceded by an appropriate evaluation and must include techniques adapted to the patient's abilities. An essential condition is a good collaboration between patient-physiotherapist-orthopedic surgeon, so that complications and recurrences can be avoided.

Congress Abstract – L42

Sauna In Medical Rehabilitation

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Abstract. Introduction: The use of sauna is an old practice among many cultures. The principle of sauna is the exposure to high temperature (45°C to 100°C) alternating with cooling sessions. Objective: The objective of this study was to assess the effects of sauna and to describe them. Materials and Methods: Using PubMed, we have selected a number of studies, which have been conducted in the past decade. The key words we used for searching were: "sauna", "sauna bathing", "effects". Results: The main outcome of the sauna is: rising the temperature of the body which induces a thermoregulatory response. Repetitive sauna bathing has a hormesis effect. Exercising has a similar effect on the human body. Sauna has an antioxidant effect, prevents proteins from damage and aggregation, have an anti-inflammatory effect. Studies have shown that regular sauna bathing lowers the cardiovascular disease-related mortality, improves the endothelial function, lowers the hypertension. Other studies have shown that the sauna use may protect against developing Alzheimer's disease. Sauna use induces and increase in beta-endorphins which helps suppressing the release of pain-promoting substances. It also increases the immune function and lowers the rate of respiratory infections. Sauna bathing improves the physical fitness and increases endurance. Conclusion: In conclusion, beside the recreational and relaxation purpose of sauna, it has been shown that it has many benefits on the health. Sauna might be considered an alternative for people who cannot be involved in physical activities.

Congress Abstract – L43

Tui Na massage - application perspectives in the rehabilitation of people with rheumatoid arthritis.

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Abstract. Traditional Chinese Medicine has been marked by the WHO as a field of applied medicine. [1,2]Tui Na massage, being part of Traditional Chinese Medicine, completes the functional treatment and prevents the installation of joint deformities in people with rheumatoid arthritis.[3,4,5]

Objectives. Estimating the effectiveness of Tui Na massage in the rehabilitation of people with rheumatoid arthritis. **Methods.** The study was performed on patients with rheumatoid arthritis, randomly divided into 24 people in Lot1 and Lot 2. Patients in Lot 1 received conventional rehabilitation treatment, and for patients in Lot 2 the treatment was combined with Tui Na massage techniques. Prehensile forceps were assessed by applying the Sidenco (2005) and Frost (2002) tests, pain was assessed on the VAS scale from 0 to 100, daily activities were assessed on the HAQ (Health Assessment Questionnaire) scale.

Results. After 30 days of functional treatment, pain, palmar grip and bidigital and pluridigital forceps and functional abilities were assessed. Thus in Lot 1 the bidigital forceps decreased in points from 6.87 ± 0.31 to 6.07 ± 0.29 in Lot1 and yes 6.97 ± 0.29 to 5.34 ± 0.31 in Lot 2 of study ($p < 0.05$), pluridigital forceps had a more marked decline in Lot 2 - from 3.56 ± 0.17 to 2.04 ± 0.17 ($p < 0.05$) compared to Lot1 - from 3.61 ± 0.21 to 2.97 ± 0.12 ($p < 0.05$), and the score for palmar grip decreased from 5.61 ± 0.28 to 4.81 ± 0.26 ($p < 0.05$) in Lot 1 and from 5.65 ± 0.24 to 2.38 ± 0.23 ($p < 0.05$) in Study Lot 2. Joint pain decreased by 23.88% in Lot 1 and 42.64% in Lot 2. Daily skills increased according to HAQ by 1.06 conventional points in Lot1 and by 1.56 points in Lot 2.

Conclusion. Tui Na massage is a well-integrated method in the treatment of functional rehabilitation and can be combined with both conventional and medicinal treatment for the complex rehabilitation of people with rheumatoid arthritis.

Key words: Tui Na massage, functional rehabilitation, rehabilitation in rheumatoid arthritis

Congress Abstract – L44

Kinetic Techniques In The Rehabilitation Of People With Type 2 Diabetes

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Abstract. Introduction: Type 2 diabetes is a current problem for the global population, with a detrimental impact on functional, social, economic status and especially quality of life.[1,2] Objectives: of this study are to demonstrate the clinical-functional efficacy of complex medical rehabilitation programs in patients with type 2 diabetes mellitus. Methods. The study included 94 patients with type 2 diabetes, rehabilitated by conventional methods (electrotherapy, thermotherapy, hydrotherapy) combined with individualized techniques of vascular kinetotherapy.[3] Initially and after ten days of treatment, the pain in the lower limbs was assessed according to the visual analog scale (VAS), the claudication index using the "measured gait" test proposed by T.Sbenghe (2004) and the quality of life through the quantified quality life assessment scale by J.Flanagan, 2003 (maximum score 98 conventional points, minimum 16 points). Quality of life was assessed initially and after 30 days of physiokinetherapeutic treatment. During the study, all patients received hypoglycemic drug treatment. Results. After ten days of physifunctional treatment, there were noticed a decrease in pain from 72.31 ± 0.75 to 54.1 ± 0.63 ($p < 0.05$), the claudication index improved from 33.4 ± 0.64 to $51, 68 \pm 0.52$ ($p < 0.05$) and quality of life increased from 52.8 ± 0.72 to 84.3 ± 0.14 points ($p < 0.05$). Conclusion. Treatment by active kinetic methods improves the functional status and quality of life in patients with type 2 diabetes.

Key words: Type 2 diabetes, physiological rehabilitation, quality of life

Congress Abstract – L45

Evaluation of the effectiveness of the rehabilitation treatment of patients with post-COVID-19 syndrome with musculoskeletal sequelae

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Abstract. The majority of people who develop COVID-19 recover completely, however according to OMS approximately 10 to 20 % [WHO December 2021] of patients undergo a variety of medium to long term symptoms. Musculoskeletal pain in the post COVID-19 syndrome, is one of the conditions with which patients are reaching for medical rehabilitation. We aimed to evaluate the efficiency of the rehabilitation treatment with physical and performance factors in the hospital. **Materials and methods:** Within the Medical Rehabilitation Center of IMSP St. Archangel Mihail in the period 2020-2022, 3228 patients were hospitalized for recovery after COVID-19. 45% of them revealed musculoskeletal sequelae. As a result of the examination of 1452 medical records, we evaluated the VSH laboratory index, patient's general condition, VAS pain scale, before and after finishing the rehabilitation programs. Rehabilitation treatment: low-frequency electrotherapy, laser-magnetotherapy, laser therapy ultrasound, physical therapy, manual massage, body acupuncture. **Results:** After 10 days of treatment, as a result of the clinical-functional evaluation of the study group, the muscle and joint pain from 6 at admission reduced to 2 at discharge, the VSH which at admission in the environment was 19, at discharge it decreased to 10-12, the general condition improved considerably. **Conclusion:** The rehabilitation treatment of musculoskeletal conditions in the post-COVID-19 syndrome ensures the restoration of functionality and return of people to normal life activities.

Key words: Type 2 diabetes, physiological rehabilitation, quality of life

Congress Abstract – L46

Speleotherapy – medical relevance

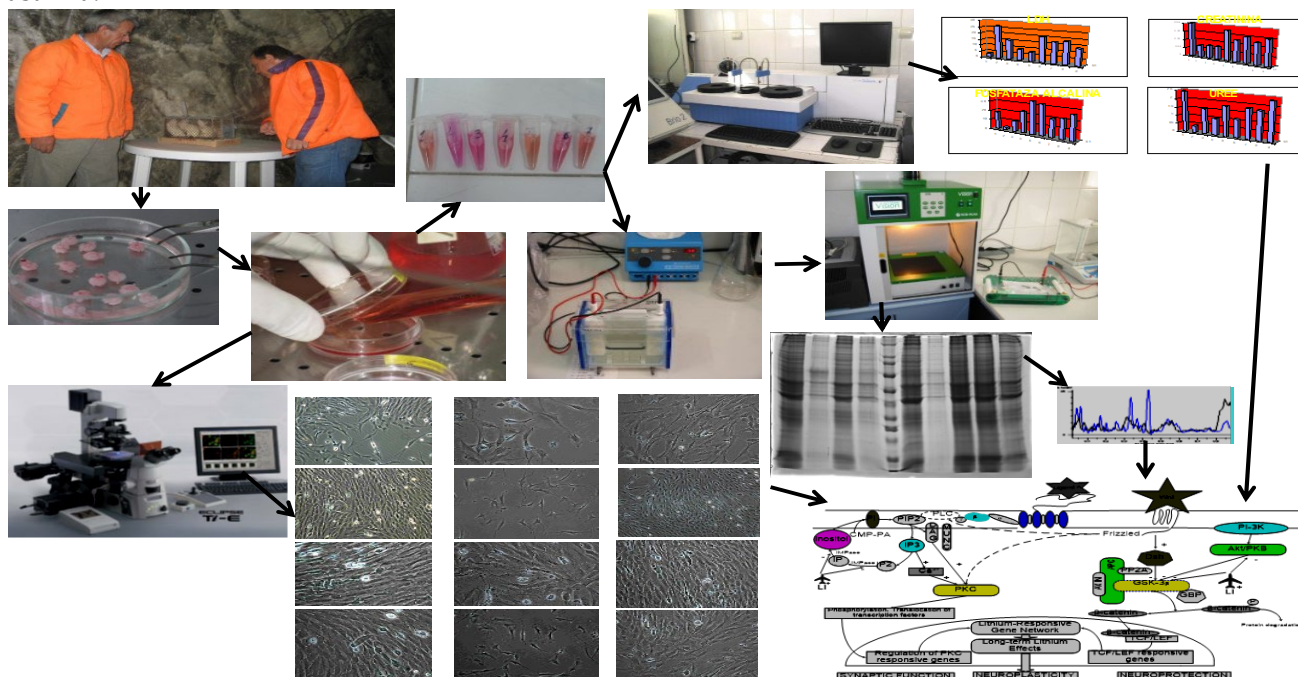
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Abstract: Speleotherapy is used for prophylaxis, therapy and recovery mainly of patients with bronchial asthma, chronic bronchitis, but also sinusitis, allergic dermatitis, psoriasis. The curative properties of therapeutic salt-mines are evaluated by thermo-hidro-baric indicators, (pressure, humidity, air flow), physical indicators for air quality (aeroionization, aerosol particles concentration, radioactivity) chemical indicators (CO₂, H₂S, N₂, O₂, SO₂ concentrations, Na, Cl, K, Ca etc. concentrations, microbiology: greenhouse, fungus. The effectiveness of Speleotherapy for convalescents with burns is certain. Experimentally, Speleotherapy has also proven useful in the therapy of wounds, including infected and inflamed ones. Salt mines are defined as excavations carried out for the purpose of exploiting salt masses, having various forms of galleries, alveoli and the like, delimited by walls and ceilings, connected to each other by shafts for vertical circulation or through ramp galleries for horizontal circulation to the actual mine. Speleotherapy is recognized as a method of complementary therapy for patients with bronchial asthma and other respiratory conditions, in the underground environment of some salt pans and caves possessing natural therapeutic factors.

The main parameters that contribute to the creation of a sanogenic environment in salt pans are:

- constant microclimate - relatively comfortable temperature and humidity, lack of air currents, low level of lung and skin stress, slight hyperbarism;
- moderate, slightly positive air ionization;
- absent allergens and polluting agents;
- microbiologically pure air;
- increased amounts of sodium, potassium, calcium and magnesium aerosols.

The main therapeutic indication of therapeutic salts is represented by respiratory diseases, especially bronchial asthma.



Keywords: speleotherapy; fibroblast cell cultures; Wistar rats;

Congress Abstract – L47

Balneary Parks- Future Research Directions

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Abstract. Introduction: Primary forests are the true treasures of nature. For centuries they have provided benefits to the population and are vital to biodiversity, climate, human and planetary health. However, a report by the Joint European Research Center shows that currently only 3% of Europe's total forested area is primary / secular forests. From time immemorial people have enjoyed the forest, regardless of age, due to a quiet atmosphere, a mild climate, beautiful landscapes, fresh air, pleasant aromas of flowers and plants. Many studies have been conducted in Japan since 2004 to investigate the effects of forest environments on human health. In Germany, for the first time in Europe, health forests are being developed and cultivated on a scientific basis. Climato-therapy is indicated in the spa resorts in Romania, applied as heliotherapy, aero therapy, field cure, with the need to increase the surface of the spa parks and to know all the properties of the trees. We invite all researchers to conduct studies on the therapeutic benefits associated with spa parks and encourage health care providers / patients to consider practicing it to reduce stress, potential disconnection, but also the therapeutic effects of respiratory, cardiac, immunity, in the balneary resorts, but also in the elaboration of the necessary policies.

Congress Abstract – L48

Administration and Management in Private Rehabilitation Medical Units

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Abstract: In order to lead and manage a private rehabilitation medical unit, one must put him/herself in both the shoes of the patient and the employee. The approach must be gentle with everybody in order to complete the goal which is to diminish the pain and suffering of the patient, while in the same time conducting a business. From this perspective, a manager has to find a way to maintain the medical unit afloat and also increase the revenue in order to invest in new technology equipment and also expanding to different specialties in order to create a complete and complex service for the patient. Rehabilitation medicine starts from the basis of physical therapy, kinesiotherapy and massage, but in order to treat much more complex diseases with multiple types of approach the medical staff has to be in continuous formation in order to keep up with the multitude of pathologies of one single patient. These types of pathologies may vary from rheumatological, orthopedical, respiratory, cardio-vascular, post-surgery, post-burned disease which address the Rehabilitation medica unit. A manager has to create opportunities for the medical employees to train in all of these fields in order to conduct a successful busyness. Another aspect which has to be addressed is the publicity od the private medical unit. Although our Medical Center collaborates with the National Health Insurance House, our medical unit also provides private services which are not covered by the state, thus the patient is paying from his/her own money. In order to conduct a good medical center and a business in the same time, a manager has to work on making the private unit known to the large population, showing the services it has to offer, in order to lure more patients and thus, increasing the profits. Finally, it is very important as a private business to maintain a continuous and tight relationship with the Health Insurance Houses, in order to stay on top and learn early about any law modification, price changing, new services we can offer and any other important aspect, so that our patient may benefit from it.

Keywords: Rehabilitation Private Medical Unit, Administration, Management, Medical Center

Congress Abstract – L49

Natural therapeutic gases and Stroke

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Abstract: One of the leading causes of death in the world is stroke, and it is one of the main causes of disability among adults. The time-limited therapeutic window can also lead to various complications, such as brain edema and hemorrhagic transformation. Current treatment for stroke is very limited. However, there are various promising new therapies that are being studied in the field of stroke. Some of these include stem cells, medical gas, and blood-brain barrier protection. Ischemic stroke is caused by various factors such as blood flow disturbance, in-situ thrombosis, and branch occlusive disease. On the other hand, hemorrhagic stroke is caused by a cerebral vascular rupture. The most common pathological changes of this type are subarachnoid hemorrhage and intracerebral hemorrhage. In addition to these, other factors such as free radical release and inflammation can also cause damage to the brain following a stroke. Inflammation is a key factor that contributes to the development of brain damage following a stroke. The destruction of the blood-brain barrier (BBB) is a major factor that can lead to the development of brain damage following a stroke. One of the most important factors that can contribute to the development of brain damage following a stroke is the production of free radicals. Hydrogen sulfide is also found in various tissues and organs, such as the liver, heart, and blood. It has been known that low concentrations of this chemical can trigger neuroprotective effects. On the other hand, high concentrations of this chemical can cause neurotoxicity. Low concentrations of hydrogen sulfide can trigger neuroprotective effects. Despite the various advantages of hydrogen sulfide, there are still many issues that need to be resolved before it can be considered as a safe and effective treatment for stroke. Some of these include the lack of clinical evidence, the use of drugs combined with hydrogen sulfide, and the complications associated with the treatment. Research performed on the natural mofette found in Covasna spa resort, Romania, showed some of its mechanisms of action, i.e. the effect of carbon dioxide inhaled by patients during mofette therapy (carbon dioxide concentration in the air 1.5-2 volumes %, demonstrated by capnography); following inhalation of carbon dioxide, an increase in cerebral blood flow, up to 75%, was found. Medical oxygen is considered a drug with beneficial effects at a safe dose and side effects at higher doses. Oxygen therapy is indicated in patients with traumatic brain injury. Effects of hyperbaric Oxygen on chronic cerebral stroke indicate changes consistent with the clinical improvement in all chronic cerebral stroke patients, suggesting a possible neuronal plasticity and HBOT-related neoangiogenesis. Nitric oxide (NO) is considered an essential signal molecule involved in physiological and pathological processes. Nitric oxide is a neurotransmitter in the central nervous system. NO regulates cerebral blood flow, neurogenesis, and synaptic plasticity. H₂ is now considered a signaling gas molecule with physiological functions similar to nitric oxide (NO), carbon monoxide (CO) and H₂S. Indeed, H₂ does not have cytotoxicity even at a high concentration, ensuring the safety privilege compared to other gases. Interestingly, H₂ appears to be an effective ROS scavenging drug. Recent studies predominantly use in vivo or in vitro models for ischemic pathologies to investigate the impact of argon treatment. Promising data have been published on pathologies such as cerebral ischemia, traumatic brain injury and hypoxic-ischemic encephalopathy. Therapeutic gases are not fully understood and used adequately for sanogenic or medical purposes. More research is needed to fully understand the mechanisms and importance of therapeutic gases. The link between balneotherapy and medical rehabilitation regarding the usage of therapeutical gases emphasizes the unity for this medical speciality. Although medical gases are currently available, more studies are needed to establish their safety and effectiveness.

Keywords: stroke; natural therapeutic gases, hydrogen sulfide, nitric oxide, mofette

Congress Abstract – L50

Improving doping prevention and control programs for sports practitioners

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Abstract: Doping, the use of banned performance-enhancing substances or methods with the purpose of improving athletes performance, has a long history, going back to the ancient sports competition. Even if, in the modern era, sports competition are strictly regulated against the usage of doping substances or methods, there are doping cases among various sports like cycling, weightlifting, athletics, cross-country skiing. Therefore the usage of doping substances in sport has become a major ethic and health problem. An interesting approach is the usage of models based on mathematics and artificial intelligence (AI) algorithms for construction of predictors that can be a valuable tool for management of antidoping policies in order to reduce this phenomenon; **Methods:** Two approaches are proposed in this paper in order to model the doping in sport: a system of ordinary differential equations (ODEs) that uses Generalized Logistic Function (GLF) and a predictor based on Deep Learning Neural Networks (DLNN) that belong to a much larger class of methods in AI; **Results:** The models are tested with real data with good results in terms of fitting curve that describes the number of doped athletes in time; **Conclusions:** The results and the proposed algorithm offer a technique to predict the next number of doped using current results and a possibility to evaluate the effectiveness of measures for doping prevention.

Keywords: doping in sport; anti-doping policy; mathematical model; ODEs; Generalized Logistic Function; Deep Learning Neural Networks

Congress Abstract – L52

Evaluation Of The Clinical-Functional Status In Medical Rehabilitation Of Persons With COVID-19

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Abstract. Introduction: . After COVID -19 infection, most people have a number of symptoms and functional sequelae. [1,2] Physical deconditioning and immobilization greatly affect a person's functional condition. [3] Reduction of post-COVID-19 sequelae and functional recovery is the key vector for treatment managed by the multidisciplinary rehabilitation team. [4] Objectives. Estimation of the clinical-functional status after COVID-19 and analysis of the level of functionality in the medical rehabilitation process. Material and methods. The descriptive study included 124 patients with a duration from the time of infection from 1 month to 18 months, who benefited from complex physiological-functional rehabilitation treatment. At admission and after treatment were assessed: fatigue (on a scale of 0-10 points), dyspnea after the modified Borg category ratio 10 (CR10) scale; musculoskeletal pain after VAS scale 0-10 points (Visual Analogue Scale). Results. After 10-14 days of physiological rehabilitation treatment in the study group, there was a decrease in cases of severe dyspnea (1% at discharge compared to 5, 6% at admission) and an increase in people with mild dyspnea (58, 2% at discharge versus 4,8% at admission). At the same time, after rehabilitation, 4% of people were severely fatigued compared to 41,1% at hospitalization. Severe musculoskeletal pain after rehabilitation treatment persisted in 2% of patients compared to 19,10% at hospitalization, however, moderate musculoskeletal pain

remained dominant in 21,9% of cases after treatment, being 38,7% of cases at hospitalization. Conclusion. Complex medical rehabilitation programs have improved the clinical and functional status of people with COVID-19 infection.

Key words: post rehabilitation - COVID -19, post sequelae - COVID -19, physiological treatment

Congress Abstract – L53

Home-Based Rehabilitation Program For A Patient With Polytrauma – A Case Report

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Abstract. Introduction Polytrauma is a serious life-threatening injury that leads to death, without an active and intensive approach to diagnosis, can result in long-term disability. The assessment, management, and prognosis of polytraumas differ significantly from isolated injuries. Rehabilitation is essential for patients with polytrauma and can help a person reintegrate into social life. Materials and methods: We present the case of a 32-year –old woman with polytrauma, after a car accident. A post-acute home-based approach rehabilitation program was developed. Results: The patient has transported to the Institute of Emergency Medicine, after being hit by a car, unconscious, and diagnosed: Polytrauma - craniocerebral trauma; Severe concussion; Severe subarachnoid hemorrhage; Multiple fractures of the left temporal and frontal bone with passage into the middle temporal fossa; Fracture of the cranial base in the middle cranial fossa on the left; Traumatic cerebral edema; Contusion wound in the frontal region; Fracture of the left pubic branch and the sacrum; Cranial hypertension; Zygomatic bone fracture; Fracture of the orbit on the left. she received inpatient treatment for 14 days: 7 in intensive care and 7 in the neurosurgery department. At home, a multifunctional bed was prepared and rehabilitation therapy was initiated by the following methods: active and passive physiotherapy, electrotherapy, massage, occupational therapy, TENS, electromagnetic field, and paraffin applications. After the home-based program, the patient was referred to community rehabilitation services showing good outcomes with minimal functional deficits at 6 months. Conclusion: A home-based approach program with early initiation can enhance rehabilitation for persons with polytrauma.

Congress Abstract – L54

Monitoring And Treatment Of Arthrosis Patients At The Family Doctor's Office, According To The Guidelines. Personal Study

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Abstract. Introduction: Arthrosis, also called degenerative rheumatism or osteoarthritis, is the most common atrophy present in patients over 50 years, with a severe incidence and increasing evolution, representing a public health problem in the future. Motivation of the work: The family doctor has the advantage of knowing the patients from birth, at each stage of life, with their medical history, lifestyle, environment in which they live, work, hereditary history, modified status of physical isolation from the pandemic and possibly of going through the disease. Objectives: Identification of modifiable risk factors; Use of evidence-based medicine

guidelines; Initiatives to prevent arthrosis or complications; Assertive patient collaboration; Medical care with improved access for the acute / chronic patient; Multidisciplinary collaboration. Personal study: The paper presents the most important guidelines and protocols necessary for the family doctor to monitor the patient with arthrosis. The personal study includes 42 patients with osteoarthritis, diagnosed, studied using the technique of the questionnaire with 21 items, for a period of 6 months, at my family medicine office. Results and conclusions: The role of the family doctor is to detect the modifiable risk factors identified in the personal study, namely overweight, repeated trauma, inadequate lifestyle, with prolonged overload of the joint. Knowing the unchangeable risk factors, symptoms and associated diseases of the patient, the specialist establishes a prevention and treatment plan, according to the guidelines of good medical practice. The multidisciplinary team collaborates for the positive diagnosis and the therapeutic, non-pharmacological, pharmacological and possibly surgical conduct.

Key words: arthrosis, personal study, risk factors, monitoring, individualized treatment.

Congress Abstract – L55

The Mystery Of A Thermal Bath In Sălaj County

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Abstract. Introduction: In Sălaj County there is a small scale spa resort, one of the most enigmatic and of a unique beauty which is surrounded by wild nature. It is well known as a historical and cultural landmark called “Băile de la Iaz” located in a small village called Iaz, belonging to Plopis commune. Materials and method: The scientific importance of the Natural Pond Swamp Reservation resides from its legendary and current data with all aspects of flora and vegetation in addition to the quality of the water in the area. Results and discussions: the swamp located in Iaz has become a protected area since 2000, it is situated on Barcăului Valley and it is spread over a considerable surface of land (10 hectares) with paleontological and panoramic notes. It has been created by landslides, water accumulation and later on by gradual clogging. This reservation is famous not only for the mythology preserved by the locals, but also due to studies carried out by scientific research which identified some rare species of plants and animals, bio-physical and chemical features of the soil, its climate, its peat mud and swamp water. Starting from 1970s, important studies carried out in this protected area stated their results and they have been published in French prestigious journals of biology but, at the same time, we have some previous data from a paleo-botanical report printed in 1956. The inhabitants appreciated the properties of the ferruginous water of the swamp for its curative effects in rheumatic diseases, degenerative locomotory disorders and peripheral nervous system. Before 1989, the baths functioned as heated water in wooden tubs, later on being abandoned. Still, the locals would like to have their “spa” rehabilitated, project that has failed so far. Currently, the small so-called “spa” bears the signs of life through the ruins of the storey building and tiny accommodation venues surrounded by beech forest, birch and mountain meadows, along with the mysterious swamp with its blackish and thermal water with therapeutic virtues. Conclusions: The marsh located in Iaz, with all the balneal-climatic factors and the protected habitat might be considered a genuine natural and cultural patrimony.

Key words: ferruginous water, curative effects, degenerative, rheumatic disorders.

Congress Abstract – L56

Evaluation of changes in melanin levels in common nevi induced by mud therapy using hyperspectral imaging

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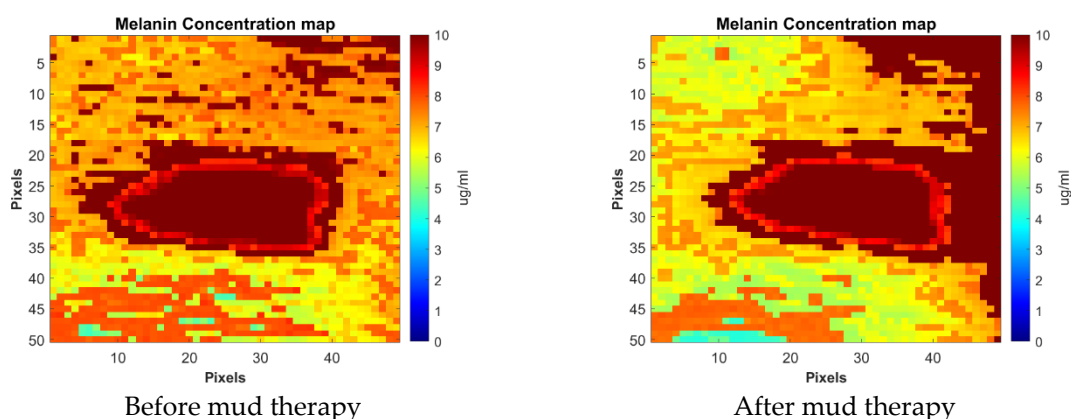
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Abstract: Common nevus is a collection of nevomelanocytes grouped into nests located in the epidermis (junctional nevus), dermis (dermal nevus), or both (compound nevus). The high concentration of the body's pigmenting agent, melanin, is responsible for their dark color. Melanin has two principal functions: it helps to protect the body from ultraviolet light (UV radiation) from the sun and gives skin and hair its natural color being also the main "target" of the tanning process. Nevi can occur anywhere on the body. They can be present at birth (congenital), but it is possible for them to develop throughout one's lifetime (acquired). People can be born with moles, or develop new ones of any size and color throughout their lifetime, at any age. The aim of this paper was to investigate the effect of mud therapy on the melanin content in common nevus. No study has been published to date showing whether the application of mud therapy has any influence on common nevus. **Materials and Methods.** Ten volunteers (8 women and 2 men), aged between 35 and 62 years with common nevi located on the upper limbs were included in this study. Each volunteer received mud therapy on the nevus area for 15 minutes, in a single session. Changes in the nevus melanin content induced by the mud therapy were determined using hyperspectral imaging. Hyperspectral images of each nevus were acquired with a pushbroom hyperspectral imaging system before and after mud therapy. Image analysis was performed using a dedicate algorithm that exploits specific spectral bands to generate the distribution maps of melanin content across the investigated nevus area. **Results.** The results revealed that the mud therapy induces an increase in the mean melanin content in nevus. Due to the experimental protocol, this intensified pigmentation is more probably the effect of melanin maturation and ascension from the deep layer of the epidermis. **Conclusions.** These preliminary results demonstrated that mud therapy causes an increase in nevus pigmentation, independent of age and gender and future studies are needed to elucidate the mechanism.



Keywords: common nevus; melanin; mud therapy; hyperspectral imaging

Congress Abstract – L62

The Variation Of The Main Plasma Electrolytes During The Peloid Cure

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Abstract: Introduction The ion exchange capacity of mud is known. In the studied literature on the physico-chemical qualities of natural therapeutic factors we did not find information on the ion exchange capacity of mineral waters. Objectives - to investigate the variation of the Ca / Mg ratio during peloidotherapy and its correlation with the individual variations of Ca + 2 and Mg + 2 ions. Materials and Methods - twenty-five patients underwent complex treatment in the Techirghiol Balnear & Rehabilitation Sanatorium from which twelve patients received indication for cold mud ointment and thirteen patients for thermo-neutral application (mud bath and saline bath). Results: the values obtained have a normal distribution, and the dispersions in both sublots are homogeneous. Variations in the Ca / Mg ratio correlates with individual variations in calcium and magnesium ions. The increase in the Ca / Mg ratio in the first 24 hours is determined by the decrease in the plasma value of the magnesium ion. Conclusion. The result obtained for the subplot with inaugural saline application could be an indirect indication of this type of action of mineral waters. concentrated sodium chloride.

Congress Abstract – L63

Study Of Plasmatic Level Of Cortisol And Thyreostimulating Hormone During The Peloid Cure

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Abstract: Introduction: Placing the person in a different climate and habitat condition is a stress factor when arriving in a balnear resort. Added to this is the lack of knowledge of the therapeutic factors, in what consists the treatment applied: rhythm, doses, number of procedures, physical, chemical and thermal stressors, respectively the balneal therapy itself, increase stress. The thyroid and adrenals glands are involved in thermoregulation and stress balance. Cortisol is the main hormone involved in the adaptive response to stress, and TSH modulates the secretion of thyroid hormones and thereby supports the metabolic effort of adaptation of thermoregulation. Objectives. In this context, we investigated the plasma level of cortisol and thyreostimulant hormone in the case of contrasting peloid cure compared to thermo-neutral peloidotherapy. Materials and Methods: The study group is formed of 25 patients who underwent complex treatment in the Techirghiol Balnear & Rehabilitation Sanatorium from which: twelve patients received indication cold mud ointment and thirteen patients for thermo-neutral application (peloid bath and saline bath). Results: Analyzing the level of cortisolemia depending on the type of peloid therapy, we can see the major differences between them: the cold application produces an intense stimulation; the thermo-neutral application is gentle. Conclusions. The analysis of the obtained data, for the cold mud application emphasize the contraindication of contrasting balneal treatment, in patients with thyroid function at the limit of compensation, as the risk of compensation is major, due to the statistically significant increase of the plasma level of TSH.

Congress Abstract – L64

New Approaches To A Balneal Unit's Management

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Abstract: Introduction: The Techirghiol Balneal and Rehabilitation Sanatorium benefits from the existence of one of the most modern balneal-physical-kinetic treatment bases in Romania and also manages an exceptional natural heritage – Techirghiol Lake, which has been listed alongside internationally important sites at the RAMSAR Convention under UNESCO patronage. This article provides new approaches to a balneal unit's management, considering the evolution of The Techirghiol Balneal and Rehabilitation Sanatorium with adults departments, but also the only balneal recovery medical facility in Romania for children with chronic diseases, severe motor and cognitive disabilities that benefit from natural environmental factors, and the management techniques used on his way to performance, to determine the major characteristics of a health organization and developing a valid model for medical care services at standards of excellence.

Congress Abstract – L66

Ultrasonography in medical rehabilitation - Report

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Abstract: Musculoskeletal ultrasonography is a modern technique very useful to integrate clinical symptoms with imagery and offer us a new perspective to approach the diagnostic. This new method confer a comfort for patient because is non-invasive, also is a dynamic method, the patient could perform a movement during the examination for more information. High-performance software can provide important data related to the vascularization of the examined areas using Doppler examination. All this information improves the ability to elaborate an accurate diagnostic. This technique offers the possibility to perform different type of therapy like ultrasonographic guided aspiration, viscosupplementation with hyaluronic acid, injection with corticoids, etc. Is very easy to monitor in time the patient, all images could be stored and compared. Finely, we can notice that this method is very useful method for diagnostic and therapy, also for comfort of patients, is a noninvasive approach and also a cheap method which not required sophisticated equipment.

Congress Abstract – L68

Integrated Approach: Pharmacological, Standards Of Care And Kinetotherapeutic Interventions, Including Advanced Assistance In Patients With Spinal Muscular Atrophy Type I

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Abstract. Introduction. Spinal muscular atrophy (SMA) is a nervous system degenerative disorder with autosomal recessive genetic transmission, affecting motor neurons in the anterior medullary horn, often those in the brainstem and leading to their death with loss of muscle mass and motor deficiency. SMA type I is the most severe form of the disease. There are currently three therapies approved by the Food and Drug Administration and the European Medicine Agency: Onasemnogene Apeparvoce, Nusinersen and Risdiplam. Besides these treatments, it is critical to follow correct and comprehensive standards of care and kinetotherapeutic interventions, including advanced assistance. Objectives. Wishing treatment efficiency for SMA patients type I, aware of the need to apply the standards of care in this disease, we have designed this paper in order to share the expertise of NCHCN and to guide all our colleagues who care for this pathology. Material and methods. The paper aims to reproduce images with patients, methods of diagnosis and treatment used in NCHCN, to best exemplify how we apply the standards of care in SMA type I patients. Results. We have 44 SMA type I patients treated in NCHCN. This allowed us to observe and assert that there are significant differences between those who precisely meet the standards of care (as we recommend and insist each time) and those who do not. Conclusions. It is necessary to correctly apply the standards of care in SMA patients, sometimes even monitoring them regularly to ensure that they also benefit at home from those learned in NCHCN.

Congress Abstract – L70

The Importance Of Early Sensory-Motor Assessment Of The Newborn At Risk

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Abstract: Introduction: Reduction of perinatal mortality has not been followed by a concomitant reduction of morbidity; on the contrary, there is a rise in the prevalence of motor and sensory deficiencies. Improvements in neonatal intensive care have been associated with increased survival of very low birthweight and infants born preterm; however, morbidity remains high. There is an increased risk of cognitive and/or behavioural impairments, speech and language delay, and sensorimotor deficits, including cerebral palsy (CP). This greatly increases the emotional and financial burdens on families, society, and health care systems. Preterm babies are under risk in terms of sensory development because of exposure to negative sensory stimuli including intubation, heel lance blood sampling, intensive noise, and light, contrary to the safe in utero environment. In spite of its gestational age and of its weight, any new-born infant with severe or moderate pathology, requires attentive supervision by the neonatologist so that neuromotor assessments are performed first at birth, then at regular intervals, and the kinesiotherapist' assessment may be performed starting with the corrected age of

34 weeks. The aim is to stimulate the infant early so as to reduce the possible handicap concomitant with the training of the parents for the positioning and the mobilization of the new-born infant. Sensory and motor development is the gradual process to gain use and coordination of the large muscles of the legs, trunk, and arms, and the smaller muscles of the hands. A baby begins to experience new awareness through sight, touch, taste, smell, and hearing.

Congress Abstract – L71

Early Intervention In Paediatric Neurologic Rehabilitation – New Horizons

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Abstract: Introduction: Gestational age represents the term used during pregnancy for describing how far along the pregnancy is. It is measured in weeks, from the first day of the woman's last menstrual cycle to the current date. A normal pregnancy can range from 38 to 42 weeks. Before 37 weeks of gestation children are called premature, after 42 weeks postmature. Due to the development of medical technologies children born as soon as 21 weeks of gestation can survive. The team around such a premature baby is complex and the care system involved relies upon both evidence-based medicine and best practices guides. The rehabilitation process begins in the NICU and it is a continuous process through out childhood. Objectives: Presenting up-to date knowledge regarding the programs that are implemented in early Pediatric Rehabilitation of premature children and the need for local and international support for the medical team and the involved families. Method: Use of data base Elsevier, Scopus, ScienceDirect, SpringerLink Biomedicine, Web of Science, PubMed literature related to premature children care and follow-up and displaying in succinct PowerPoint presentation the draft for collaboration between Neonate Ward and Rehabilitation outpatient Service of Constanta County Hospital and Neuromotor Pediatric Rehabilitation Ward of Techirghiol Balneal and Rehabilitation Sanatorium.

Key words: premature, rehabilitation, early intervention

Congress Abstract – L72

The Variability Of 3d Kinematics And Electromyography Measurements Of Newly-Acquired Gait In Toddlers With Typical Development And With Unilateral Cerebral Palsy

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Abstract: Objectives: The aim was to assess three sources of variability (intersubject, intersession and intertrial) of lower limb kinematic and electromyographic (EMG) variables during gait in toddlers with typical development (TD) and unilateral cerebral palsy (UCP) (age <3 years, independent walking experience ≤6 months). Methods: Gait kinematics and surface EMG were recorded in 30 toddlers (19 TD and 11 UCP), during two, 3D-motion capture sessions. Standard deviations (SD) between subjects, sessions and trials were calculated to estimate sources of variability. Results: Intersubject variability was the lowest (SD subject <3°) for the frontal plane of the pelvis and the highest for the foot progression (18.2° for the affected side of the UCP toddlers). Intertrial variability was dominant for all muscle except for the triceps surae on the affected side of UCP toddlers. Conclusions: Intrinsic (intertrial and intersubject) variability was high, reflecting both motor immaturity and the high variability of toddler gait patterns. In toddlers with UCP, variability was amplified by motor impairment and delayed motor development.

Congress Abstract – L73

The Use Of Dry Needling In The Management Of The Spastic Foot - Paediatric Case Report

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Abstract: Introduction: Dry Needling (DN) is a minimally invasive treatment performed by skilled, trained physical therapists and medical doctors, certified in the procedure. A thin monofilament needle penetrates the skin and treats underlying muscular trigger points for the management of neuro-musculoskeletal pain and movement impairments. Patients with Cerebral Palsy often suffer from pain and have an altered gait pattern due to spasticity. To alleviate pain and to improve muscle control NSAIDs, braces and TBA injections are often used together with kinetic therapy. Treating specific trigger points with DN can improve gait patterns and alleviate pain in these patients. Patient information and clinical findings: Patient B. D., female, aged 17, diagnosed with Spastic Tetraplegic Cerebral Palsy, normal cognition, is committed in the Children's Ward of Balneal and Rehabilitation Sanatorium Techirghiol to continue and adjust the long-term therapy plan. Patient suffers from neurological bilateral pes planus and hallux valgus. During the treatment the patient develops bilateral severe foot pain while standing, with blistering on the soles while wearing the prescribed orthotics. The decision to change the type of foot orthotics and to perform DN on the Adductor hallucis, Flexor digitorum longus, Gastrocnemius, Adductor magnus and Psoas was taken together with the patient. Discussion: Improvement of scores on Visual Analogue Scale and Functional Independence Measures, immediate improvement of gait pattern and ROM, sustained over a 14-day period until discharge - do these justify an invasive approach? Conclusions: DN can be a useful tool with immediate results on pain and gait pattern for children with Cerebral Palsy. Further monitoring of the patient is needed to determine long term results. Further research is necessary to validate the results of this finding.

Keywords: cerebral palsy, dry needling, gait pattern, pain

Congress Abstract – L74

Joubert Syndrome – A Rare Cause Of Hypotonia

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Abstract: Introduction: Joubert syndrome is a mainly autosomal recessive ciliopathy characterized by global developmental delay, hypotonia which evolves into ataxia, renal cysts and dystrophy, oculomotor apraxia,

skeletal, endocrine and breathing abnormalities as well as congenital liver fibrosis. By presenting a patient with type 17 Joubert syndrome we aim to help facilitate a fast diagnosis of this rare and highly heterogeneous disease. Methods: Following clinical and paraclinical assessment, next-generation sequencing consisting in a gene panel for Joubert syndrome and associated syndromes was performed. Results: The patient was homozygous and heterozygous for two pathogenic variants in the CPLANE1 gene, one of them located upstream of the other, thus acting as a compound heterozygous. Conclusions: Joubert syndrome is a rare cause of hypotonia. Due to its marked heterogeneity, this disease oftentimes passes undiagnosed. Rapid diagnosis permits prompt genetic counselling and initiation of supportive treatment.

Congress Abstract – L75

THE CARDIAC REHABILITATION REALITIES IN ROMANIA

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Abstract: Cardiovascular diseases(CVD) are the leading cause of mortality and morbidity in Romania.CVD remains the number one cause of death in the world. An important and cost-effective secondary prevention strategy is cardiac rehabilitation(CR),a multifactorial, multidisciplinary and comprehensive intervention which started in the 1960s.The objectives are the improvement of functional capacity, control of cardiovascular risk factors, adopting a healthy lifestyle, education and adherence to the recommended therapies, the reduction of disability, the reduction of cardiovascular mortality and increasing the quality of life. It has been shown to reduce mortality, hospital readmissions and costs and to improve exercise capacity, quality of life and psychological wellbeing. In Romania CR programmes started before the 1960s. CR is delivered in three phases. The 1st and 2nd phase of CR is delivered in a hospital inpatient facility, in dedicated centers that have the necessary equipment and a multidisciplinary team, but an insufficient number of beds compared to the great number of patients with an indication for rehabilitation. For the 3rd phase, or long-term rehabilitation, the aim is to maintain the benefits achieved in 2nd phase. It can be delivered in different ways: ambulatory, in-hospital, at home. In this phase CR programmes in Romanian cardiovascular oriented health resorts use the huge potential of natural factors.

Key words: Cardiac rehabilitation,secondary prevention,health resort

Congress Abstract – L76

The role of muscle strength in the prognosis of patients with cardiovascular disease

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Abstract: Muscle strength (MF) plays a role in identifying nutritional status, body composition abnormalities (frailty, sarcopenia and sarcopenic obesity), allowing cardiovascular (CV) and metabolic risk stratification. FM values adjust for age and gender. FM reduction, also known as dinapenia, is associated with increased risk of CVD, mortality due to CVD, mortality from any cause, increased cardiometabolic risk. The assessment of FM is performed using hand grip strength. The FSM is a simple, highly reproducible and inexpensive tool, easy to implement in clinical practice, that requires a maximum isometric contraction of the forearm, performed in standing/sitting, with the elbows unsupported. It involves squeezing the dynamometer for 3-5 seconds, recording the maximum value of three measurements. The most effective tool for improving FM in both the young and the elderly remains physical resistance training. Resistance training can modulate both CVD risk factors and cardiorespiratory fitness. Frailty is a complex geriatric syndrome characterized by decreased vitality and increased vulnerability, frequently found in people over 60, accompanied by disability and

polyopathy, associated with increased risk of developing CVD, mortality from any cause and decreased quality of life. Sarcopenia is characterized by the loss of muscle mass as a result of the natural aging process. It starts around the age of 40 and progresses more rapidly after the age of 60-70. On average, a person can lose about 3-8% of their muscle mass during each decade. Conclusions: FM is an important modifiable risk factor for many cardiovascular diseases, cardiovascular disease-related mortality, and all-cause mortality. Except for the risk of hypertension, where the evidence is conflicting, an adequate level of FM exerts protective effects on several CV and metabolic conditions. Dinapenia is a mediator of nutritional status capable of identifying those with frailty and sarcopenia. Frailty and sarcopenia confer greater risk for cardiometabolic disease. Increasing FM through physical resistance training may be a method to improve cardiac recovery outcomes in CVD patients, especially CVD and HF.

Congress Abstract – L77

The role of cardiopulmonary exercise test in cardiac rehabilitation and for establishing prognosis

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Abstract: The capacity of the cardiovascular system to deliver O₂ to the muscles together with the lungs function that is used to eliminate CO₂ from the blood are highly related to human's body capability to perform physical activities. The objective of this work has been to explore the role of cardiopulmonary exercise testing (CPET) in cardiac rehabilitation and for establishing prognosis.

CPET can provide an in-depth analysis of the different physiological functions of body used during exercise, such as the pulmonary, cardiovascular, muscular, and cellular oxidative systems. The parameters measured with CPET include: O₂ intake [peak VO₂], VO₂ pulse, circulatory power, peak systolic BP, peak end-tidal pressure CO₂ [PEtCO₂], and peak Borg scale score, ventilatory efficiency [VE/VCO₂ slope]; VO₂ at aerobic and anaerobic threshold [VT1/VT2]; respiratory compensation point [RCP] and oxygen uptake efficiency slope [OUES].

Using cardiopulmonary exercise testing at the beginning of the cardiovascular rehabilitation program can help us determine the optimal intensity for the aerobic physical training needed, personalized for each patient. The characteristics of optimal level of intensity for aerobic physical training include the absence of cardiovascular symptoms, absence of signs of myocardial ischemia and hemodynamic stability. This step is particularly important as all the data collected will be used for improving the effort capacity during rehabilitation period. At the same time, the role of CPET is to assess the risk associated with exercise and to determine the required level of patient monitoring during the rehabilitation program.

CPET represents an important tool in the clinician's armamentarium being used for the diagnostics and treatment of plenty of the frequently encountered clinical problems. Exercise gas exchange measurements provides indexes of the functional capacity that can be objective and reproducible, generates invaluable information in determining the origin of dyspnoea on exertion, and gives unique prognostic capabilities for cardiovascular patients proper management during rehabilitation and afterwards.

Congress Abstract – L78

Where should we go forward: conventional or telerehabilitation?

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Abstract: Cardiac rehabilitation is a supervised program that includes: physical activity, education about healthy living, including how to eat healthy, take medicine as prescribed, quit smoking and avoid stress and improve mental health. There are 3 phases of cardiac rehabilitation: phase I (clinical phase) that begins in hospital, soon after a cardiovascular event; phase II (outpatient cardiac rehabilitation) begins after the patient is cardiologically stable and last between 3-6 months and phase III (post-cardiac Rehab) in which patients are advised to maintain an active lifestyle and continue exercise. Our scope is to compare patients who performed conventional cardiac rehabilitation with patients who performed cardiac telerehabilitation using a virtual coach (vCare system) and patients who did not performed any cardiac rehabilitation. A total of 30 subjects suffering from heart failure were recruited, 17 mens and 13 women with an average age of 61 years. Ten patients belonged to the experimental group (who performed cardiac rehabilitation at home using a virtual coach), 10 patients to the ambulatory group (who performed conventional cardiac rehabilitation) and 10 to the control one (who only received advices to perform exercises activities at home and to reduce risk factors). Statistically significant differences were found between the pre-post intervention groups, showing a significant improvement of the exercise capacity, quality of life and reduction of cardiovascular risk factors. Conclusion: Using vCare system has associated with improvement of the clinical condition, increasing the quality of life and can be considered a safe and effective solution for ensuring the continuity of medical care and access to personalized cardiac rehabilitation for patients with heart diseases.

Congress Abstract – L79

Effects Of Balneo-Physical Therapy On The Functionality And Quality Of Life Of Patients With Hip Osteoarthritis

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Abstract: Introduction: : The purpose of the study is to asses the benefits of balneo-physical therapy on the functionality of the osteoarthritic hip joint, and how is the overall quality of life influenced by a better function of the coxo-femoral joint. Methods: Patients were selected from Techirghiol Balneary and Rehabilitation Sanatorium who were radiographically diagnosed with hip osteoarthrosis, and who’s other afflictions didn’t have an impact on functionality of quality of life. They all received treatments with sapropelic mud and salt water from Techirghiol Lake in addition to physical therapies. Hip functionality and general quality of life were assessed with specific instruments and forms before and after treatment. Results: Most of the patients were female, from the 60-69 age group. A great positive impact of the treatment was objectified with increased joint mobility, with the pain syndrome significantly diminished, the other symptoms regressed, the ease of activities increased and with a general overall increase of the quality of life, all of these specific features been quantified and statistically analyzed. Conclusions: The study revealed the significant impact of balneo-physical therapy on the functionality, on the symptomatology and on the life quality in the short term. Further studies ought to be made in order to determine the duration of the beneficial effects, but the general reasoning

is that balneo-physical cure is a good choice of treatment, and with the added benefit of having close to no side-effects, it should be taken into consideration as first choice.

Congress Abstract – L80

Pain Therapy In Physiotherapy - Virtual Reality In Frozen Shoulder

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Abstract: Introduction: Pain therapy in physiotherapy represents the next step in the treatment of chronic pain in the 21st century in knowing and relating to the pain of our patients. We physiotherapists have many weapons that we can use in the treatment of chronic pain, starting with the education of patients in the neuroscience of pain, T.E.N.S, Manual Therapy, relaxation techniques, physical exercise, therapy through graded motor images, but the next step is VIRTUAL REALITY. The involvement of Virtual Reality in physiotherapy programs in frozen shoulder showed a real benefit, the patient. Benefits have been found in creating a safer work environment, in combating pain as an alternative analgesic method to reduce the level of anxiety and to distract patients during movements due to the sensory effects created by the virtual applications. Virtual reality (VR) has been used for a variety of psychosocial interventions since the early 1990s, and in recent years the use of virtual reality has become a very useful technique in physical therapy programs.

Congress Abstract – L81

Carpal Tunnel Syndrome – Patient Care And Rehabilitation

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Abstract: Introduction: The purpose of this research is to monitor and evaluate the results of complex treatment methods applied to the patients diagnosed with carpal tunnel syndrome admitted to Techirghiol Balneal and Rehabilitation Sanatorium. Methods:For the study on the treatment of patients with carpal tunnel syndrome, a group of 50 patients was developed, ages between 42 and 76 years, all hospitalized at Techirghiol Balneal and Rehabilitation Sanatorium between 01.17.2021 and 12.04.2021. The data were processed using Microsoft Excel. Results:The evolution of the patients was favorable, the symptoms decreased significantly, and there was an increase in muscle strength and mobility in the joint of the affected hand. Conclusions: It has been found that complex treatment allows the patient's recovery as early as possible, having high effectiveness and a major impact on increasing the patient's quality of life, in order to return to work and carry out daily activities.

Congress Abstract – L82

Particularities Of Care For The Patient With Ankylosing Spondylitis

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Abstract: Introduction: The main objective of this research is to evaluate the results obtained in the application of proper care, natural healing factors, and the most modern methods of medical therapy. Methods: The target group consists of 50 patients diagnosed with ankylosing spondylitis of different degrees. During the research, the database registered at Techirghiol Balneal and Rehabilitation Sanatorium’s archive between January and December 2021 was used for information. Microsoft Excel was used as a statistical method. For the measurement of the targeted parameters, among other methods, evaluation scales were also used: VAS (Visual Analog Scale) and FIM (Functional Independence Measure). Results: At discharge, there was a favorable evolution of the health condition as well as the degree of independence of the patients who benefited from complex treatment at Techirghiol Balneal and Rehabilitation Sanatorium, compared to the moment of commitment in the unit. Conclusions: The rehabilitation treatment with balneary factors positively influences the quality of life for patients with ankylosing spondylitis allowing their socio-professional reintegration.

Congress Abstract – L83

Ultrasonographic Assessment Of The Shoulder - Improvements In The Diagnosis And Treatment Strategy Selection

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Abstract: Introduction: : The anatomy of the shoulder is complex with its bones (humerus, scapula and clavícula) which form joints covered by capsule and the bones extremities are covered by hyaline cartilage and connected by the ligaments. On the bottom there are the rotator cuff muscles and tendons and all of these are covered by the Deltoid muscle. Objective: Ultrasound diagnosis of the shoulder in order to choose the best treatment. Methods: A proper knowledge of the shoulder anatomy, an optimal setting of the device and a good evaluation technique. Results: Using shoulder UUS examination, we can identify injuries of the tendons, ligaments, calcifications, degenerative changes, joint, bursal or tendon sheath fluid collection, inflammatory pathology, bones erosions or production. We have to do a systematic evaluation on anterior, antero-lateral, posterior and axillar view of the shoulder to check all the anatomical structure and find the source of the patient’s suffering. Conclusions: Shoulder’s complex anatomy leads to diverse disorders, but we can easily use MSK UUS, a sensitive and specific method that can assess this joint pathology. Dynamic evaluation offers us “real time “ information helping to diagnose and choose the appropriate treatment, that being surgical or conservativ

Congress Abstract – L84

Challenges During The Recovery Treatment Of Osteoarthritis Associating Hypertension

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Abstract: Introduction Osteoarthritis is the most widespread rheumatic disease, and second most common cause for invalidity for people over 50 years of age, after ischemic heart disease. The recovery treatment is essential for this type of patient, postponing it more than necessary would have irreversible repercussions. Hypertension has been associated with OA (osteoarthritis) in the specialized literature multiple times and is hypertension that makes the recovery treatment of a patient with osteoarthritis much more difficult to conduct. Material and method: The proposed study was an analytic and statistic view on the patients that were treated in a time frame of 3 months in the County Emergency Hospital for Kids "Sf. Ioan" Galati in the Neuropsychomotor Recovery Ward between 1 of January 2022 and 1 st of April 2022. Results: Out of the 50 examined patients with osteoarthritis, 34 had among others hypertension associated with their medical history. From the examined patients, 76% came for treatment with radiography and echography signs of osteoarthritis which is to be expected because the patients ignore the initial signs of osteoarthritis and when the symptoms are harder to overlook, because of their functional limitations and inability to perform daily activities, that is the moment they show up for treatment. Conclusions: The purpose of this discussion was to bring awareness to the fact that a patient with osteodegenerative disease associated with hypertension needs a different approach to the recovery treatment. Hypertension represents a contraindication to the electrotherapy, resulting in a change of the objectives of the treatment, fact that is important to be aware of especially because the geriatric patient through his medical condition is part of the multidisciplinary team.

Keywords: osteoarthritis, electrotherapy, hypertension, recovery, treatment

Congress Abstract – L85

Comparative Study Of The Improvement Of Lung Capacity Following Respiratory Physiotherapy

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Abstract: A contemporary treatment strategy for respiratory illnesses, pulmonary rehabilitation combines physical exercise, therapeutic instruction, psychological counselling, and nutritional approach. Regardless of the severity of functional impairment, pulmonary rehabilitation is for any patient with a pulmonary pathology whose quality of life is impacted by respiratory symptoms. Patients who have respiratory pathologies may benefit from pulmonary rehabilitation due to the pathophysiological changes they go through (e.g., impaired lung function and gas exchange, muscle atrophy and deconditioning, etc.), which cause symptoms, a decrease in exercise tolerance, and a decrease in daily physical activity, all of which contribute to a lower quality of life.

Material and methods: In our study, we examined ten patients who underwent spirometry and had a history of respiratory conditions (bronchial asthma, post-COVID-19, mechanical thoracic trauma, ankylosing spondylitis). We orientated ourselves based on spirometry test results in order to select the appropriate respiratory recovery therapy. **Results:** We were pleasantly surprised by the results because they revealed an improvement in quality of life. We found that respiratory recovery improved the pulmonary capacity of the

examined patients, reduced asthmatic exacerbations, significantly contributed to the strengthening of the intercostal muscles and an increase on effort capacity. **Conclusions:** Pulmonary rehabilitation is for any patient with a pulmonary pathology whose quality of life is affected by respiratory symptoms, regardless of the degree of functional impairment. We were surprised and delighted because we discovered that respiratory rehabilitation increased the patient's pulmonary function, decreased asthmatic flareups, dramatically strengthened the intercostal muscles, and increased their ability to exert effort.

Congress Abstract – L86

Kinesiotherapy and Physical Activity in COPD and Asthma Patients – A Review

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Abstract: Background: Obstructive chronic diseases are a continuous challenge for healthcare perfusionists all over the world. Asthma and Chronic Obstructive Pulmonary Disease (COPD) are the most frequent of these diseases. Respiratory or pulmonary rehabilitation started to gain momentum and it is more frequently used to improve muscle strength, cardiac and respiratory endurance and joint flexibility. The objective of this paper is to establish the current programs of physical activity or kinesiotherapy used in the past year and to reveal if there are any gaps or mismatches in the development of the program or in the instruments used to quantify the results of the rehabilitation programs. Materials and methods: We reviewed a total number of 12 articles, randomized control trials using the search words kinesiotherapy, physical therapy, COPD and asthma from the last year on PubMed.gov, from 11 different countries in order to establish which have similar types of exercises, parameters used in order to compare results and which were the outcomes. Results: The final results are positive, although it is hard to determine a unity because there were so many different parameters used to monitor the patients. The most frequent parameter was the 6MWT used to compare the effectiveness of the physical program in 6 studies. Discussion and conclusions: This review had its limitation in comparing the 12 articles researched because of the different number of patients, the various physical activity and rehabilitation exercises used, but especially because of the many varieties of scales and scores used to monitor the effectiveness of the treatment. In order to successfully compare such papers, an international guideline is necessary to relay specific rehabilitation programs for every type of respiratory pathology and also which are the most recommended scales or scores or parameters in general to asses such rehabilitation programs.

Keywords: kinesiotherapy, physical activity, physical therapy, COPD, asthma

Congress Abstract – L87

Deep Oscillation Therapy for Pulmonary Rehabilitation

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Abstract: Introduction: Deep Oscillation Therapy is being used in a large range of medical conditions, primarily working at cell levels, activating enzymes which help the body reduce the oxygen radical production. The device has also been successfully used in respiratory conditions, increasing the oxygen saturation, diminishing dyspnea and produce a general wellness state for the patients. The objective of this paper is to combine the beneficial effect of deep-oscillation therapy with other physical therapies and physical exercises

in order to see the effectiveness of this respiratory rehabilitation program. Materials and methods: We followed the progress of a 76-year-old female COPD patient, who also has COVID-19 in February 2022, with persistent cough, rare expectoration, mild dyspnea – during physical activity, with VC (Vital Capacity) of 31% and FEV (Forced expiratory volume) of 33% on spirometry. The patient received individualized rehabilitation treatment, with Deep Oscillation Therapy, Ultrasound Therapy, Magnetic Therapy, Short Waves Therapy, Massage and kinesiotherapy. The parameters of the patient were objectified through the 6MWT (6 minutes walking test), MRC Dyspnea Scale, Borg VAS scale for dyspnea, LCADL (London Chest Activity of Daily Living Scale), CAT (COPD Assessment Test), Hamilton Anxiety Scale, Major Depression Inventory, QOL (Quality of Life Scale). Results: The patient had higher scores in all the tests we performed from the beginning to the end of the rehabilitation program. Objectively, the patient stated that the expectoration became greater after a few sessions of Deep-Oscillation Therapy. Conclusion: Deep-Oscillation Therapy, together with other physical therapy devices, improved a great deal the usual symptoms of a respiratory suffering patient. The international studies proved that Deep-Oscillation is an important tool in improving the condition of the respiratory patients. Further studies with Deep-Oscillation Therapy in obstructive combined with restrictive pulmonary disease are needed in order to fully treat in a maximum capacity the patients with chronic lung disease which also suffered from COVID-19.

Keywords: Deep Oscillation Therapy, Pulmonary rehabilitation, Physical therapy, kinesiotherapy

Congress Abstract – L88

PRP and Ozone Therapy in Osteoarthritis

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Abstract: Objectives: The evaluation of ozone therapy and platelet-enriched plasma (PRP) infiltration effect on patients with osteoarthritis in improving life quality overall. Methods: 34 patients with gonarthrosis stages II-III, 18 patients with rheumatoid polyarthritits in the acute stage and 12 patients with ankylosing spondylitis were studied and Ozone therapy and PRP procedures were applied during of period 01.01.2021-01.06.2022 on patients that. Ozone therapy was applied for 10 sessions for each patient administrated subcutaneous, intraarticular and major autohemotherapy and PRP was administered for 3 sessions every 14 days. We assessed the patients using VAS Pain Scale, ROM (Range Of Motion) measured with goniometer. Results: The visual clinical results of the VAS Pain Scale were positive on 100 (%) patients. We obtained also an improvement in ROM in 30 of the patients with gonarthrosis and in all patients with rheumatoid arthritis and ankylosing spondylitis. Conclusions: Ozone therapy and PRP therapy are part of complementary medicine that has major benefits in the treatment of patients with inflammatory conditions, significantly relieves their pain and restores their mobility and therefore freedom of movement. Ozone is the strongest and fastest anti-inflammatory with no side effects and no drug or food and beverage interactions. The Nrf2-dependent antioxidant response stimulated by ozone therapy has been shown to protect against oxidative-stress related diseases with degenerative diseases, and inflammation. Platelet derived GF (PDGF), transforming GF β 1 (TGF β 1), vascular endothelial GF (VEGF), basic fibroblastic GF (bFGF), epidermal GF (EGF) helps the regenerative processes of cartilage in early-medium stage of arthrosis.

Keywords: ozone therapy, gonarthrosis, rheumatoid arthritis, ankylosing spondylitis, chronic inflammation, acute inflammation, PRP therapy, rehabilitation medicine

Congress Abstract – L89

Respiratory Muscle Training In Patients With Chronic Pulmonary Diseases, Including Covid-19

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Abstract: Introduction: The respiratory muscles play an essential role in maintaining normal ventilation and proper gas exchange. Their impairment has a multitude of effects on the clinical manifestations of respiratory diseases: the inspiratory muscles are correlated with the onset of dyspnea, fatigue and the development of hypercapnic respiratory failure, while the expiratory muscles are related to the efficiency of coughing. Thus, the training of the respiratory muscles (AMR) is an important independent component in the respiratory recovery program (RR). The work exposes the aspects related to the respiratory muscles and their training (as a significant part of the complex RR program or standing drawings), as well as the test devices and technique, indications, contraindications, types of training, etc. Assessment of maximum inspiratory/expiratory pressure (MIP/MEP) in the oral cavity will precede AMR, and it is recommended that the AMR program be initiated at MIP below 60 cm H₂O. At first, the exercises will be performed under the supervision of a physiotherapist, then self-management is encouraged and patients should carry out the long-term training at home, as an integral part of the RR program or on its own. Usually, the training of the inspiratory muscles is performed by patients whose main symptom is dyspnea, and in the case of those who have bronchial secretions, the training of the expiratory muscles is also used. AMR provides significant benefits when applied alone or when integrated into a RR program, improving muscle strength and respiratory muscle endurance, thereby increasing exercise capacity in patients with chronic lung disease, including COVID-19 disease.

Congress Abstract – L90

Neurological manifestations associated with coronaviruses

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Abstract: The experience accumulated after approximately two years since the declaration of the COVID-19 pandemic shows us that, in addition to lung damage, this virus causes a series of neurological, cardiac, digestive manifestations, etc., which depend on the patient's age and the presence of comorbidities and his immune system. To the greatest extent, the disease manifested as simple flu and approximately one-third of the patients required hospitalization. The forms of human coronaviruses 229E, OC43 and SARS-CoV have the neuroinvasive capacity, a fact supported by the presence of viral nucleic acids in the parenchyma of the human brain. Neurological manifestations can affect the central nervous system (CNS), the peripheral nervous system (PNS), and the musculoskeletal system. Dissemination of the virus can be achieved either by the hematogenous or neural route. There is a classification of organs susceptible to infection with COVID-19; primary, respiratory, digestive, and urinary systems are affected. Along with these, damage to the nervous system was noticed due to the presence of angiotensin-converting enzyme receptor two and TMPRSS2 in the precursor cells of oligodendrocytes and astrocytes in the substantia nigra and cortex. The incidence of central

neurological disorders was 24.8% and peripheral nervous system damage was identified in 8.9% of cases with demonstrated infection, associated with skeletal muscle injuries in 10.7% of cases.

Affecting PNS is very varied: from anosmia and ageusia (general or partial), damage to some cranial nerves (oculomotor, facial paresis) to the appearance of Guillain-Barré and Miller Fisher syndromes (MFS), a variant of Guillain-Barré syndrome (the clinical triad of ophthalmoplegia, ataxia and areflexia). CNS manifestations associated with COVID-19 described in the literature are headache, dizziness, impaired consciousness, acute cerebrovascular disease, epilepsy, ataxia, acute disseminated encephalomyelitis (ADEM), and viral encephalitis.

In the current context of the COVID-19 pandemic, early diagnosis and isolation of patients with COVID-19 infection, early identification, and treatment of neurological symptoms are required.

Keywords: COVID-19; neurological manifestations; medical recovery.

Congress Abstract – L91

Guillain-Barre Syndrome and COVID-19: A case report

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Abstract: In December 2019, a new coronavirus, called SARS-CoV-2, was identified in China. The effects and complications of the infection with this virus determined the pandemic declaration in March 2020. Guillain-Barré syndrome (GBS) is an acute-onset polyneuropathy that usually presents with symmetrical ascending flaccid paralysis and paresthesia's associated with autonomic system disorders. GBS is a disorder in which the immune system attacks gangliosides on the peripheral nervous system. The immune response can affect either the myelin, causing acute inflammatory demyelinating polyradiculoneuropathy, or the axon, causing acute motor and sensory axonal neuropathy. **Materials and methods.** A 75-year-old patient from a rural environment was hospitalized for a global functional deficit. From the anamnesis, we note: emergency hospitalization in the Oradea County Hospital on December 25, 2021, for paresthesia's in the lower limbs, decreased muscle strength, initially in the lower limbs, then in the upper ones. Medical history was positive for flu-like symptoms; the PCR test for COVID-19 is positive. The diagnosis of GBS was made, and intravenous immunoglobulin (IVIG) treatment was initiated at 0.4 g/kg/day for five days. The neurological examination on admission to the recovery ward shows a decrease in muscle strength F= 3 / 5 with areflexia in both the proximal and distal muscle groups of the lower and upper extremities. Neck flexion and extension strength were 3 out of 5.

Results and discussions. Drug treatment with neurotrophic and a complex medical recovery program were initiated. At the end of 10 days of treatment, the patient has 4/5 strength in the muscles of the lower limbs, gains stability while sitting, orthostatism, and can move around the room with the walking frame.

Conclusions. The early institution of treatment with immunoglobulins and neurotrophics, followed by a medical recovery program, reduces the residual disability. However, GBS is fatal in 3-5% of patients, and approximately two-thirds have a residual disability.

Keywords: COVID-19; SARS- CoV-2; Guillain-Barré syndrome; medical recovery.

Congress Abstract – L92

Case Report On Special Features Relating To Recovery In A Complex Case After Hemoragic Stroke

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Abstract: Introduction: a cerebrovascular accident, is the third leading cause of morbidity and mortality in many developed nations. Stroke caused by hemorrhage is known to have high death rates and significant morbidity. The consequences are worse as hemorrhagic stroke progresses. Given the typical rapid growth of bleeding, which results in a precipitous decline in consciousness and neurological dysfunction, early detection and treatment are crucial. Materials and methods: We describe a woman in her sixties who suffered left breast surgery in 2014 and received polychemotherapy. She also experienced thyroid hormone replacement therapy. In August 2020, she suffered a subarachnoid hemorrhage caused by the rupture of a posterior communicating artery aneurysm. She was referred to the Balneal and Rehabilitation Sanatorium Techirghiol for the establishment of a balneo-physical-kinetic rehabilitation treatment for a right limb strength deficit, global aphasia, swallowing disorders, right central facial paresis. During her admission to the hospital, the patient underwent complex rehabilitation treatment through individual physiotherapy (postures, re-education of sitting position, passive mobilizations), respiratory physiotherapy, sacral scar tissue, casual massage, sedative, speech therapy and psychotherapy. Results: Following therapy, the patient displayed aphasia, a partial recovery of mobility (active movements of the left limb, folding of the right upper arm, paresis of the right lower limb), and paresis of the right lower limb (the patient making attempts to communicate and expressing reactions to stimuli). Solids and liquids could once again be swallowed. The pre-sacral escarpment has evolved favorably, and the calcaneal eschar and abscess on the trochanter has been healed. Conclusions: Multidisciplinary approach and complex individualized programs of rehabilitation significantly helps in stroke rehabilitation. The peculiarity of the case is that the patient experiences a recurrent ischemic stroke and dies even though she was receiving anticoagulant treatment. This happens after the treatment has progressed well, with periods of verticalization, normalization, and maintenance of all biological tests.

Congress Abstract – L93

Benefits Of Neurorehabilitation In A Case Of Hemiparesis Post A Recurrent Cardioembolic Stroke

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Abstract: Introduction: A large percentage of ischemic strokes are cardioembolic strokes, which are generally serious conditions. The risk of early and long term stroke recurrence is higher in patients with cardioembolic infarction, although recurrences may be avoided with the right care during the acute phase and effective control during follow-up. Material and methods: This paper presents a complex case of hemiparesis post a recurrent cardioembolic stroke that was admitted at the Balneal and Rehabilitation Sanatorium Techirghiol for left hemiparesis with motor deficit that is predominantly facio-brachial and mechanical pain in the left shoulder. During the admission, the patient followed a complex recovery treatment that included electrostimulation on the left quadriceps and left tibialis anterior muscles, Care Therapy on the left shoulder, ultrasound on the left Achilles tendon and left shoulder, high intensity laser therapy on the cervical and lumbar areas, decontracting massage and kinetotherapy with the objectives of strengthening the left hemibody, enhancing coordination, reskilling gait and enhancing left hand manual dexterity. Results: Benefiting from this

complex neurorehabilitation program, the patient had a favorable evolution with increased values of the measurement scales (MIF by 9 points and fall risk score by 2 points). Conclusions: As a conclusion, this is an exhaustive example of a clinical and therapeutic approach in a case of hemiparesis post a recurrent cardioembolic stroke with a surprisingly positive evolution, with a significant proportion of functional independence recovering, without a deficit in locomotion, but only with a grip deficiency in the non-dominant hand.

Congress Abstract – L94

Rehabilitation in Young Patients with Stroke after Drug Abuse

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Abstract: Introduction. Drug abuse robs individuals of their jobs, their families, and their free will as they succumb to addiction; but may cost even more: a life of disability or even life lost due to stroke. Both ischemic and hemorrhagic stroke have been reported due to drug abuse. Several common mechanisms have been identified, such as arrhythmias and cardioembolism, hypoxia, vascular toxicity, vascular spasm and effects on the thrombotic mechanism, acute hypertension, aneurysm formation/rupture and angiitis-like changes. Many illicit drugs have been linked to major cardiovascular events and other comorbidities, including cocaine, amphetamines, ecstasy, heroin, and marijuana most of them being combined with alcohol consumption. Materials and methods. Through this study I have followed three male patients admitted to Rehabilitation Physical Medicine and Balneology Clinic of Ilfov County Emergency Clinical Hospital, aged between 30 to 40 years. The criterium for inclusion in the study was having a stroke in the last 12 months caused by illicit drug abuse followed by functional and psycho-cognitive disabilities. The data presented include patient history, clinical examinations, assessments of neuro functional deficits through specific scales and medical and kinesiological treatment. Results. The favorable patient progression due to medical and rehabilitation treatment, associated psychotherapy being of the utmost importance for previous functional young adults in society, some of them with families and children. Conclusions. The particularity of the study: the positive outcome which emerged after a persistent therapeutic rehabilitation despite the limitations imposed by the mental state of the patient during hospitalization and the presence of multiple neuro functional and psycho-cognitive deficits.

Keywords: drug abuse, stroke in young people, hemiplegia

Congress Abstract – L95

Successful Neuromuscular Rehabilitation of a 85 year-old woman with predominantly crural left hemiparesis due to right middle cerebral artery ischemic stroke, with a history of pacemaker implantation and recent COVID-19 infection

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Abstract: The middle cerebral artery (MCA) is the most common artery involved in acute stroke. Its vast supply means that strokes involving the MCA territory can have a multitude of presenting symptoms,

depending on which branches and structures are affected. **Material and methods.** This study presents the case of an 85 year-old woman who developed an acute left hemibody motor deficit and was urgently transported to the nearest emergency hospital where she was diagnosed with a right middle cerebral artery ischemic stroke. The right middle cerebral artery ischemic stroke had a favorable evolution under neurological supervision and treatment, leading to the transfer of the patient to „Bagdasar-Arseni” Hospital on our Neuromuscular Rehabilitation department. On admission on our department, the patient presented with central facial paresis with left hemihypesthesia, left hemibody motor deficit, accentuated left upper limb reflexes, indifferent left lower limb reflexes and finger paresthesia bilaterally on upper and lower limbs. The patient underwent an extensive personalised neuromuscular rehabilitation programme which led to a significant improvement of her symptoms. The scales used for the assessment of this patient are as followed: Functional Ambulation Categories (FAC), Glasgow Outcome Scale-Extended (GOS-E), Disability Rating Scale (DRS), Life Quality Assessment (QOL), Muscle Power Scale (MRC), Basic Activities of Daily Living (ADL), Barthel Scale, American Spinal Injury Association (ASIA), modified Ashworth, Spasm Frequency Scale (Penn), modified Rankin scale. **Results.** Even though the patient was known to have a VVIR pacemaker for second-degree atrioventricular block and unfortunately also contracted COVID-19 infection during her admission, the rehabilitation and kinesiotherapeutic programme was successful, leading to a significant evolution. On discharge the patient was able to walk short distances using a tetrapodal cane. **Conclusions.** Owing to extensive multidisciplinary care and a well-planned rehabilitation and kinesiotherapeutic programme, the patient’s evolution was impressive even under unfortunate circumstances (COVID-19 infection, VVIR pacemaker).

Keywords: middle cerebral artery stroke, SARS COV-2 infection, VVIR pacemaker, neuromotor deficit, neuro-rehabilitation programme

Congress Abstract – L96

From Femoral Neck Fracture, To Emotional Recovery-Case Study

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Abstract: Introduction: Psychological counseling for the elderly involves in-depth knowledge of human nature, communication and relationship techniques, especially when our patient is a reputable intellectual, with a strong personality, going through a physical trauma, a femoral neck fracture. Objectives. Acceptance of surgery for hip prosthesis. Acceptance of care by qualified hospital medical staff. Mobilization for the physical recovery program. Implementing emotional recovery by reducing the impact of physical and mental trauma and restoring communication with the family, especially with the daughter. **Methods.** The intervention strategy was based on identifying the strengths and vulnerabilities of the case, making a detailed analysis of the patient's risks and resources, to note the chances of psycho-emotional recovery, neuro-psyche tone and post-traumatic recovery. Psychiatric consultation, modification of hypnotic medication, evaluation with the help of the MMSE Test, cognitive-behavioral therapy were used. Physiotherapy was applied, but also therapy through music, forgiveness and sacrotherapy. The patient's internal resources, such as the treasure trove of pleasant memories, were accessed. **Results.** Physical recovery after femoral neck fracture did not give the desired performance, but the relationship between mother and daughter was restored emotionally, which is a gain for both parties. **Conclusions.** We are all vulnerable, and if we acted psychologically preventive, we would avoid the phenomenon of isolation and we would respect each other more. Let's not forget that we are all memories makers. It would be good for them to be memorable!

Keywords: MMSE test, fracture, isolation depression, accentuated personality, physical therapy

Congress Abstract – L97

The Serotonine Program, So That The Vitality Is Maintained

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Abstract: Introduction: Since ancient times, people have wanted to be healthy, to live long and well, to be happy. Even today, people's desires have not changed much. According to medical research, the COVID-19 pandemic has exacerbated anxiety, stress, depression and trauma. The armed conflict between Russia and Ukraine has exacerbated people's unhappiness. The media warns of geopolitical and climate threats, which can lead to panic and emotional discomfort. These aspects can affect the level of psycho-immunity, which can make us more vulnerable to disease and more unhappy. Serotonin has been called "the hormone of happiness" since 1948, offering new valences in scientific research and new perspectives towards a state of well-being. Objectives. What are the health benefits of serotonin? What role does diet play in serotonin production? What is the impact of a healthy lifestyle for optimal serotonin production. Methods. The presentation highlights the functions of serotonin, its role as a neurotransmitter that facilitates communication of the brain with all organs of the body. Results. "The serotonin program for vitality to be maintained", brings to the attention of specialists the ways in which a convalescent patient can recover faster physically and psycho-emotionally. Conclusions. Serotonin creates a good mood and the joy of living, if we know how to respect how it works. Exercise, sunlight, healthy food, taken on time and based on various foods containing tryptophan, as a precursor to serotonin, will ensure our access to a fulfilling life, emotionally balanced and meaningful.

Keywords: serotonin, tryptophan, vitality, psycho-immunity, convalescence

Congress Abstract – L98

The Importance Of Complex Rehabilitation Treatment In The Context Of Sarcopenia

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Abstract: Introduction: sarcopenia and complex rehabilitation treatment can influence physical performance. Methods. This study includes 84 patients hospitalized for complex balneo-physical-kinetic treatment at Techirghiol Balneal and Rehabilitation Sanatorium. The parameters followed in dynamics, both at admission and at discharge, were: the SARC-F questionnaire (screening tool that analyzes: Strength, Walking Assistance, Rise up from a chair, Climbing stairs, Falls), specific functional tests for sarcopenia, Visual Analogue Scale (VAS). Results. Among the 84 analyzed patients, 60.7% were women, 82.1% were from urban environment, 47.6% were aged between 50-59 years. In terms of dynamics, the patients recorded improvements in the tests performed according to the established methodology and improvements in pain symptoms evaluated with the help of the Visual Analogue Scale (VAS). Conclusions. The complex balneo-physical-kinetic treatment performed by patients at Techirghiol Balneal and Rehabilitation Sanatorium, a representative unit of medical services in the field of rehabilitation, represents an important element for the prevention of complications and for the management of sarcopenia, by improving functional capacity and quality of life of the patients.

Congress Abstract – L99

POSTERIOR ANKLE IMPINGEMENT SYNDROME

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Abstract: Posterior ankle impingement syndrome is a commonly recognized lesion, found mainly in ballerinas and football players.

Improvement of the work technique mainly in ballerinas means increased mobility, particularly by long and hard stretching associated with flexion and abduction to perform „en plié ” and „en pointe” positions. Sometimes, to achieve the perfect positions, if the soft tissues are not in the best condition, there is necessary the intervention of compensatory mechanisms, that increase the pressure in the lateral compartment of the ankle, producing impingement syndrome and Flexor hallucis longus tenosynovitis. Especially in „en pointe” position a remarkable loading is in the hindfoot, producing in time a pathological trigonum bone. Conservative treatment may be indicated in the early stage of PAIS, however, about 40% of patients eventually require surgical intervention.

Material and methods: We examine the outcomes of two patients with PAIS, one with arthroscopic intervention at both ankles, but with early rehabilitation only after the second one. Treatment consists of functional assessment of static and gait and physical therapy with TECAR therapy for biostimulation, Deep oscillation for deep massage and drainage, Crio-ultrasound for pain and inflammation, Balance tutor for proprioception and neuromuscular control, and individual kinesitherapy to improve mobility and stability in different positions. The outcomes were good for the recently operated ankle. The patient returned after 4 weeks because she had pain and was in the impossibility to load „en pointe” on the first operated ankle. After another session of physiotherapy introducing ESWT, Tecar, LASER, TENS and Kinesitherapy, the results were encouraging, the patient could return to her activity.

Conclusions: The goal of early rehabilitation consists in reducing pain, improve range of motion, weight-bearing, preventing stiffness and delaying return to ballet. Early rehabilitation will make the difference in future outcomes.

Congress Abstract – L100

Management Of Congenital Muscular Torticollis

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Abstract: Introduction: Congenital muscular torticollis (CMT) also known as twisted neck or wry neck, is a postural deformity evident at, or shortly after birth, typically characterized by lateral flexion/side bending of the head to one side and cervical rotation/head turning to the opposite side due to unilateral shortening of the sternocleidomastoid muscle. It results from unilateral shortening and increased tone of the sternocleidomastoid (SCM) muscle and presents as lateral flexion of the head to the ipsilateral side with rotation to the contralateral side, also it may be accompanied by other neurological or musculoskeletal conditions. The etiology and pathogenesis of CMT is not completely understood but may be related to breech presentation, birth trauma, nuchal cord, or use of suction and forceps at birth. Infants with CMT should be referred to physical therapists to treat these postural asymmetries as soon as they are identified. There are several ways to approach congenital torticollis, and there is no therapeutic standardization. Professionals in various fields, including physiotherapy and osteopathy, recommend techniques for the treatment of infant torticollis. Early diagnosis results in the initiation of prompt non-invasive correction, which prevents long-term disfiguring complications. Parents should receive education regarding the condition, their participation in its management, and prognosis of the condition. Healthcare providers should be aware of the relationship between congenital torticollis and its impact on the child's gross motor development. A paediatric team should follow the child until there is a complete resolution. With proper therapy from a collaborative interprofessional team, most children have a good outcome.

Congress Abstract – L101

Clinical-Ecographic Particulars In De Quervain's Tenosynovitis

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Abstract: Introduction: Quervain's syndrome is the most common trend concerning the wrist and is most commonly seen in patients with activities that require overloading the fist in ulnar deviation or repeated use of the police. In recent years, the creation of technology by musculoskeletal ultrasound has led to a growing interest in the evaluation of the wrist. Methods. The following were studied: anatomy, etiopathogenesis, clinical manifestations, paraclinical examinations and treatment of Quervain's syndrome in the literature. Among the paraclinical examinations, the emphasis was focused on ultrasonography, an emerging technology that can be used in the diagnosis of Quervain's disease, performed at the Techirghiol Spa and Recovery Sanatorium. Results. The pathology presented is more common in women, being an inflammatory condition that targets the first compartment of the extensor tendons with clinical manifestations in the radial styloid. The symptoms of Quervain syndrome consist of pain with insidious onset on the radial dorsal face of the wrist, functional impotence, edema on the dorsal face of the radial region and sensitivity to palpation. The diagnosis is based on clinical examination (Finkelstein test) and paraclinical examination (musculoskeletal ultrasound and MRI). Treatment can be conservative (minor/medium forms) and surgical (severe forms). Conclusions. The diagnostic and therapeutic approach to Quervain's disease is complex. Diagnosis is supported on the basis of clinical manifestations and confirmed by ultrasound examination, which is a cheap, non-invasive, efficient and fast, that highlights the structural changes in the level of the first compartment of the extensor tendons.

Congress Abstract – L102

Myofascial Pain Syndrome – A Contemporary Conundrum

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Abstract: Introduction: : Myofascial Pain Syndrome is a clinical condition involving chronic musculoskeletal pain in a well-defined area. More than 90% of the human population has suffered from muscle pain at least once in their lifetime, but in less than 25% it becomes chronic. It is the main reason for addressing a clinical evaluation and for medical leaves. Its main characteristic and condition for diagnosis is the myofascial trigger point (MTrP). It is intensively studied but still no exact cause or method of treatment has been developed. Objectives: This is a presentation aiming to bring up to date information about the diagnosis, evolution and means of treatment of one of the most frequent pathologies in the modern world. Method: Use of data base Elsevier, Scopus, ScienceDirect, SpringerLink Biomedicine, Web of Science, PubMed literature related to Myofascial Pain Syndrome, succinct presentation in PowerPoint.

Key words: myofascial, pain, syndrome, trigger point

Congress Abstract - 103

Benefits Of Spa Hydrotherapy On Musculoskeletal Rehabilitation

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Abstract: Introduction: Chronic low back, hip and knee pain are leading causes of global disability. Because the life with pain is difficult, the general body function and the quality of life are low and patients seek out many medical services. Aim of the study. To try to highlight the importance of nonpharmacological, rehabilitation approaches of joint pain including water-based exercises and spa therapy. Material. Three months follow-up study. The subjects (n=69) were organized in two study groups: hospital outpatients and spa therapy patients. Pain was measured by (1-10) Visual Analogue Scale, self reported disability by WOMAC function section questionnaire. Anxiety, self efficacy and quality of life were measured by standard instruments. A detailed musculoskeletal clinical exam was performed in all patients. Medical interventions in the rehabilitation facilities were: education, pain management, electrotherapy, massage, muscle strengthening, coordination and balance exercises in both groups, and water-based therapy and spa therapy in the spa group. Subjects exam was performed at admission, at the end of rehabilitation treatment and at three month. Results. Pain relief in both groups, better in the spa group, better function in both groups, a better quality of life (due to better sleep, wellbeing, and function) which remained better at 3 months in the spa group and provided a better function for occupational tasks. Conclusions. The results of our study are in line with other studies in the literature that suggest the effectiveness of creno-balneotherapy for a number of chronic musculoskeletal disorders in terms of pain, functional limitations and even quality of life. We consider that the better and more lasting treatment results in the spa group were due to balneotherapy and physical exercise in the salted, sulfurous water from Sarcău, Bihor county, as well as removal from the daily environment and the holiday that changed the psycho-affective structure and maybe even the pain threshold.

Key words: joint pain, function, rehabilitation therapy, balneotherapy.

Congress Abstract – L104

FUNCTIONAL MOVEMENT REHABILITATION VERSUS NURSING IN SENIOR ELDERLY PATIENTS

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Abstract: Introduction: Older persons are heterogenous with aging and might be robust and independent are frail and dependent. Recent statistic estimate that people aged 65 and over are expected to live almost 50% of their remaining lives with a limiting long-term physical or mental health condition. Function and quality of life may deteriorate drastically after a fall in older peoples and do not recover to their previous level of mobility. Aim of the study. To understand care and support needs or rehabilitation and nursing in posttraumatic older persons with mental health limitation – impaired cognitive function. Material. The subjects (n=19), mean age 77,2 years, were hospital in-patients referred to rehabilitation department after a posttraumatic fracture (hip, shoulder, ankle) orthopedically treated. Data collected: demographic data, functional status (level of fitness and efficacy in performing activities of daily living and instrumental activities of daily living) and care needs before falling, patient history for concurrent illnesses, medication in use, other falling risk factors (intrinsic factors). Physical, biological, mental health (by a psychologist) exams were performed. Frailty was assessed by Clinical Frailty Scale. Rehabilitation objectives and interventions along with care needs were established. Results. Prior to fall all patients were with ambulation preserved, but 5 patients were total independent, 8

patients lived alone but they were helped with a part of activities of daily living, and 6 patients needed permanent care at home or in nursing homes. 6 were receiving antidepressants and 7 were registered with different grades of dementia. 10 were able to manage finances and 14 were able to use a mobile telephone. Concurrent illnesses were mainly cardiovascular diseases and diabetes mellitus. On Clinical Frailty Scale patients ranged from 1 to 7. After trauma and trauma treatment cognitive function altered in most patients, high level of anxiety being present in those with preserved cognitive function. Rehabilitation interventions were useful for regaining locomotor functional independence for a part of patients but those with impaired cognitive function became totally dependent of care and unable to manage home alone. Conclusion. It is difficult to distinguish between rehabilitation and nursing the old people after an traumatic event. Arises the importance of developing care models and support services based around the actual needs of older people.

Key words: Older people, trauma, rehabilitation, care and support

Congress Abstract – L105

Emerging Marketing Strategies For Promoting Spa Tourism Destinations

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Abstract: Introduction: In the last decades, wellness tourism has experienced crucial transformations and challenges. The purpose of this article is to analyse the factors that create the tourist expectations for health treatments as well as tourist attractions and to design a conceptual marketing model, that will determine new marketing strategies for promoting wellness destinations. The analysis reaches two perspectives, namely the consumer experience and the service offer. The worldwide disruptive changes in the tourism industry have undoubtedly shifted the consumer behaviour in the last 20 years. As a result, public and private service providers were forced to adjust their product, together with their sales and marketing strategies. This article reviews different approaches along the years and proposes a structured model for enhancing marketing strategies focused on consumer behaviour. As a result of the analysis, service providers involved in wellness tourism can employ the proposed marketing model so that they can reach, engage and create customer loyalty.

Congress Abstract – L106

Innovation Management In The Industry Of Wellness And Spa

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Abstract: This paper aims to assess innovation management in wellness tourism, in the present international context. The analysis of management innovation is approached from the following perspectives: leadership competences, organisational structure, technological development, human resources and innovation process, taking into consideration to complexity of this field, where medical and touristic management meet. Management innovation should consider multiple layers of the business environment: entrepreneurs, small

businesses, local authorities, destination management organisations, all of them play an essential role in the development, sustainability and profitability of a wellness destination. Nevertheless, innovation at management level should also focus on the customer motivation, expectations, quality of experience in comparison with the existing offer. The outcome of the analysis presented in this article can be a valuable source of information to create a valid model of management and technological innovations that would result in customer satisfaction and increased profitability.

Congress Abstract – L107

Iatrogenic Infection After Intraarticular Infiltration- Case Presentation

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Abstract: Introduction: Vertebral osteomyelitis is a serious medical condition that can result in permanent joint dysfunction. This is a case of a 67-year-old man who underwent therapeutic intraarticular steroid infiltration, for low back pain, and subsequently developed vertebral osteomyelitis. Methods: Patient 67 year-old, with a history of spinal osteomyelitis (15/06/20, arrived at UPU Medgidia complaining of pain radiating from the right lumbar area to the right hip, right thigh, and right inguinal region, functional impotence, fever, and chills that began about a week earlier. He was transferred to the Constanta Emergency County Clinical Hospital, "St. Andrei", after numerous interdisciplinary consultations, where he underwent clinical, paraclinical, and imaging examinations. The hospitalization diagnosis was necrotic fasciitis in the right lumbar region and gluteal region. Results: Necrotizing fasciitis is a rare, potentially fatal, tissue infection involving the rapidly progressing subcutaneous fat and fascia. Early diagnosis, use of antibiotics, and debridement are essential. The causative organism can be aerobic, anaerobic, or mixed. The most common pathogens are Streptococcus and Staphylococcus aureus. Risk factors include immunosuppression, diabetes, trauma, and surgical infection. Conclusions: Even though side events are uncommon, intra-articular steroid injections can result in infections that are fatal. Furthermore, there is still disagreement regarding these injections long-term efficacy. For use with injections of steroid, we advise putting in place precise rules for clean technique. Given the increased risk of infection in immunosuppressed patients, thorough sterile technique may be required. It is important to conduct more research on the frequency of adverse outcomes in immunosuppressed individuals following such injections. Given that many patients receiving these injections may also be on immunosuppressive medications, such as disease-modifying antirheumatic drugs (DMARDs) or chemotherapy, the practical implications of such trials could be extremely important.

Congress Abstract – L109

Integration of medically-exempt students in the physical education class by implementing a quiz application created according to the school curriculum

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Abstract Background: Considering the increasing number of students that are medically exempt from physical education classes, it is imperative to find solutions that are centered on their needs. *Purpose:* To design a quiz

app that can solve the problem of assessing exempt students and help their active and conscious integration and participation in the physical education class. *Materials and method:* Before designing and writing the application, a preliminary study was carried out based on a questionnaire distributed on the Google Forms platform to 84 secondary school teachers of physical education in the counties of Galati, Braila, Buzau and Tulcea. The questions were structured in order to provide us data about the actual working time in the lesson of a medically exempt pupil, his/her involvement or non-involvement in the subject, the distribution of working time on class segments, the provisions of the education law in relation to the exemption from effort, etc. Our contribution to this research consists of a quiz-type application, unique at the national level, which can be successfully implemented in the physical education class for medically-exempt students. During the construction of the application, the content of the current school curriculum for grades V-VIII was included in 160 questions for each content area, with multiple-choice answers and images processed according to the content in the curriculum. The application can be accessed by the exempt student regardless of his/her diagnosis, depending on the grade level, subject taught and topic of interest. The app provides an evaluation after accessing the session and contains a folder for information purposes only. *Results:* the questionnaire offered relevant data on the issue of integrating the medically-exempt student in the physical education class, showing that: the medically-exempt student participates in the category between 0 and 5 minutes (50% of teachers) and between 5 and 10 minutes (38% of teachers); the medically-exempt student participates only in the first segment (44% of teachers) - 22% answered that in the first and last segments of the lesson, which means that, if we approximate the time allocated to the two components, the student does not exceed 5-8 minutes of active participation; 56% of the teachers interviewed state that students do not participate actively and consciously in the physical education class, and 94% consider that other methods of stimulating interest are needed for those who are exempt; 48% of the teachers confirm that students may have temporary exemptions, which reinforces the idea that we must find solutions so that during the period of medical exemption, the student be at least interested in acquiring the theoretical knowledge that will fundamentally help him/her when s/he becomes fit for making effort. *Conclusion:* The implementation of the quiz application among students exempted from the physical effort in the physical education class stimulates the students' interest in accessing the program content, makes them participate actively and consciously. Thanks to the facilities of the application through the possibility of self-assessment in real-time, and ensures the acquisition of theoretical knowledge through the possibility of evaluation on work sessions in real-time.

Keywords: medically-exempt students; integration; assessment; curriculum; quiz application;

Congress Abstract – L110

Low Back Pain Diagnosis And Management – A Permanent Professional Challenge

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Abstract: Introduction: Being very frequent, it is considered that low back pain (LBP) has been the leading cause of years lived with disability since 1990 and remains a significant global public health concern. Not always with clear pathoanatomical cause, the diagnosis and management of LBP remains a challenge for the medical team. Material. We present the cases of two female patients, in their 6th decade of age, highly educated, referred to rehabilitation department for back pain, more intense in the low back. The history of the actual back pain episode is more than two months and low response to pain medication. The illness history revealed colon cancer in one patient, osteoporosis in the other, and episodes of back pain in both. Weight loss in the recent months in both. For diagnostic purpose, clinical, biological and image exams were performed. Results. Contrary to the expectations, the patient with colon cancer history and treatments had myofascial pain and a specific low back pain due to herniated disc, degenerative arthritis, while the other patient, along with

osteoporosis had a red flag disorder, spinal ribs and ilion metastasis. The primary neoplasm could only be diagnosed by bone biopsy. Conclusions. 1. Even if less than 1% of chronic LBP can be linked to malignancy, for diagnostic purpose, the presence of chronic LBP along with LBP red flag signs obliges us to increase medical vigilance. 2. A misleading problem as in our patient case: lesions with an aggressive behavior in the chest, abdomen, or pelvis may disseminate by direct extension and invade the spine while the patient remains asymptomatic.

Key words: low back pain, diagnosis, red flag

Congress Abstract – L111

Musculoskeletal Pain In Obese People With Postural Misalignment

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Abstract: Introduction: Overweighted and obese people with a body mass index (BMI) lower than 40 remain active and fulfill their occupational tasks despite their body mass. In obese individuals, body geometry is modified by the increased mass of body segments and the increased abdominal fatness contributes to increase lumbar lordosis, a possible start point for postural misalignment and even pain. Aim of the study. To identify the sources of musculoskeletal pain and the possible correlation with postural misalignment. Material. We performed an observational study which included 38 active subjects, mostly women (81,57%), mean BMI 35,6, referred to rehabilitation department for musculoskeletal pain and dysfunction. Data collected were: demographic data, occupational tasks, type of travel (active, passive), regular physical exercises (number of hours/week), subjective complaints, level of pain (on 0-10 Visual Analogue Scale) postural evaluation, palpation for identification of tender points, muscle contractions and trigger points, joint range of motion and flexibility tests, muscle functional testing and balance and coordination tests. Results. The sites of pain in order of frequency were: low back, upper back, knees, feet, shoulders, hips, elbows. The mean level of pain: 5,8 on VAS. Postural misalignments; hyper lumbar lordosis associated with anterior pelvic tilt, hyper thoracic kyphosis, rounded shoulders, forward head posture, genu valgum and pronated feet. Tender points: pes anserinus, tensor fascia latae bursae. Contracted muscles +/- trigger points: quadratus lumborum, hamstrings, upper trapezius, levator scapulae, pectoralis major. Outer core muscle testing: leg lowering test below average and curl up test fair to good. Deep squat testing (Functional Movement Screen) showed compensation in most of the subjects. Conclusions. The presence of pain and dysfunction along with postural misalignment proves that it has been triggered the cumulative injury cycle and its finality will be premature joint aging, an increase fall risk with consequent body and health damage. In order to limit the pain, to preserve the musculoskeletal function and a good quality of life arises the need for early postural correction and muscle balancing kinetic training.

Key words: obesity, skeletal misalignment, pain, function.

Congress Abstract – L112

Benefits Of Spa Hydrotherapy On Musculoskeletal Rehabilitation

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Abstract: Introduction: Musculoskeletal recovery in patients with chronic dyspnea includes complex program and it's main objective is to prevent the physical deconditioning of the patient beyond the limit imposed by

the basic suffering. The treatment is designed according to the individual needs of each patient, using therapeutical methods aimed to increase physical capacity, regaining autonomy and socio-professional reintegration, obtaining an increase in the quality of patient's life. Methods: The study of the paper is prospective, which took place in the Municipal Hospital Dr. Pop Mircea Marghita, medical recovery department, between 01.01.2021-30.06.2022, comprising a number of 146 patients with musculoskeletal pathologies, who had effort dyspnea, using study sheets. Results: The study identifies the clinical-functional impact of recovery treatment on patients with chronic dyspnea, as well as defining the optimal parameters of recovery treatment with major therapeutic efficacy applicable in long term. Conclusion: Research on patients with chronic dyspnea demonstrates the definite benefits of recovery programs on patients' quality of life, by increasing exercise tolerance and increased knowledge about the disease and the prevention of exacerbations. **Keywords:** dyspnea, recovery treatment, quality of life

Congress Abstract – L113

General Benefits Of Cell Oxy Therapy

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Abstract: Introduction: A gadget called CellAirOne diffuses hypoxic air gas. Hypoxia has a variety of effects on the human body and brings about modifications that have an impact on health. Since ancient times, low oxygen air has been known to offer therapeutic benefits. Research that explains the mechanisms and corroborates the findings now confirms the observations. The use of intermittent hypoxic therapy is completely risk-free. To provide a comfortable and risk-free session, the gadget automatically changes parameters. Material and methods: In our study, we examined the outcomes of six patients' therapy after six to eight weeks. Results: We were pleasantly surprised by the results because they revealed an improvement in quality of life brought on by the treatment of migraine syndrome, an improvement in blood test results, it helped with weight loss, blood pressure control and an increase in effort capacity. Conclusions: The human body is exposed to a variety of impacts from hypoxia, and these changes can have an influence on anyone's health. We were surprised and delighted by the findings since they showed that treating migraine syndrome improved quality of life, blood test results, assisted with weight reduction and blood pressure control, and increased effort capacity.

Congress Abstract – L114

Further researches on neuro-functional status and evolution in chronic ethanol consumers with recent traumatic spinal cord injury

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Abstract: Post-traumatic pathology is increasing due to the knowledge of life and technological progress; and spinal cord injury (SCI) represents a complex problem due to the personal, family and social implications it produces (1).

Objectives The Neuromuscular Recovery Clinic of the Teaching Emergency Hospital "Bagdasar-Arseni" (THEBA) is the National Reference Center in the sensory-motor recovery of patients with SCI. The experience

of the numerous cases treated, confronted us with the surprising observation of clinical evolutionary differences in patients with a history of chronic ethanol abuse, compared to those with balanced dietary habits regarding the consumption of ethyl alcohol and we try to statistically study these observations.

Methods With the approval of the hospital's Ethics Commission (no. 35517/25.11.2015), we carried out a research of the clinic's archive in the period 01.01.2005 - 01.06.2022, related to the doctoral thesis "Investigations regarding the consequences of chronic ethanol impregnation in the evolution of spinal cord lesions in patients with spinal cord injury".

Results and Conclusions In the present paper we will present the surprising results of the statistical analysis (performed with the help of IBM SPSS Statistics v22 and MS Office 365 Excel) of 1057 patients (with and without ethanol addictions) victims of SCI and treated in the Neuromotor Recovery Clinic of THEBA, in the acute and subacute post-traumatic phases.

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Congress Abstract – L115

Vision Impairment And Posture Control - Is There A Connection?

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Abstract: Introduction: (e.g., cerebral palsy), also an association between scoliosis and vestibular troubles is suspected, but not yet proved beyond doubt, but no association between the visual and vestibular systems and idiopathic scoliosis has been investigated yet. Could there be any connection between the two? Objective. To determine if children who are visually impaired and/or have a minor peripheral vestibulo-ocular syndrome have a higher rate of spinal deformity by checking the literature. Methods. Use of data base Elsevier, Scopus, ScienceDirect, SpringerLink Biomedicine, Web of Science, PubMed literature related to vestibular, visual impairment and spine deformity, succinct presentation in PowerPoint.

Key words: visual impairment, spine deformity, vestibular impairment

Congress Abstract – L116

PUBLIC HEALTH AND BORDER SECURITY MANAGEMENT

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Abstract: Some of the most well-established public health policies in border management are built on an effort to decrease the importation of infectious diseases. The volume, speed, and convenience of today's travel present new challenges to cross-border disease control and point to the need for innovative, systemic, and multi-sectoral approaches. Migration and mobility are increasingly acknowledged as predictors of ill health and risk exposure. In addition to health transportation authorities, multisectoral interventions involving border management authorities, law enforcement, the military, trade, and commercial actors are required to successfully enable disease prevention, detection, and control.

Congress Abstract – L117

PUBLIC HEALTH MANAGEMENT CHALLENGES, PUBLIC HEALTH POLICIES AND HEALTH MANAGEMENT SERVICES AND THE CURRENT SECURITY CONTEXT

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Abstract: Public health has expanded its scope over the past century to include areas such as the promotion of healthy lifestyles and the control of non-communicable diseases. This has led to the overlap between the public health sector and the healthcare industry. A clear connection to a reform process, widespread stakeholder ownership and participation, and the availability of technical assistance for both the assessment itself and the subsequent prioritization process required to make specific policy recommendations were all essential components of a successful assessment, understood as the creation and implementation of evidence-based public health reforms. Only if actors at the national and regional levels are given the chance to contribute to the development of the final strategy will it be a true reflection of these contexts, needs, and objectives. The level of participation in this process can be understood as a proxy for the level of support that the final product will receive.

Congress Abstract – L118

PUBLIC HEALTH AND CIVIL MILITARY MISSIONS

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Abstract: It is crucial to identify pathways for partnership well before a response to a health emergency is necessary in order to ensure effective civil-military health collaboration that supports health emergency preparedness interventions needed to combat current or potential threats and for longer-term health security capacity-building. Lessons from military health services' recent participation in responding to natural disasters, chemical, nuclear, or radiological accidents, and disease epidemics are identified in the framework, along with connections to public health emergency operation centers and emergency medical teams. The establishment of a strategic collaboration plan for health emergency preparedness, acknowledging differences between the public health sector and military health services, and identifying technical areas for collaboration based on the national core capacities for health emergencies are key elements for effective civil-military health collaboration for the development of national core capacity to prevent, detect, respond to, and recover from health emergencies. Consequently, fostering and executing civil-military health collaboration and capacity building for improved health emergency prevention, preparation, response, and recovery.

Congress Abstract – P1

ROLE OF VITAMIN D IN MOBILITY AND REHABILITATION OF ELDERLY WITH NEURODEGENERATIVE DISORDERS

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Abstract: Neurodegenerative diseases have proven underlying mechanisms closely associated with cellular oxidative stress and accumulation of toxic proteins. Vitamin D has been suggested as possessing a neuroprotective role.

Methods: A recent literature review searched Pubmed for data published in the last 5 years, based on relevant keywords.

Results: More than 190 recent articles were identified on the relationship of vitamin D and neurodegenerative disorders, but only 21 works also included data on mobility or rehabilitation in elderly. Deficiency of vitamin D was associated with abnormal neuronal functioning in neurodegeneration-based brain disorders (Alzheimer's disease, Parkinson's disease, Huntington's disease, Amyotrophic lateral sclerosis). Although not consistent across trials, we found data regarding therapeutic activity of vitamin D in Parkinson's disease by antioxidative and anti-inflammatory activity, as well as a preventative role in amyloid beta and tau pathology. Vitamin D action is essential for bone homeostasis - strong data support a beneficial effect of vitamin D supplementation in elderly: on bone mineral density and fractures, improvement of late stages of fracture healing and increasing the success of rehabilitation therapy during the first 3 months poststroke. Some research found that its supplementation may reduce neuronal injury, neurotoxicity and oxidative stress

Conclusions: We found evidence showing that vitamin D deficiency is associated with disability in activities of daily living, mobility, cognitive and objective physical functioning. Further data is needed to address the role of vitamin D as a biomarker influencing the clinical management of neurodegenerative patients, or the importance of its supplementation.

Keywords: vitamin D, mobility, rehabilitation, neurodegenerative diseases, elderly.

Congress Abstract – P2

FLAVONOIDS USE FOR THE PREVENTION AND THERAPY OF NEURODEGENERATIVE DISEASES IN ELDERLY- FOCUS ON FUNCTIONAL PRESERVATION AND REHABILITATION

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Abstract: Objectives: Flavonoids neuroprotection include mechanisms such as antioxidant, antiapoptotic, antineuroinflammatory and modulation of various cellular and intracellular targets. In neurodegenerative diseases blood- brain barriers (BBB) breakdown is an early biomarker of human cognitive dysfunction, therefore brain accessibility of flavonoids is a challenge for their potential therapeutic use.

Methods: This review emphasizes on current trends of research and development on flavonoids; a Google Scholar and Pubmed search was performed on this topic with focus on functional status and rehabilitation in elderly suffering from neurodegenerative diseases.

Results: Flavonoids are known for anti-oxidative, anti-inflammatory, anti-carcinogenic and neuroprotective effects. A number of phenolic compounds proved to interfere with the aggregation of the A β peptide by targeting multiple pathways in Alzheimer's disease (AD). Resveratrol induced a decrease of A β levels in cerebrospinal fluid and a reduction of neuroinflammation biomarkers in mild-to-moderate AD. Quercetin is destabilizing the oligomeric species of misfolded proteins, inhibiting the fibril growth. Luteolin showed able to mitigate pathogenic AD mechanisms, including neuroinflammatory processes and the impairment of brain glucose metabolism. Baicalin penetrates easily the BBB, preventing neuronal loss, with a neuroprotective function against ischemia-reperfusion injury through activation of γ -aminobutyric acid (GABA) signaling. Licorice flavonoid oil supplementation improved body balance control and may contribute to fall prevention, while pomegranate polyphenols enhanced cognitive and functional recovery after stroke.

Conclusions: Many recent studies have correlated flavonoid intake with the improvement of cognition, attenuation of neuroinflammation and oxidative stress. Possible challenges were identified but also strategies to overcome them using novel drug delivery systems.

Keywords: flavonoid, functional status, rehabilitation, neurodegenerative diseases, elderly.

Congress Abstract – P3

Ecografia musculoscheletală adjuvant diagnostic în managementul de recuperare al afecțiunilor traumatice și atraumatice la copii

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Abstract: Musculoskeletal ultrasound is a non-invasive, accessible method, both in acute and chronic situations, well tolerated by children and adolescents, which allows a quick assessment, the establishment of a definite diagnosis and the possibility of initiating the appropriate recovery program. Rapid identification of musculoskeletal conditions, with a decrease in the need for less accessible paraclinical investigations. Patients between 7 weeks and 16 years of age who were evaluated using a Logique E or GE Logiq E portable ultrasound machine. Sinding-Larsen-Johansson syndrome – most common in teenagers who practice performance sports (basketball, handball), with repeated pressure on the patella, which generates predominantly mechanical and periarticular pain, edema, which limits sports activity. Baker's cyst - common in boys between the ages of 4 and 8, with remission, most often, spontaneous. Heterotopic ossifications – calcifications at the level of soft tissues, which occur in patients who have suffered cranio-cerebral trauma, vertebro-medullary trauma, surgical interventions that required prolonged periods of immobilization, limb amputations. The developed bone formations are painful and if they are at the level of a joint, they cause its mechanical limitation. Encapsulated hematomas – the chronicity of hematomas secondary to some traumas, in the present case, after a perinatal trauma, in a 7-week-old infant, associated with an obstertical fracture of the clavicle. Muscle injuries of the hamstrings - most often found in performance soccer players, the predilection being in the biceps femoris muscle. Through musculoskeletal ultrasound, various pathologies could be quickly and accurately identified, the most frequent being secondary to sports/orthopedic trauma. In the presented pathologies, musculoskeletal ultrasound has proven to be an adjunct imaging tool for the accurate identification of lesions and the early establishment of a definitive diagnosis. Non-invasive method, reduced performance and waiting time compared to imaging techniques such as MRI, CT, well tolerated by pediatric patients..

Congress Abstract – P4

CEREBROSPINAL FLUID LEAK AFTER LUMBAR LAMINECTOMY-CLINICAL CASE

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Abstract: Laminectomy represents the partial or complete removal of the vertebral lamina in the context of a herniated disk. Cerebrospinal fluid leak is a complication of vertebral surgery, especially with lumbar localization.

MATERIALS & METHODS: Clinical case of a 43-year-old female patient who was admitted for intermittent lumbago. In personal history, the patient had a right L4-L5 disc herniation operated by partial hemilaminectomy, which developed a cerebrospinal fluid leak as an intraoperative complication. Initially, an attempt was made to repair the leak by using a dural substitute material. Within ten days, surgery was performed again by applying an epidural blood patch.

Through a research in medical databases, such as PubMed Central and Elsevier, a limited number of articles with the same casuistry were identified through related words such as: CSF, leak, occult dural tear, spinal surgery, blood patch.

RESULTS: The patient was diagnosed and treated accordingly and did not develop complications. The rehabilitation program was influenced by the appearance of a cerebrospinal fluid leak and the patient's return to the professional setting prior to the intervention was delayed. The multidisciplinary team ensured a complex care. The evolution of the case was favorable under balneo-physical-kinetic treatment in compliance with the discharge recommendations.

CONCLUSIONS: The management of this complication is controversial. It is necessary to describe a larger study sample in order to establish the optimal therapeutic behavior in the event of the appearance of a cerebrospinal fluid leak.

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Congress Abstract – P5

COVID-19, dynamic infection rate, a predictor for balneotherapy management

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Abstract: There are many mathematical that describe the epidemic of COVID-19 and more recently few of them are adapted to describe the variants of it, Omicron and Delta. Most of them are based on system of differential equations (ODEs) having as central point the number of compartments (that are translated mathematically in the number of ODEs) and the rate of infection (constant value or variable value, some on them having a dynamic behavior). The number of compartments are variable, depending basically of the social, geographic area, demographic characteristics and so on. The Infectious compartment (denoted by $I(t)$) can be split in other compartments I_k ($k=1:3$ or even more) that differentiate the different groups in the infectious stage, but also vaccinated or re-injected cases are also considered. The paper presents a possible connection between dynamic infection rate and condition of balneotherapy that can be used in management on number of patients that benefits from balneotherapy procedures.

Keywords: mathematical epidemic models; ODEs; infection rate; balneotherapy; management

Congress Abstract – P6

LUDOTHERAPY IN THE RECOVERY OF CHILDREN WITH NEUROLOGICAL PROBLEMS

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Abstract: Ludotherapy is a form of therapy used in the treatment of mental illnesses, using games as the main means. Currently, ludotherapy is the basis of all psychotherapy for children. It aims to bring the subject out of self-immolation by reminding him of his inner conflicts. Techniques can be individual or collective. Occupational therapy involves improving the quality of life of children with disabilities, focusing on their individual needs. The purpose of this paper is to present activities in the form of games in the occupational therapy room using various devices designed by occupational therapists especially for children with disabilities. The activities and devices have been designed to train functions such as balance and coordination, reaction speed and muscle strength. During occupational therapy sessions, a child will be able to develop essential skills for independent living, which helps him enormously both at a young age and as a future adult. A child's ability to take care of himself and become independent from his parents is considered an important basis for the development of cognitive, social skills and the formation of self-confidence. An autonomous child will have more courage to explore the world around him, to try, thus facing various situations or barriers/problems for which he will have to find the appropriate strategies to solve them.

Congress Abstract – P7

Mind Controlled Bionic Limbs – The Future of Prosthetics

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Abstract: Introduction. The human body as we know it is a miraculous machine and a masterpiece of the evolution. It has so many functions that it would require us days and days to talk about. However, a very important role is the relational one; the way we relate and connect to everything around us and a key part in this role are our limbs. And it is true that we do not think about it so much, because this is the normality; This is what we perceive as being normal when all of our four limbs are intact. But let's think a bit... what happens when something such as an arm is missing. Terrifying, isn't it? Every year lots of patients lose their arms in horrifying accidents and this is why in our present project we would like to put some emphasize on the anatomical and functional aspects of the human upper limb and why research regarding bionic hand prostheses is so important. Materials and methods. For our project we tried to search for some statistics data regarding the number of upper limb amputees and which types of amputations are most frequent. Also, we created a short review of the alternatives that upper limb amputees may have nowadays. The information we came across is that amputees can benefit from a few types of prosthetics ranging from anatomical non-functioning devices to mechanical replacements for their hands and lately to bionic arms that can mimic most of the functions of the upper limb. The former ones are usually made of rubber or latex and only help offer patients the normal appearance of the body, giving them some degree of psychological comfort, while the latter involve different kinds of electronics such as sensors, micro-controllers and expensive materials such as carbon fiber and titanium, but help the amputees regain most of the functionality and thus have a normal life again. Results and discussions. The fact is that typical prosthetic devices can have prices that go from a few hundred dollars to tens of thousands and dollars. Unfortunately, the cheaper ones only offer their users the normal anatomic aspect of the missing limb. Prosthetics that can give back some of the functionalities are represented by bionic prosthesis and have great manufacturing costs which make them inaccessible for the vast majority of patients. The good part, however, is that in the latest years technology has evolved pretty

much and now there are a few groups involved in the research of cheaper alternatives for bionic limbs – for example the OpenBionics Project. Conclusions. To sum up, it is very clear for us that there is a constant need of innovation regarding prosthetic limbs. For the moment technology has brought us to a place where we can replace a limb with a device that brings back most of the normal functionality for day today activities, but the costs are still high. Regarding mind-controlled bionics, we are still at the very beginning, but as they say...good things take time and we are looking forward to seeing improved functionality and more biocompatible materials in the future.

Congress Abstract – P8

Transcutaneous Electrical Nerve Stimulation – An Alternative way to Treat Primary Dysmenorrhea

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Abstract: Introduction. TENS (Transcutaneous Electrical Nerve Stimulation) has become a more and more common way to treat the pain in the past years. Although it is mostly used to treat neurogenic or muscular pain, in the past years its properties were extended to other kind of pain such as visceral pain or dysmenorrhea. Dysmenorrhea is a common situation for most women of reproductive age consisting in painful cramps before and during menstruation. It is usually managed with pharmacological agents such as AINS and contraceptive pills, but these methods also come with adverse reactions. Materials and methods. We performed a literature study of published recent reports regarding the use of TENS therapy to treat dysmenorrhea that was associated with a good outcome. Results. Treating dysmenorrhea with this alternative method has significantly reduced the short-term discomfort and also, women needed less pharmacological agents. Conclusions. TENS therapy is a good alternative for the women who do not want to take medications for dysmenorrhea due to side effects, also reducing the pains and the need for painkillers.

Keywords: TENS, Dysmenorrhea

Congress Abstract – P9

Knee Rehabilitation Procedures – Conventional and Alternative

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Abstract: Osteoarthritis is characterized by several articular dysfunctions with consequent anatomical changes in joint structures. Osteoarthritis affects 33.6% of the population over 65 years old and, surprisingly, 13.9% of the population over 25 years old. Worldwide estimates are that 9.6% of men and 18.0% of women aged over 60 years have symptomatic osteoarthritis, 80% of those will have limitations in movement and 25% cannot perform their major daily activities of life. There are many treatment options for knee osteoarthritis, meant to delay disease progression and restore functional capacity of the affected person: weight reduction, exercise, taping, ultrasound therapy, LASER therapy, acupuncture, extracorporeal shockwave treatment, electrical stimulation and different types of pharmacological options (NSAIDs, intraarticular corticosteroids or platelet-rich plasma injection. Weight loss reduces pain and physical disability in patients, and a weight loss of 0.25% per week should be achieved. Six sessions of mobilization with movement combined with exercise over two weeks improved disability, functional activities and pain at six months in people suffering from symptomatic

knee osteoarthritis. Physical therapy combined with Kinesio-taping reduces pain and improves function. Therapeutic ultrasound can relieve pain and functionally improve knee osteoarthritis patients in the short term. Laser therapy is a non-invasive treatment modality, which induces anti-inflammatory effects. Shockwave treatment is found to have modifying effects on cartilage and subchondral bone alterations in OA progression, as well as chronic pain and limited joint activities. Acupuncture has beneficial effect on pain relief and improves function activities. Electrical stimulation using a variety of methods was found to decrease pain intensity and improve symptoms. Corticosteroid injections provide a short-term reduction in OA pain and act as an adjunct to key therapy for moderate to severe pain relief. The intraarticular platelet-rich plasma (PRP) injection has emerged as a good treatment for knee OA, showing better results in the long term than other treatment options.

Congress Abstract – P10

Assessment of the effectiveness of photobiomodulation therapy on humeroscapular periarthrititis by diffuse reflectance spectrometry

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Abstract: Humeroscapular periarthrititis is an inflammatory illness of the soft tissue surrounding the shoulder joint which can lead to significant impairment of the upper limb function. The conservative treatment consists of oral anti-inflammatory drugs and kinesiotherapy. As an alternative method, photobiomodulation therapy, widely used for the treatment of various musculoskeletal disorders, has also been recommended for the treatment of humeroscapular periarthrititis. The purpose of this study was to investigate the efficacy of photobiomodulation therapy in the treatment of humeroscapular periarthrititis.

Materials and Methods

Seven patients diagnosed with humeroscapular periarthrititis were included in this study. Each patient received photobiomodulation therapy using a diode laser system (635 nm, 15 mW). The power density was 16.31 W/cm² and the exposure time was set at 240 s. The procedure was applied daily for 3 consecutive days. The effect of photobiomodulation therapy was evaluated based on changes in the optical properties of the affected area measured before and after each therapeutic session using diffuse reflectance spectrometry.

Results

The results demonstrated that, after each laser irradiation session, photobiomodulation therapy induced an increase in diffuse reflectance of the affected shoulder. The stabilization of the diffuse reflectance values towards values close to those of normal tissues was noted after the third laser irradiation session when the reflectance values fell between (57-68) %.

Conclusions

In conclusion, the effectiveness of photobiomodulation therapy in the treatment of humeroscapular periarthrititis was quantitatively demonstrated based on variations of the measured values of the diffuse reflectance of treated tissues, proving it to be a therapeutic option for this pathology.

Congress Abstract – P11

Development of Hand Gripper Device for Rehabilitation Process

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Abstract:

Objectives: Hand rehabilitation activities require a continuous monitoring process to provide information about the results of rehabilitation at any time, for analysis by the therapist. The purpose of monitoring is to help the patient and therapist improve and customize the rehabilitation process in well-defined steps. Moreover, a simple and portable home rehabilitation device can help patients improve their daily rehabilitation activity. Studies on the rehabilitation process at home have shown improvements that promote the recovery of human movement, but existing rehabilitation devices are expensive and must be supervised by a therapist, which makes it difficult to use at home.

Methods: The development of this device involves the design and realization of a smart glove and an artificial grip with several fingers (Figure 1). The concept of this research is to design, develop, assist and measure a device that can continuously monitor the upper arms. The device works fully with the smart glove using the microcontroller system. This system can collect data, process, save and transmit to the computerized monitoring system.

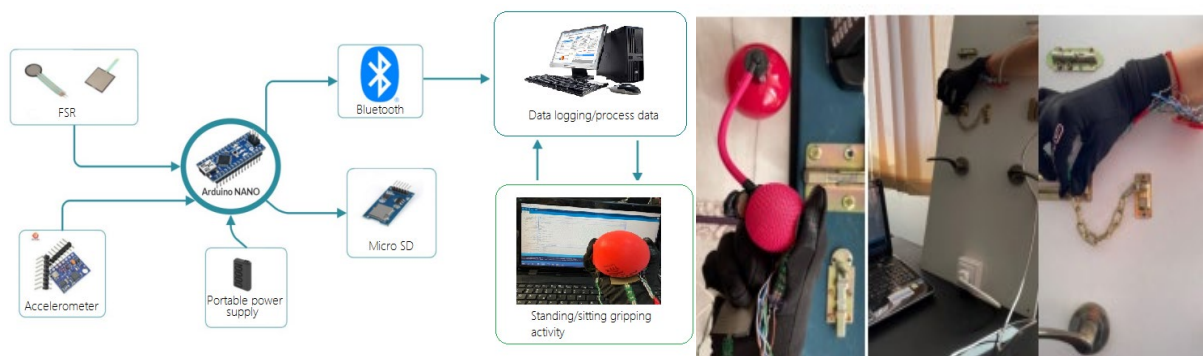


Figure 1. Functional block diagram and applications

Results: By attaching the FSR sensor (force sensing resistor) to the fingertips of the gripper, it will act as a detector that sends data to the microcontroller to inform the gripper is grabbing an object. It can be controlled the amount of deferent object generated on the grabbed object based on the resistance value generated by this type of sensor. The result shows that the FSR sensor can measure the performed of each finger (Figure 1).

Conclusions: The research work found that the developed application has a significant purpose in the hand gripper system and rehabilitation treatment. In addition, the glove and the Arduino based data recording system can be used to monitor and evaluate the patient suffering from stroke, Parkinson's and sports-related injuries.

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Congress Abstract – P12

THE BENEFITS OF HELIOTHERAPY AND MUD OINTMENT FROM LAKE TECHIRGHIOL IN PSORIATIC ARTHROPATHY

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Abstract: Humeroscapular peri-arthritis is an inflammatory illness of the soft tissue surrounding the shoulder joint which can lead to significant impairment of the upper limb function. The conservative treatment consists of oral anti-inflammatory drugs and kinesiotherapy. As an alternative method, photobiomodulation therapy, widely used for the treatment of various musculoskeletal disorders, has also been recommended for the treatment of humeroscapular peri-arthritis. The purpose of this study was to investigate the efficacy of photobiomodulation therapy in the treatment of humeroscapular peri-arthritis.

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Results

The results demonstrated that, after each laser irradiation session, photobiomodulation therapy induced an increase in diffuse reflectance of the affected shoulder. The stabilization of the diffuse reflectance values towards values close to those of normal tissues was noted after the third laser irradiation session when the reflectance values fell between (57-68) %.

Conclusions

In conclusion, the effectiveness of photobiomodulation therapy in the treatment of humeroscapular peri-arthritis was quantitatively demonstrated based on variations of the measured values of the diffuse reflectance of treated tissues, proving it to be a therapeutic option for this pathology.

Congress Abstract – P13

INTESTINAL MICROBIOME – AT THE INTERFACE BETWEEN HEALTH AND DISEAS

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Abstract: "All diseases begin in the intestine", Hippocrates said approximately 2400 years ago, nowadays there are more and more scientific studies that prove that the source of chronic diseases begins in the digestive tract. The intestinal microbiome consists of microorganisms that colonize the digestive tract, being responsible for the normal maintenance of metabolic and immunological functions, digestion and absorption of nutrients, it also creates a barrier against pathogens, synthesizes inhibitory substances for pathogens and prevents them from penetrating the intestinal wall. Genetic and immune factors predispose individuals to gut barrier dysfunction, and changes in gut microbiota composition and function are central to this process.

Material and method - Recent studies show that there are certain factors that can disrupt the intestinal barrier, leading to systemic inflammation. These factors led to the development of the concept of "leaky gut syndrome", which is the basis of the development and worsening of metabolic and autoimmune diseases. Understanding these mechanisms is a current topic of research in order to prevent, diagnose and treat many diseases. Each individual has an individual pattern of the composition and distribution of the microbiome, which varies according to different factors such as the type of birth, breastfeeding, diet, personal and environmental hygiene, stress, the use of antibiotics can change the composition of the intestinal microbiome.

Results and Conclusions - Dysbiosis is the imbalance of the microbiota with negative consequences for the host. The presence of high levels of pathogens is a form of dysbiosis that can lead to disease. Studies in recent years demonstrate that many chronic diseases such as inflammatory bowel diseases, diabetes, autoimmune diseases, obesity, have, among other factors, intestinal dysbiosis. As the gut microbiota is believed to contribute to various pathogenic pathways, there is a growing number of studies linking changes in the healthy microbiome to the development of a number of neurological diseases, including those with neurodegenerative etiology, as well as certain neuropsychiatric disorders. Understanding these mechanisms is a current topic of research in order to prevent, diagnose and treat many diseases..

Congress Abstract – P14

Acupuncture – Method Of Treatment For The Patients With Cervical Disc Hernia

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Abstract: Introduction: Acupuncture is a therapeutic method originating in China, based on reflex action, which consists of pricking the skin at certain points of the body with fine metal needles. Acupuncture, with a history of several thousand years, has an important place among the means of influencing the health of the body through natural methods. Acupuncture complements modern medicine, but does not replace it, making use of the body's own healing resources, without bringing any foreign element for this purpose. Acupuncture can be applied in order to restore some deregulated functions, influencing the body's reactions to the disease, or it can be applied symptomatically, addressing a symptom such as pain. Methods. A comparative study of patients diagnosed with cervical disc herniation was carried out within the Techirghiol Balneal and Rehabilitation Sanatorium. The patients followed a rehabilitation treatment consisting of hydrokinetotherapy, kinetotherapy, mud baths, and physiotherapy. Thus, a group of 12 patients received a complex rehabilitation treatment and group B consisting of 12 patients performed the same therapeutic rehabilitation plan but also 4 acupuncture sessions during hospitalization. Assessment was performed at the beginning of treatment, at the end of the last day of treatment and post-observationally 6 months after discharge. The patients were monitored by the attending physician through the clinical observation sheet, VAS scale, EQ5D scale, Neck Disability Index. Results. A decrease in pain was observed in group B, patients from the first session by 20% and by 40% after the second acupuncture session. At 6 months, a significant increase of 50% was observed in the analysis of the quality of life, but it was not possible to statistically establish a value between the two groups studied. It was not possible to statistically analyze a conclusive value between the two groups in terms of the Neck Disability Index, but an increase of 30% could be observed in all patients after hospitalization at 6 months. Conclusions. Rehabilitation treatment is the main treatment of patients diagnosed with cervical disc herniation that does not require surgical intervention. Acupuncture is not the first treatment method in reducing pain from cervical disc herniation but it can be combined in a larger therapeutic method. The quality of life improves considerably in patients who have undergone a complex rehabilitation treatment. Long-term studies of patients with cervical disc herniation undergoing acupuncture treatments are needed.

Congress Abstract – P15

Strategies for the therapeutic approach to obesity in presenescence

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Abstract: Research on the pathophysiology of presenescence processes has gradually led to an understanding of the mechanisms of the onset of various pathologies during this period. The transition period (presenescence) is the age between 45 and 59 years and should be understood as a normal period in ontogeny. Recent studies show that physiological and pathological ageing are different, leading over time to an irreversible disruption of homeostasis. The aim of the work is to address therapeutic strategies (nutrition education, behavioral therapy, physical activity programs), leading to the awareness of a group of people, who present different degrees of obesity. Thus, we aim to promote a healthy lifestyle and the adoption of responsible behaviour by the group proposed for study. By implementing model therapeutic programmes for this age group, we want to achieve the following actions and objectives: awareness of necessary dietary rules, maintenance of proprioceptive capacities to enable ADLs, maintenance of a normal weight status. Achieving them will enable further improvements in education and health in this age group.

Congress Abstract – P16

Study on the influence of the bioclimate on the health condition of the people in the Metropolitan Area of Suceava in the period 2019-2020

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Abstract: Introduction - Bioclimate represents the set of processes and phenomena that characterize the average conditions of the atmosphere in a certain place, by acting through its biometeorological sequences (through weather conditions) at any moment, on living beings, but also on the non-living matter. The weather as a sequence of the climate and the bioclimate is a factor for the existence of life, for comfort, but in certain conditions (when the tolerance limits of the body are exceeded), it can become a factor of discomfort or even a pathogen. **The purpose** of this paper is to analyze how the elements of the bioclimate can influence the health of the people in Suceava county. **Material and method** – The study was conducted in a period of 2 years (2019-2020) and involved 18704 persons consulted at the practice of the General Practitioner. In order to conduct this study, it was possible to count a variable number of 731 responses for each day, from different respondents who lived in the Metropolitan Area of Suceava, and in the end there was a number of 9321 valid answers. **Results and discussions.** After filling in the questionnaire, it was found that the weather can influence the physical and mental health, as well as the social relationships. The biometeorological indices were calculated (THE - the thermohygrometric index, Pr - the index of the cooling power of the wind and PET - the index of the equivalent physiological temperature) according to the temperature of the air, its humidity, the speed of the wind, the solar radiation. The quality of the air was determined by means of NO₂, SO₂, CO, O₃ and PM10. The obtained results enabled us to identify the correlations between the dynamics of the weather, the quality of the air and the health conditions of the population in this area. **Conclusions** - The current study focuses on the influence of the weather elements on the health conditions of the studied population. The temperature of the air, its humidity, the speed of the wind, the quality of the air in the atmosphere can accelerate the evolution of some diseases or aggravate the existence of others. The action of the environmental factors can be found over time on all the organs involved in ensuring a suitable viable and functional status.

Key words: bioclimate, environment factors, bioclimatic indexes, health condition

Congress Abstract – P17

The Benefits of Zumba Fitness in Rehabilitation

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Abstract: Introduction. The Zumba program is a Latin-inspired, dance-fitness class that incorporates Latin and international music and dance movements, creating a dynamic, exciting, exhilarating, and effective fitness program. A Zumba class—known as a Zumba Fitness-Party™—combines fast and slow rhythms that tone and sculpt the body using an aerobic/fitness approach to achieve a unique blended balance of cardio and muscle-toning benefits. Materials and methods. We performed a study regarding the different training techniques for patients in need of rehabilitation. Cardio respiratory training impacts the cardiovascular system and respiratory system. It primarily utilizes the aerobic system for energy, meaning “with oxygen.” Muscular fitness is made up of two elements: muscular endurance and muscular strength. Flexibility refers to the ability to move your joints through full range of motion. Results. The Zumba program integrates some of the basic principles of aerobic, interval, and resistance training to maximize caloric output, cardiovascular benefits, and total body toning. The dance movements are easy-to-follow steps that are customized for each patient. Conclusions. . The Zumba program provides an efficient training technique regarding rehabilitation in different sort of phisical and psychological issues and allows the participants to achieve the highest level of results possible.

Keywords: Zumba Fitness, Rehabilitation

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Cardiac Rehabilitation After Acute Coronary Syndrome In Geriatric Patients

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Abstract: Introduction: Cardiovascular rehabilitation is proven to have positive results in terms of reducing cardiovascular risk, improving quality of life and functional capacity in patients with acute coronary syndrome. Elderly patients have increased cardiovascular risk, increased vulnerability and increased risk of complications after acute coronary syndrome. Although elderly patients are increasingly representative of the general population due to increased life expectancy, they are underrepresented in clinical trials and cardiovascular rehabilitation programs. Our goal is to perform an analysis of the benefits and characteristics of cardiac rehabilitation in geriatric patients. Methods: We analyzed data from the recent literature, including various clinical trials and meta-analyzes that included elderly patients after acute coronary syndrome in cardiac rehabilitation programs. Results: In a study by Rodrigues et al., of 548 patients with recent coronary syndrome, 37% were elderly over 65 years of age. All patients, including the elderly, showed significant benefits from the cardiac rehabilitation program. Another study conducted in Lithuania by Beigiene and colleagues, including 63 patients, with a mean age of 72 years, distributed in three different cardiovascular rehabilitation programs, showed an improvement in all parameters of functional capacity. Conclusions: The early inclusion of all patients, especially the elderly, in cardiac rehabilitation programs after acute coronary syndrome, improves the capacity of effort and the quality of life of these patients.

Keywords: cardiovascular rehabilitation, acute coronary syndrome, functional capacity, elderly.

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Mineral waters - food and natural therapeutic factor

Peloids (therapeutic mud)

Climatology

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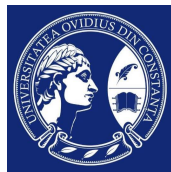
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