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## FM 1

**Multidisciplinary rehabilitation in chronic lumbar pain: long-term effect on work status**

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Lumbar pain rests an expensive condition including direct and indirect costs. The most costly patients are them with a long sick-leave for more than 6 months, with increasing difficulties to bring them back to work. In this situation, a multidisciplinary group program has the best possibilities to work. When treating on the deconditioning situation there would be an increase in the return to work. The aim of this study is to analyze the return to work, considering the psychological modifications and the work status.

**Method:** We have studied the results of 300 of our patients that have accomplished a multi-disciplinary program and that have been followed over 24 months. The program contained physical training, occupational work hardening the hole in a cognito-comportemental approach. We have analyzed the relationship between to the work capacity and its correlation with different pain and psychological questionnaires.

**Results:** The work capacity, before inclusion and at 24 months after completing the program showed a clear increase, from 48% to 80.4% ( $p < 0.01$ ). Associated with this work capacity, we saw a real decrease in apprehensions and pain functioning. There were also a positive relationship between an increased work capacity and an decrease in different pain questionnaires, with an ODI from 36 to 14% at 24 months. The return to work was not associated to an increase in physical performances but in an decrease in apprehension.

**Conclusion:** In chronic low back patients, a multidisciplinary rehabilitation program, giving 72% that returned to work, with a global work capacity of 80.4%, has to be seen as a positive way to treat these patients. The correlation was presented on the psychological part, with less apprehension and also increased global SF 36 values. In fact an increase in body confidence rests the important factor in these functional re-education programs, more than direct pain release.

## FM 2

**Infection risk after orthopaedic surgery in patients with inflammatory rheumatic diseases treated with immunosuppressive drugs**

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**Objectives:** The influence of specific drugs on the risk of postoperative infection in patients with rheumatoid arthritis and other inflammatory rheumatic diseases (IRDs) remains unclear. This study examined the risk of postoperative infection in patients treated with immunosuppressive drugs (including biologics) undergoing different types of orthopaedic surgery.

**Methods:** All 50'359 cases of orthopaedic surgery performed in our hospital from 2000–2008 were included in this retrospective study. The primary outcome of interest was operation-related infection. Patients with IRD were compared with those with degenerative or posttraumatic disorders, and, in IRD patients, the effect of immunosuppressive medication, especially TNF- $\alpha$ -inhibitors and their preoperative management was examined.

**Results:** There were 422/50'359 (0.8%) operation-related infections: 373/47'887 (0.8%) in the degenerative/posttraumatic group and 49/2'472 (2.0%) in the IRD group (higher infection rate in the IRD group; OR=2.6, 95%CI 1.9, 3.5;  $p < 0.001$ ). In the IRD group, elbow and foot surgery had the highest infection rates. The risk of infection was significantly increased in patients taking multiple conventional disease-modifying antirheumatic drugs (cDMARDs) (OR=2.4, 95%CI 1.0, 5.7;  $p = 0.042$ ) or TNF- $\alpha$ -inhibitors (OR 2.6, 95%CI 1.1, 6.2;  $p = 0.027$ ). The risk of infection was especially high (6/49 (12%)) if the last dose of TNF- $\alpha$ -inhibitor was given less than one administration interval before surgery.

**Conclusions:** Patients with IRD have an elevated risk of postoperative infection. This is particularly the case for elbow and foot surgery and in patients taking more than one cDMARD. If TNF- $\alpha$ -inhibitors are used, they should be stopped at least one administration interval before surgery, as the risk of postoperative infection is significantly increased if the operation occurs within this period.

## FM 3

**Smoking is associated with a less favorable course of disease activity in spondyloarthritis patients with elevated acute phase reactants**

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**Introduction:** Smoking is associated with increased disease activity in patients with ankylosing spondylitis (AS) and early axial spondyloarthritis (SpA) in cross-sectional studies, however causation has not been established.

**Methods:** We included all patients from the Swiss axial SpA cohort (SCQM) with available smoking and HLA-B27 status fulfilling the ASAS criteria for axial SpA. The primary and secondary outcomes for this analysis were the BASDAI and the ASDAS-CRP. The exposures of interest were smoking as ever/never and as current/past/never.

We compared clinical and demographic characteristics between smokers and non-smokers cross-sectionally. The course of disease activity was analysed using random slope multivariate longitudinal regression models, adjusted for potential confounders.

**Results:** Of the 1129 patients who fulfilled our inclusion criteria 62% were smokers (37% current smokers, 25% past smokers). Smoking was associated with a higher level of baseline disease activity: mean BASDAI levels were +0.7, (95% CI: +0.4; +1.0) higher in smokers, with no difference between former and current smokers (wilcoxon test  $p = 0.6$ ). The adjusted longitudinal evolution of BASDAI and ASDAS was similar between smokers and non-smokers. However, we found a significant effect modification by acute phase reactants. Non-smokers and past smokers with elevated CRP/ESR evolve more favourably than current smokers with elevated CRP/ESR.

**Conclusion:** Smokers with SpA have more disease activity and a poorer function. A more disadvantageous course of disease activity in smokers was only found for patients with elevated acute-phase reactants. SpA patients with elevated CRP and/or ESR could benefit from ceasing smoking and improve their response to treatment.

## Posters

## P 1

**Effects of inpatient rehabilitation in hip and knee osteoarthritis – a prospective controlled cohort study**

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**Aim of investigation:** To quantify pain, disability and psycho-social health of patients with osteoarthritis of the hip or knee and effects of comprehensive, multidisciplinary inpatient rehabilitation.

**Methods:** Controlled cohort study of  $n = 88$  hip and  $n = 164$  knee osteoarthritis patients using the Short Form 36 (SF-36) and the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). Health was compared to specific population norms. Effects were quantified by standardized effect sizes and corrected by the effects observed at waiting time before the intervention to obtain controlled effect sizes.

**Results:** In 45.3% hip and 51.8% knee patients, 4 or more comorbid conditions were diagnosed. Compared to population norms, physical

and, to a lesser extent, psycho-social health was significantly deteriorated before start of treatment. Average SF-36 pain scores for hip osteoarthritis were at home 24.7, on entry 27.9, and at discharge 34.2, where population norm = 49.9 (0 = maximal pain). For knee osteoarthritis, the corresponding figures were 20.7, 22.1, 32.6, 48.8 (all  $p < 0.001$  to population norms). Hip osteoarthritis improved by controlled effect sizes of 0.20 (SF-36) and 0.47 (WOMAC) in pain, 0.04–0.39 in function (various SF-36 and WOMAC scores), and (–0.04)–0.32 in psycho-social health (various SF-36 scores). Knee osteoarthritis showed controlled effect sizes of 0.43 and 0.62 in pain, 0.19–0.49 in function, and 0.19–0.30 in psycho-social health. All but one effect in pain and function were higher than the minimal clinically important differences and were comparable to reviewed randomized controlled trials of outpatient exercise therapy.

**Conclusion:** Hip and knee osteoarthritis patients admitted to the inpatient intervention were affected by substantial burden of the disease and comorbidities. Inpatient rehabilitation improved health by small to moderate, clinically important effects.

**Reference:** Angst F et al. J Rehabil Med 2012;in review.

P 2

### Clinical and ultrasonographic articular manifestations in patients treated with ustekinumab for cutaneous psoriasis: a 10 cases analysis

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**Background:** ustekinumab (Stelara), a monoclonal antibody against IL12/IL23, has been approved in many countries including Switzerland for the treatment of moderate to severe plaque psoriasis. Preliminary data have suggested that this compound could also be effective on psoriatic arthritis although a few case studies have reported a good skin response but lack of efficacy on arthropathy.

**Objective:** the objective of this study was to evaluate the effects of ustekinumab prescribed for skin lesions on articular symptoms of psoriasis.

**Methods:** 10 patients treated with ustekinumab were addressed to our rheumatology unit between October 2010 and January 2012.

The rheumatologic evaluation comprised: a collection of demographic data, a detailed recording of articular symptoms at time of the visit and in the past, the search of clinical and ultrasound synovitis, the calculation of DAS28 and the ultrasound score for synovitis: SONAR, and finally the patient global appreciation of the effect on articular manifestations of ustekinumab in comparison with prior treatments.

**Results:** the mean (SD) age, duration of skin disease, duration of Stelara treatment was respectively: 49 (11), 8 years (11), 7 months (6.4). Seven patients were male, 7 had previously received an anti-TNF, 2 methotrexate. The skin disease was described as significantly ameliorated in all patients. Axial or peripheral arthropathies compatible with psoriatic arthritis were present in 5 patients before the treatment. Among those, 3 declared a worsening of the symptoms since the introduction of Stelara. One of the 5 others, without prior articular symptoms, developed psoriatic arthropathy under treatment. However, in all these symptomatic patients, clinical and ultrasonographic synovitis remained mild, with median (range) DAS28CRP: 3.1 (2–4) and median total SONAR score: 5 (4–15).

**Conclusions:** this study suggests that ustekinumab at current dosage could be not as effective on articular symptoms as on skin lesions in psoriasis.

P 3

### Enterobius vermicularis associated polysynovitis

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**Background:** Early diagnostic and treatment of oligo- or polyarticular synovitis are recommended. A large differential diagnosis to clarify is daily clinical practice, one of them reactive arthritis. In spite of well-known urogenital or gastrointestinal causative organism other pathogenic agents should be mentioned.

**Case Report:** An acute symmetric polysynovitis (wrist, elbow, shoulder, MCP and MTP joints, knee, ankle) and Achilles' tendinitis was diagnosed in a 34-year old female Swiss patient in November 2009. Personal and family medical history and clinical examination was without other pathological findings. We found negative serological testing for rheumatoid factor, anti-CCP and antinuclear antibodies, parvovirus B19, hepatitis B/C, HIV, lues, borrelia burgdorferi and HLA-B27. No erosions were confirmed and a sacroiliitis was ruled out by MRI imaging. By thinking of an associated inflammatory bowel disease due to constipation upper and lower endoscopy was performed. Pinworms classified as enterobius vermicularis were diagnosed. Due to this finding a helminth infection associated polysynovitis could be postulated. A treatment with 100 mg mebendazol at day one and seven was combined with diclofenac 75 mg twice a day. Intraarticular steroid injections were adjusted. Because of prolonged oligoarthritis (knees, wrist) glucocorticosteroids combined with methotrexat (weekly 10 mg, subcutaneously) were given for more than one year. The medication was stopped more than 6 months ago and the patient was still recovered.

**Discussion:** Even in clinical typical seronegative polysynovitis as seen in rheumatoid arthritis or possible, but less common spondylarthropathies pathogenic agents should be reviewed. To our knowledge is it the first described case where in chronology enterobius vermicularis infection and polysynovitis was detected. An interesting field of research is the interaction between helminth parasites and the modulation of joint inflammation and immunity. In animal models immune modulation by parasites has been demonstrated.

**References:** Elliott, Intestinal infections by parasitic worms, 2010. Hannu, Reactive Arthritis, Best Pract Res Clin Rheumatol 2011. Matisz, Helminth parasites and the modulation of joint inflammation, Journal of Parasitology Research 2011.

P 4

### Secondary lupus syndrome: induced or revealed by anti-TNF drugs?

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**Background:** TNF blocking agents have been used very frequently during the last 10 years. Two categories are prescribed to treat inflammatory diseases: monoclonal antibodies against TNF and soluble receptors of TNF with etanercept, infliximab, adalimumab, golimumab and certolizumab pegol being most frequently prescribed in Switzerland. Secondary lupus syndromes have rarely been observed during anti-TNF-therapies with an incidence of 0,5%. In BIOGEAS – Spanish register of patients treated with biologics – 1/3 of RA patients, who developed a secondary lupus syndrome under the anti-TNF treatment, would have met ACR criteria of SLE prior to anti-TNF treatment.

**Objective:** To report 6 cases of secondary lupus syndromes during anti-TNF treatment from diverse Swiss rheumatology departments.

**Results:** 6 patients (3 females, 3 males), age 32 to 72 years with rheumatoid arthritis (n = 1), psoriatic arthritis (n = 2), Crohn disease (n = 1) and spondylarthritis (n = 2). Those patients developed a lupus syndrome under infliximab, adalimumab, golimumab and certolizumab pegol. Clinical manifestations of lupus syndrome were mostly skin and joint manifestations with rare cases of Libman-Sacks endocarditis, probable myositis and myelitis. Abnormal laboratory values were: cytopenia, microhematuria and humoral manifestations with elevated ESR and CRP. Immunological manifestations were reported as elevated ANA in all patients and anti-ds-DNA (n = 5), presence of anti-histone- (n = 2) and anti-phospholipid-antibodies (n = 3) and complement factors were consumed in 2 patients. LE cells in a pleura effusion and anti-granulocytes- and anti-thrombocytes antibodies were observed.

**Conclusions:** Secondary lupus syndrome is a rare but potentially life-threatening problem. Careful monitoring for specific signs and symptoms is warranted. In some cases anti-TNF can be a trigger of a pre-existing SLE. Therefore clinical and serological screening prior to anti-TNF treatment might be a reasonable option.

P 5

### Sensitivity to change of the ultrasound synovitis SONAR score in RA patients: preliminary results of the Lausanne subset of the SCQM cohort

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**Background:** since 2009 at least one SONAR score has been performed in 600 RA patients of the SCQM registry. A transversal evaluation of these data has been performed and presented at the recent EULAR meeting. They showed a significant correlation between the diverse grades of DASESR28 activity and the total B and Doppler mode score.

**Objective:** was to evaluate the sensitivity to change of B and Doppler mode of the SONAR score according to the changes in DAS28ESR activity in two consecutive visits among the patients included in the SCQM registry in Lausanne.

**Methods:** all the patients who in Lausanne had at least two consecutive SONAR scores and simultaneous DAS evaluations performed between December 2009 and June 2012 were included. The ultrasounds were done or supervised by the same operator in contrary of the DAS evaluations.

**Results:** 145 RA patients had at least one score performed. Among them, 40 patients had two scores that could be analyzed. The mean (SD) gap between the two evaluations was: 11 months (5). The mean (SD) DASESR28 at the first visit was: 3.4 (1.2), and second visit: 2.8 (0.9) p: 0.3 and the mean (SD) total B mode and Doppler score at entry respectively 12 (1.3), 1.2 (2.5), and in the second visit 8.0 (0.9). p.0.03, 0.5 (1), p: 0,17. The Pearson r correlation between change in DAS and was significant for both b mode total and Doppler score, respectively: 0.63, IC: 0.45 to 0.81. P: 0.0001, r: 0.31, .p 0.04. 9/10 patients with a clinical relevant change in DAS (>1.1) had a change of total B mode score: >5 and 7/8 a change a Doppler score: >1. Only 1/13 patients with a change of b mode SONAR >5 had a change in DAS <0.7.

**Conclusions:** this study confirms that the SONAR is sensitive to change when compared to the change in DAS activity.

P 6

### POSTOP: A randomized, open-label study of denosumab on bone mineral density loss after renal transplantation

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**Introduction:** Denosumab is approved for the treatment of post-menopausal women with osteoporosis and for breast- and prostate-cancer patients treated with anti-hormonal therapy. There is no data however of the efficacy and safety of Denosumab in patients under immunosuppressive therapy. Renal transplant recipients are at high risk of bone loss and are usually treated with immunosuppressants and corticosteroids. We present preliminary results of the safety of Denosumab in this population.

**Methods:** In this ongoing randomized open-label trial patients under triple immuno-suppressive therapy including steroids are randomized within 28 days after trans-plantation to receive either Denosumab, 60 mg s.c. every 6 months or no specific treatment. All patients receive Calcium 1000 mg and Vitamin D 800 IU.

**Results:** 34 of 100 planned patients were randomized between 07/2011 and 03/2012 and received Denosumab plus Ca/Vit D or Ca/Vit D only. Denosumab was generally well tolerated. Urinary tract infections occurred more often in the Denosumab group.

	Denosumab	Controls
Total number of SAE	22	16
Total number of AE	66	54
Urinary Tract Infections	26	5
CMV	6	11
Other infections	13	11
Cardiovascular and Pulmonary	6	4
GI	13	10
Urogenital	8	10
Neurological	1	3
Musculoskeletal	2	7
Other	13	9

**Conclusion:** Denosumab is generally well tolerated in kidney transplant patients. However, the incidence of urinary tract infections in Denosumab treated patients is remarkably higher than in the control group. This finding needs further investigation. The study is ongoing and expected to be completed in 2014.

P 7

### Efficient boosting of the antiviral T cell response in B cell-depleted patients with autoimmune rheumatic diseases following influenza vaccination

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**Background:** Booster vaccination against 2009 H1N1 influenza virus was recommended for rheumatologic patients under immunosuppressive therapy during the 2009/2010 H1N1 pandemic. In this study we assessed whether B cell depletion with Rituximab influences the antiviral immune response in 2009 H1N1 influenza virus-vaccinated patients.

**Methods:** Influenza virus-specific immune responses were analysed after the first and a booster vaccination with Pandemrix™ in sixteen consecutively Rituximab-treated patients with different rheumatic autoimmune disorders. Antibody titers were determined by a haemagglutination-inhibition assay and virus-specific T cell responses were evaluated by a flow cytometry-based intracellular cytokine-secretion assay. Patients showing clinical symptoms of influenza infection were excluded from this study.

**Results:** Two out of seven patients with low (<10%) and four out of nine with normal (>10%) B cell percentages developed significant antibody responses after the first vaccination. Booster vaccination led to an antibody response in one additional patient. After the first vaccination, virus-specific CD4+ and CD8+ T cell responses were significantly lower in patients with low B cell than in those with normal B cell percentages. Of importance, the booster vaccination stimulated the antiviral T cell response only in patients with low B cell percentages.

**Conclusions:** In the absence of a significant effect of booster vaccinations against 2009 H1N1 influenza virus on the humoral immune response in B cell-depleted patients with autoimmune rheumatic diseases, enhanced antiviral T cell responses in patients with low B cell percentages indicate that T cells compensate for the impaired humoral immunity in these patients.

P 8

### Rituximab for necrotizing scleritis associated with rheumatoid arthritis, a clinical case

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**Background:** Scleritis is one of the inflammatory ocular complications of RA. According to studies, 0.2 to 6.3% of patients with RA develop scleritis. Anterior necrotizing scleritis is one of the most severe and destructive form, with a risk of visual impairment around 40%. According to Usui et al., the inflammation in autoimmune necrotizing scleritis may be driven by B-cells [1].

**Objective:** To report the case of a patient with RA, treated by Rituximab for a severe, refractory, necrotizing scleritis.

**Results:** The patient was a 45-year-old woman with severe, RF positive, erosive, nodular RA, refractory to several biologics. On Etanercept and methotrexate, she developed a necrotizing scleritis of the left eye, attributed to RA. The Etanercept was stopped. The necrotizing scleritis did not respond to local and systemic corticotherapy (oral and IV), one infusion of tocilizumab was not efficient. The patient was then referred to start cyclophosphamide. However, this latter treatment was not introduced due to a severe infection (epidural abscess). The patient received Rituximab (two infusions of 1 g, repeated 6 months later), associated with oral corticotherapy. On this treatment, the scleritis was controlled and the oral corticotherapy was slowly decreased. In addition to Rituximab, she received antibiotics during 6 months for the epidural abscess.

**Conclusions:** Rituximab seems efficient in RA patients with severe refractory necrotizing scleritis. Further studies are needed to confirm this hypothesis.

<sup>1</sup> Usui, et al. Br J Ophthalmol 2008.

P 9

### Efficacy of unstable shoes in chronic low back pain: a pilot randomized controlled trial

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**Background:** Low back pain (LBP) is a world-wide spread musculoskeletal burden that causes important costs for society. Unstable shoes have been identified as a potential device to reduce LBP. Standing and walking with unstable shoes require more activation of stabilizing muscles and modify posture which could lead to a reduction of LBP. The purpose of this study was to conduct a pilot trial to explore the effect of unstable shoes on chronic LBP in health professionals.

**Methods:** We conducted a randomized controlled trial (n = 40) with an intervention (IG) (n = 20) and a control group (CG) (n = 20). All the participants were health professionals working at the University Hospitals of Geneva with LBP >30/100 on a VAS at the inclusion and without radicular symptoms. The IG received unstable shoes (model MBT Fora) and the CG received conventional sport shoes (model Adidas Bigroar). Both groups wore the shoes at work during 6 weeks. LBP scores (last 24h, during walking with shoes, during walking barefoot and reported in a diary logbook), functional disability (Roland-Morris questionnaire, RMDQ) and quality of life (EQ-VAS) were assessed at baseline and follow-up.

**Results:** Baseline characteristics were similar between the two patient groups. The intervention group showed a higher decreasing than control in all the pain scores. All the pain scores showed a statistically significant difference (P <0.05) expected the pain score during last 24h (p = 0.199). The percentage of responders was higher in the intervention group versus the control group for the different pain scores. The rate of satisfaction (satisfied and very satisfied) was 79% in the intervention group versus 25% in the control group (p = 0.002). There was no significant difference in RMDQ and EQ-VAS scale between the mean change in the intervention group and the mean change in the control group.

**Conclusions:** The results of this randomized, controlled trial shows that a 6-week period wearing unstable shoes significantly decreased several pain dimensions. This short term evaluation did not allow us to detect any effect on quality of life and disability scores. Larger trials with longer follow-up are required before drawing any firm conclusion.

HP 1

### Malnutrition in Rheumatology in Acute Care Settings, Risk factors and Interventions

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**Background:** The prevalence of malnutrition in hospitalized patients in Switzerland is up to 40%. Malnutrition leads to a higher mortality and a higher complication rate. Only few studies about malnutrition have been conducted in rheumatology and often only with a small sample. Since 2010, the nutritional status of all hospitalized patients in the Clinic for Rheumatology at the University Hospital Berne, Inselspital has been assessed with the NRS 2002 adapted for the Clinic for Rheumatology (NRS-RIA) as well as an entry of quantities of every meal.

**Aim:** The aim of this study is to define assessment instruments for malnutrition as well as interventions for the prevention and treatment of malnutrition in a rheumatologic ward.

#### Questions:

- What factors are influencing the risk for malnutrition in patients with a rheumatologic disease?
- What interventions have a positive effect on the nutritional status of patients with a rheumatologic disease in an acute care setting?

**Methods:** A literature research was made using the following key-words in different combinations: malnutrition, rheumatology, influencing factors, treatment and prevention, health promotion, risk factors, intervention. Additionally, the data of the NRS 2002 and the entry of quantities of the patients' meals from December 2010 to May 2011 were analysed using descriptive statistics.

**Results:** The following influencing factors were found in the literature: Illness, age, motor restrictions (especially regarding the ability to eat self-dependently, that means regarding the higher extremities), xerostomia, lesion of the oral mucosa, social isolation. These factors were integrated in the analysis of the clinical data. During data collection, at hospitalisation more than half of the patients were at risk for malnutrition or suffering from malnutrition. Additionally, with a longer hospital stay the nutritional status of the patients got worse. For the influencing factors, it can be assumed that rheumatic disease, motor restrictions and problems with the oral mucosa increase the risk for malnutrition. Looking closer at disease, a higher proportion of patients suffering from systemic sclerosis, rheumatoid arthritis or patients hospitalised for diagnostics have a risk for malnutrition. For age and social isolation no pattern can be found regarding malnutrition and risk for malnutrition. Concerning the entry of quantities of patients' meal it can be said that patients already ordering only a small meal usually do not eat the whole portion while patients ordering larger meals also eat more of each portion. It was also observed that the patients get more snacks in between meals when a dietician is involved.

**Conclusions:** The main conclusion of this study is that malnutrition and the risk for malnutrition are important clinical problems in patients with a rheumatic disease. In clinical practice, the NRS-RIA proved to be easy to use to assess these patients. Thanks to the systematic entry of quantities, the daily dietary intake could be evaluated. Dieticians were integrated in time in patients' care, which had a positive effect on patients' dietary intake. As the average length of stay in the Clinic for Rheumatology is only ten days, it is important to think about the sustainability of these interventions. For instance patients in day care could be systematically assessed, to improve nutritional status also in non hospitalised patients. Especially for patients with systemic sclerosis, rheumatoid arthritis or patients hospitalised for diagnostics, a focused interprofessional care should be institutionalised, for instance by implementing standards or clinical pathways. Another possible preventive approach would be to improve rheumatologic patients' knowledge about «healthy nutrition». Nevertheless, there is still some need to further explore risk for malnutrition and malnutrition in patients with a rheumatic disease. With the results of this small study, only tendencies can be shown which should be further evaluated.

HP 2

### Client-centred counselling for activity-based prevention of Raynaud's Phenomenon – a small but important subject for occupational therapy in rheumatology

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**Introduction:** Raynaud's Phenomenon (RP) is characterized by an excessive vasospasm of digital arteries causing an ischemia (reduced blood flow to the skin) as well as a cyanosis (blue skin because of deoxygenation of slow-flowing blood in the small vessels). It occurs often as a response to cold exposure or other stimuli like emotionally stressful situations<sup>1</sup>. Most often affected are the fingers but also toes, the nose, or ears. Scleroderma, mixed connective tissue diseases but also other rheumatic diseases can be associated with RP. Repetitively occurring RP diminishes the skin's protective function, can harm the small vessels causing wounds and digital ulcers. Painful digital ulcers reduce the satisfactorily performing of daily occupations. Thus, prevention of RP is a relevant but often disregarded subject for occupational therapists working with rheumatic clientele.

**Methods:** Based on the "transtheoretical model of health behavior change"<sup>2</sup> a systematic counselling guide for the prevention of RP was developed.

**Results:** Occupational therapy begins with a client-centred interview based on daily occupations and situations in which an RP occurs. Thereafter the counselling comprises

i.) imparting knowledge about the PR (pathophysiology, types of RP, causes, risks, and treatment possibilities); and ii.) applying knowledge based on individual analysis of activities and behaviours triggering RP. Change of behaviour in daily and job-related activities is emphasized to prevent from the occurrence of RP. Thus, general prophylactic procedures to avoid RP-provoking factors as well as possibilities to increase microcirculation in hands and feet get underlined.

**Discussion:** Patients value the possibility to test practically different assistive devices and products like heating gloves or the paraffin bath. Nevertheless, this clinical practice project could be developed further to systematically evaluate change of behavior and the reduction of RP-frequency respectively the duration of an already occurred RP.

#### References:

- <sup>1</sup>Galluccio, F & Matucci-Cerinic, M. *Autoimm Rev*, 2011;10(5):241–243.  
<sup>2</sup>Prochaska, JO & Velicer, WF. *Am J Health Promot*, 1997;12(1):38–48.

HP 3

### Skin and mucosa care in systemic sclerosis – implementation of a specific education program

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**Introduction:** Skin and mucosal manifestations such as skin thickening, pruritus, reduced microvascular circulation, digital lesions or dryness of the eyes and mucous membranes are common in Systemic Sclerosis (SSc). These changes affect quality of life and body image. Managing these symptoms requires disease-specific knowledge and behaviour modifications not only of the patients but also their family caregivers [1, 2]. Thus, the aim was to establish an «SSc Patient and Family Caregiver Education Program» (SSc PFEP) to increase self-efficacy and improve necessary skills to cope with skin and mucosal problems [3].

**Methods:** SSc PFEP was developed using participatory action research techniques [4]. After a literature review two focus group interviews were conducted with eight clinical experts and nine SSc patients. Based on these data the SSc PFEP was planned and education material such as information leaflets and guidelines were developed.

**Results:** SSc PFEP has been offered by a specialized team consisting of four registered nurses and a nurse specialist since October 2011. The program includes assessments and tests of the skin and mucosa. SSc PFEP is offered as individual and group education. Furthermore, consultation by telephone or e-mail is provided. The following topics have been incorporated into SSc PFEP education material: sicca symptoms, skin sclerosis, Raynaud's phenomenon, ulcers and appearance-related changes.

**Conclusion:** By developing and implementing SSc PFEP nursing roles have been expanded. Additionally, this project stimulated an on-going collaboration between professionals and SSc patients. The current evaluation will show if SSc PFEP is meeting SSc patients' skin and mucosa care needs.

#### References:

- <sup>1</sup> Godard, D. (2010). *Autoimmunity Reviews*. doi: 10.1016/j.autrev.2010.09.009  
<sup>2</sup> Mendelson C, Poole JL. *Disability and Rehabilitation*. 2007;29:1492–501.  
<sup>3</sup> Bodenheimer T, et al. *JAMA*. 2002;288:2469–75.  
<sup>4</sup> Stringer E, Genat W. *Action Research*. (2004). New Jersey: Prentice Hall.

HP 4

### Development of an interdisciplinary pathway for the management of contractures in clients with scleroderma – an EBP-project

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**Introduction:** Scleroderma (systemic sclerosis, SSc) is a complex autoimmune disease, which comes along with inflammatory and fibrotic changes of the skin and viscera and vasculopathy. Fibrotic changes can occur rapidly and cause irreversible and massive impairments in musculoskeletal functions like decreased range of motion in the hands and the upper limb as well as in the lower extremities. Early therapy against these contractures is necessary as physical disability leads to difficulties in conducting activities of daily living and decreased quality of life and well-being [1]. So far, no clinical pathway existed in our clinic for the treatment or prevention of contractures in clients with SSc.

**Methods:** The development of an interdisciplinary pathway was guided by the criteria of the evidence-based practice [2]: 1.) literature-search for treatment of contractures in SSc (PubMed/MEDLINE, CINAHL, PEDro, OTseeker) including an evaluation of articles regarding methodology and clinical utility; 2.) collecting additional information from external therapists and authors; 3.) selection of interventions; 4.) design of clinical pathway; 5.) implementation in clinical practice; 6.) evaluation on the basis of observation of daily practice (clients, therapists, referring physicians).

**Results:** The clinical pathway was developed in the form of a mind map: who, when, what has to be done (assessments and interventions) to avoid misunderstandings and overlaps. Evaluation data from earlier interventions get incorporated. The pathway was implemented in clinical practice in May 2012. The mind map is presented on the poster.

**Discussion:** The interdisciplinary process of such an evidence-based clinical practice-project for a complex clientele in a busy clinic has been illustrated. The relevance for health professional practice from the first idea to implementation in practice is discussed.

#### References:

- Maddali Bongi S, et al. Clin Exp Rheumatol. 2009;27(3 Suppl 54):44–50.
- Mayer, H. & van Hilten, E. (2007). Einführung in die Physiotherapieforschung. Wien: Facultas Verlag.

HP 5

### Association of the sense of coherence with physical and psychosocial health in the rehabilitation of osteoarthritis of the hip and knee

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**Introduction:** Comprehensive inpatient rehabilitation of patients with osteoarthritis (OA) of the hip or knee may improve pain and physical function. Psychosocial factors may affect the disease and response to treatment. Antonovsky's sense of coherence (SOC) is a concept that influences mental and physical health. The goal of this study was to analyze the association of the SOC with physical and psychosocial health components in patients with hip and knee OA before and after in- and outpatient rehabilitation.

**Methods:** Prospective cohort study with 335 patients, 136 (41%) with hip and 199 (59%) knee OA. The outcome was measured by Short Form-36 (SF-36) and the Sense of Coherence (SOC-13). Baseline scores of the SF-36 scales and the observed effect sizes after rehabilitation were correlated with the baseline SOC-13. These correlations were compared to the Factor Score Coefficients for the Mental Component Summary of SF-36 which quantify the factor load on the psychosocial dimension. Predictive impact of the baseline SOC-13 for the SF-36 scales (baseline scores and effect sizes) was then determined by multivariate linear regression controlled for possible confounders.

**Results:** After rehabilitation, improvements were observed in all SF-36 scales. At baseline, the SOC-13 correlated with the SF-36 scores between  $r = 0.10$  (physical functioning) and  $r = 0.53$  (mental health). The correlation of these correlation coefficients to the Factor Score Coefficient of the SF-36 Mental Component Summary was  $r = 0.95$ . The correlations for the effect sizes (baseline → discharge) with the baseline SOC-13 global score were all negative and varied between  $r = 0.00$  (physical functioning) and  $r = -0.19$  (social functioning). In the multivariate linear regression model, the explained variance by the baseline SOC-13 continuously increased from physical to psychosocial health dimensions. This gradient was consistently observed for both, the baseline scores and the effect sizes.

**Conclusion:** The SOC was associated with psychosocial dimensions but hardly with physical health. The more a SF-36 score loads on mental health the higher was its association to the SOC. This contrasts the idea of Antonovsky who predicted high associations to both, mental and physical health.

### Sind virtuelle Hausbesuche durch Bezugspersonen von älteren Menschen eine praktikable, reliable und valide Alternative zu Wohnraumabklärungen vor Ort durch ErgotherapeutInnen?

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**Hintergrund:** 30–60% der Stürze älterer Menschen sind durch Umweltfaktoren im Wohnbereich bedingt. Ergotherapeutische Wohnraumabklärungen können sturzrelevante Umweltfaktoren identifizieren, sind jedoch kostenaufwändig. Als Alternative zur Wohnraumabklärung wurde ein virtueller Hausbesuch entwickelt, bei dem Bezugspersonen mit Hilfe eines Regiebuches eine Fotodokumentation des Wohnraumes durchführen.

**Fragestellungen:** Es sollte untersucht werden, ob virtuelle Hausbesuche bei über 65-jährigen Patienten zu denselben Resultaten in Bezug auf die Ermittlung von Umweltfaktoren führen und ob diese kostengünstiger sind als Wohnraumabklärungen vor Ort. Auch die Akzeptanz des virtuellen Hausbesuchs durch die ihn durchführenden Bezugspersonen und die auswertenden ErgotherapeutInnen sollte ermittelt werden.

**Methode:** Zum Vergleich des virtuellen Hausbesuchs mit der Wohnraumabklärung vor Ort wurde eine Querschnittsuntersuchung durchgeführt. Die Praktikabilität wurde durch Gegenüberstellung des finanziellen Aufwands, die Akzeptanz mittels Fragebögen untersucht. Zur Bestimmung der Reliabilität wurden Intraclass-Korrelationskoeffizienten und Cohens-Kappa-Koeffizienten berechnet, die Validität wurde durch Berechnung von Sensitivität und Spezifität bestimmt.

**Ergebnisse:** Es wurde der Wohnraum von 20 PatientInnen untersucht. Der Kostenaufwand war beim virtuellen Hausbesuch um 53% geringer als bei Wohnraumabklärungen. Die Befragung der Bezugspersonen und der ErgotherapeutInnen ergab eine gute bis sehr gute Akzeptanz des virtuellen Hausbesuchs. Die Reliabilität erwies sich als überwiegend gut bis sehr gut. Mit einer Gesamtsensitivität von 78,9% und einer Gesamtspezifität von 84,9% war auch die Validität des virtuellen Hausbesuchs hoch. Eine ungenügende Reliabilität und Validität zeigte der virtuelle Hausbesuch bei der Beurteilung von rutschigen Boden- und Treppenbelägen und von Platzverhältnissen.

**Schlussfolgerungen:** Der virtuelle Hausbesuch stellt eine kostengünstige, von Bezugspersonen und ErgotherapeutInnen akzeptierte und weitestgehend reliable und valide Alternative zu Wohnraumabklärungen vor Ort bei älteren Menschen dar. Er hat gute Fähigkeiten zur Erkennung von Gefahrenquellen und Barrieren im Wohnraum. Zur Erhöhung der Reliabilität und Validität sollten ErgotherapeutInnen zusätzliche Informationen bei den PatientInnen und/oder deren Bezugspersonen einholen.

HP 7

### Cardiovascular training is effective in patients with ankylosing spondylitis. A randomised controlled trial

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**Background:** There is evidence that ankylosing spondylitis (AS) may contribute to cardiovascular mortality and morbidity (1). The objective of this study was to evaluate the effects of a 12-week individually monitored, moderately intensive cardiovascular outdoor training (CVT), additionally to classic spinal mobility exercise (2), on physical fitness and perceived disease activity (BASDAI) in AS patients.

**Methods:** Patients diagnosed with AS according to modified New York criteria were randomised to either 'CVT' or 'attention control'. Assessments were performed at baseline and after the intervention period of 3 months. Physical fitness was measured in watts using a submaximal bicycle test following the PWC 75% protocol (2). ANOVA models adjusting for covariables were used to analyze the data.

**Results:** 106 AS patients enrolled, 40% were women, mean age was 49 (SD = 12.0) years. 76.5% of the CVT participants reported exercising at least three times a week. At 3 month follow-up, the fitness level in the CVT group was significantly higher than in the control group (90.32 (SD 4.52) vs. 109.84 (SD 4.72) respectively,  $p = 0.001$ ), independent of other covariables. Further, the CVT group had a significantly lower BASDAI joint pain subscore of 1.19;  $p = 0.01$ ), compared to the controls.

**Conclusions:** CVT, in addition to mobility exercise, increased fitness in AS patients and may be beneficial on pain, but not on fatigue.

- References:** <sup>1</sup> Lautermann D, et al. Clin Exp Rheumatol. 2002;20:11–5; <sup>2</sup> Dagfinrud H, et al. Cochrane Database Syst Rev. 2008, CD002822; <sup>3</sup> Gore CJ, et al. Med Sci Sports Exerc. 1999;31(2):348–51.



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