

2nd Annual Conference on
**ORTHOPEDECS, RHEUMATOLOGY
AND OSTEOPOROSIS**
April 15-16, 2019 | Milan, Italy

ORTHO CONGRESS 2019



**KEYNOTE FORUM
DAY 1**

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Ljudmila Stojanovich, J ortho Rehab Surg. 2019, Volume 3
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Ljudmila Stojanovich

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BIOGRAPHY

Ljudmila Stojanovich received her PhD in Medicine in 1999. She is the Scientific Director in the Bezhanijska Kosa, University Medical Center of Belgrade University, where she is currently a full Research Professor. She is an author of three monographs and of about 250 articles on various aspects of Autoimmune Rheumatic Disorders, published in international and domestic journals and in conference proceedings. She is the Editorial Board Member of *LUPUS an International Journal*. She is the member of number of International Projects, like of "The European Forum on Antiphospholipid Antibodies". She was an Invited Speaker for many lectures in Congresses and Symposia; Organizer and Chairman of many Seminars and Symposia; and Member of the Steering Committee of the "EULAR recommendations for the prevention and management of adult antiphospholipid syndrome". She is the EULAR Honorary Member. Her Impact Point is 300.14, and number of citations is 2.500.

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THE INFLUENCE OF PHYSICAL ACTIVITY ON THE QUALITY OF LIFE OF PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

Introduction: Because of the fact that Systemic Lupus Erythematosus (SLE) causes joint and muscle pain, fatigue, depression, obesity and osteoporosis, the very thought of exercising can be a challenge for patients.

Patients & Methods: This prospective study included 60 patients diagnosed with SLE in stable condition. A randomly selected group of 30 women had aerobic training on a bicycle ergometer for a period of 15 minutes, three times per week for six weeks, while the second group of 30 women did exercise for 30 minutes, three times per week during the same period. FSS (fatigue Severity Scale), Short Form 36 (SF36) questionnaire on the quality of life and Beck depression inventory (BDI) were analyzed at baseline and after 6 weeks.

Results: Fatigue was present in all patients (FSS score 53.8 ± 5.7 ; min 39, max 63) before starting the exercise. Fatigue was present in 11 patients (18.3%) after the physical activity while 49 (81.7%) patients did not experience it (FSS score 29.1 ± 7.8 ; min 18, max 45). Before starting the exercise the largest number of patients, 40 (66.67%) of them, was in a moderate depressed state while after physical activities the greatest number of patients, 37 (61.66%), had a mild mood disturbance. There are high statistical differences in values of all areas of quality of life questionnaire SF36 before and after the implementation of physical activity. A statistically significant difference was observed in terms of reducing the parameters

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of pain, general health and mental health in a group that had a physical activity on a bicycle ergometer evaluated by the SF36 questionnaire ($p < 0.05$).

Conclusion: Our study has shown that a continuous physical activity in SLE patients significantly improves their quality of life by reducing fatigue and depressive reactions without negative impacts on the activity of their disease.



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Ash Harkara, J ortho Rehab Surg. 2019, Volume 3
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Ash Harkara

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BIOGRAPHY

Ash Harkara is a Founder Director of VOLMO Pvt. Ltd., United Kingdom. He completed his PhD from Pune University, India. He completed his Postdoctoral Studies from school of EE, University of Leeds, United Kingdom. He has twenty years of experience in industry and academics. He has written number of papers in reputed journals and also presented papers in number of international conferences. Since last ten years he has been working in medical image processing and patient specific implants

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PERSONALIZATION OF MEDICAL IMPLANTS: DESIGN, SIMULATE AND 3D PRINT OF PATIENT SPECIFIC KNEE IMPLANT FOR TOTAL KNEE REPLACEMENT

Total knee replacement is the most effective treatment to relieve pain and restores the normal function in a diseased knee joint. The aim of this research was to develop a patient-specific knee implant which can be fabricated using 3D Printing also called as additive manufacturing techniques. 3D printing is an emerging technology and its use in Orthopaedics is slowly gaining acceptance. This technique makes it easy to manufacture patient specific devices/guides and instrumentation of any shape and size. The patient-specific technology improves on conventional of the shelf process by allowing considering each patients anatomical structure, shape and size. In this study patient specific knee implant design, simulation and 3D print is discussed. In particular we want to highlight the role of computer simulations in testing and optimizing patient specific device. Patient knee CT scan data was modelled in Image Sim software and 3D model was generated. This model was used as the base model to capture the outer shape of distal femur and proximal tibia. Full set of J curves of condyles were captured and then exported. These set of J curves along with other landmarks were imported in solid works and full implant for femur, tibia components and insert were designed. A detailed total knee-joint FE model was created in order to predict stress and strain at various flexion angles. Results from these simulations highlight-

ed some initial stress riser sites especially in femur component. The design was accordingly changed and simulations were run again to make sure that design changes were correctly done. Finally, the patient-specific knee implant was successfully built using additive manufacturing techniques

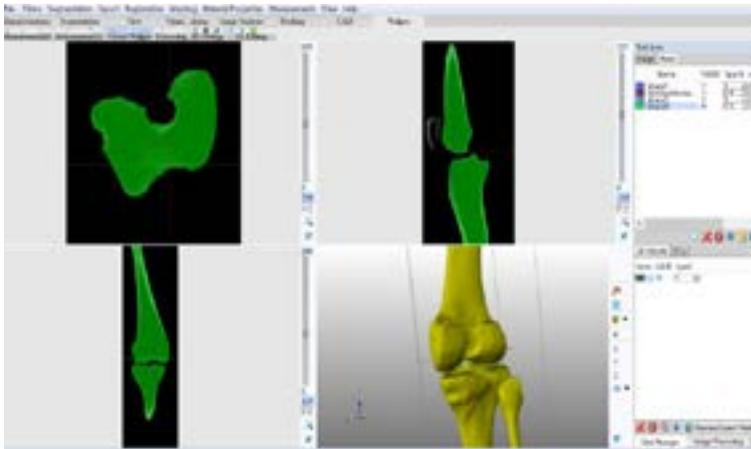


Figure1: Patient CT Scan data model in ImageSim Software



Figure2: New knee implant for TKR



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Maurizio Falso, J ortho Rehab Surg. 2019, Volume 3
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Maurizio Falso

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BIOGRAPHY

Maurizio Falso received his Degree of Medicine in 1999 and his specialization in Physical Medicine and Rehabilitation from the University of Medicine of Verona, Italy in 2004 followed by a post-specialization research on the management of spasticity and movement disorders at the Department of Neurological Sciences and Vision of the University of Verona, Italy by using botulinum toxin and baclofen pumps and analyzing motor patterns with video-surface EMG. He is a Professor at the Physiotherapist School of the Medicine University of Brescia, Italy and a past-member of the Italian Consensus Table on the use of xeomin in adult spasticity. In his career he also promoted the use of innovative dynamic carbon-kevlar custom made AFO (DAFONS), innovative postural devices in patients affected by neurological complex postural needs, the device treatment of idiopathic scoliosis by using an innovative dynamic spine brace called "BRIXIA" and the device treatment of gait disorders by using an innovative dynamic carbon kevlar foot insole called "PRODYNAMIC".

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HOW DOES A PERSONALIZED REHABILITATIVE MODEL INFLUENCE THE FUNCTIONAL RESPONSE OF DIFFERENT ANKLE FOOT ORTHOSES IN A COHORT OF PATIENTS AFFECTED BY NEUROLOGICAL GAIT PATTERN?

Five patients affected by different neurological gait pattern and volunteered to participate to this study were recruited. The comparative spatio-temporal and functional effect on gait pattern of 3 types of AFOs was investigated under 4 study conditions: without AFO or Free-Walk (FW); wearing a Codivilla spring; wearing a carbon unjointed AFO ("Toe-Off"); wearing an innovative carbon-kevlar dynamic joint DAFO (DAFONS=Dynamic Ankle Foot Orthoses with Neuroswing). In line with our rehabilitative model, patients underwent to a weekly treatment session, 80 minutes duration per session, for 4 weeks. Evaluation was made before (time T3= time of recruitment) and after our individualized rehabilitative treatment course (time T4=1 month from T3) by using: G-Walk sensor (by BTS) spatio-temporal measures in different gait performances; clinical/functional outcome measures (Modified Ashworth Scale or MAS for the affected upper and lower limb; Medical Research Council or MRC; orthostatic stability evaluation by using the Berg Balance Scale or BBS). A statistical insignificant change of MRC and MAS scales at time T4, with a significance trend outcome observed at the same time by using the Wilcoxon Signed Rank Test; a statistical significant difference between test duration (sec) by using Toe-Off vs DAFONS and by using Codivilla spring

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vs Toe-Off; a statistical significant increase of the stride length on the left side (% cycle length) by using DAFONS compared to Toe-Off for patient P1, P3 and P5 with a parameter decrease by using DAFONS compared to Codivilla spring and Toe-Off use for patient P2; a statistical significant correlation between BBS trend and test duration (sec) by using Codivilla spring at time T3 and T4; a statistical significant correlation between the BBS trend and the double gait support duration on the right side (% cycle) with number of left step cycles by using DAFONS at time T3 and T4; in a comparative post-treatment visual gait analysis a modification of each patient's static and dynamic postural assessment by using three different types of orthoses.



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Christos Kosmidis, J ortho Rehab Surg. 2019, Volume 3
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Christos Kosmidis

Alexandras Health Center, Greece

BIOGRAPHY

Christos Kosmidis is an orthopedic surgeon at Private office from 1987 to 2017. He is the Director of Orthopedics in primary health care center "Alexandras" 1st Health Division of Attica, Greece in general orthopedic and osteoporosis cases. He is a Primary health care physician at Department of Orthopedics and Osteoporosis in health care center "Alexandras" since 1993. He has almost 19 years of teaching experience as a Professor of Anatomy and Orthopedics for the Technological School of Paramedics (Nurses, physiotherapists etc.). He is the member of Hellenic Association of Orthopedic Surgery and Traumatology since 1986; Member of Hellenic Society for the Study of Bone Metabolism since 1997; Member of the Board as Secretary General from 2009 to 2012; Vice President from 2013 to 2014 and President of the Board of the Society from 2015-2016; Member of Hellenic Osteoporosis Foundation since 1997; Member of the Board as Secretary General from 2003 to 2009; International Society of Musculoskeletal and Neuronal Interactions since 1999. He completed his residency in Orthopedics from Athens University Orthopedic Clinic (KAT Accident Hospital of Athens) from 1983 to 1986. He completed his Residency in general surgery: Nautical Military Hospital of Salamis Naval Station from 1981 to 1982; Doctor of Medicine from University of Athens 1974 to 1980. He did his PhD in Fractures of atlas (C1)", Athens University, 1989. He attended more than 240 conferences since 1983, in Greece as a speaker and abroad, being in the Organizing Committee of ECTS 2011 in Athens. He is regular attendee of WCO-IOF-ESCEO, ECTS and ASBMR for the last 15 years, sometimes with an abstract or poster.

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"VERTEBRAL FRACTURE PREVALENCE AMONG PEOPLE TREATED FOR OSTEOPOROSIS IN GREECE: VERTEBRAL INTEGRITY ASSESSMENT STUDY-VERTINAS STUDY

Objectives: To assess vertebral fracture (T4 – L5) prevalence among people treated for osteoporosis in Greece and to evaluate the degree of accordance in diagnosis of fractures between radiologists and orthopedics

Methods: Patients receiving medication for osteoporosis were recruited via announcement by the Greek national media. Inclusion criteria: Age > 50 (both sexes); Postmenopausal status for females >2 years; Current >1 year use of medication for osteoporosis and lack of radiological vertebral assessment for >1 year; Exclusion criteria: Bone metabolic disease other than osteoporosis; secondary osteoporosis; inability to stand/walk; previous high energy vertebral fractures

Design: All patients completed short-form questionnaire indicating: Age, sex, current pharmaceutical treatment for osteoporosis, history of previous vertebral fractures and consensus in performing lateral spine (T4–L5) x-rays. Radiographs were evaluated for fractures by radiologists as usual and then by three orthopedic consultants according to the "Genant semi-quantitative method", blinded for the patient data.

Results: 1652 patients were recruited with properly filled questionnaires (age 50 – 102, mean 70,4); 1516 women (91, 8%, age 50 – 102, mean 70); 136 men (8, 2%, age 52 – 94, mean 74, 8)

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Current treatment: SERMS 1%, BPs 85, 7%, Denosumab 11, 6%, Strontium Ranelate 0, 2%, Teriparatide 1, 6%. Vitamin D: 40, 6%, Alfacalcidol: 8, 1%, Calcium supplements: 38, 6%.

History of vertebral fracture: 11, 1%; fractures were diagnosed in 25, 4% of the patients (the prevalence of vertebral fractures among people treated for osteoporosis in Greece. Among 419 patients actually found with fracture(s), only 98 (23, 4%) knew about the existence of the fracture(s). On the contrary, among the rest 1233 patients actually found without fracture(s), 86 (7, 0%) had declared knowledge about the existence of fracture(s) in their history. For 1289 patients (78%) out of the total 1652, orthopedics could read the opinion of the radiologist about the existence of fracture(s). In accordance with the diagnosis about the existence of fracture(s) between radiologist and orthopedic was achieved in 1088 patients (84, 4%).

Conclusions: Vertebral fracture prevalence among people treated for osteoporosis in Greece is 25, 4%; 76, 6% of people treated for osteoporosis in Greece, think they don't have fracture(s), although they do. According to the existence of vertebral fractures between radiologists and orthopedics in Greece is not very high (84, 4%).



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