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SAT0727-HPR THE EFFECT OF INSPIRATORY MUSCLE TRAINING ON AEROBIC CAPACITY, PULMONARY FUNCTION AND FUNCTIONAL STATUS IN PATIENTS WITH ANKYLOSING SPONDYLITIS: A RANDOMIZED CONTROLLED STUDY

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Background: In ankylosing spondylitis (AS) the chronic inflammatory process mainly affects the axial skeleton with ensuing pain and limitation of thoracic and spinal mobility. Most of the AS patients have the complaint of reduced exercise capacity. Pulmonary function impairment, chest wall restriction, weak respiratory muscle performance, peripheral muscle weakness and deconditioning have been reported as the hypotheses for reduced exercise capacity.

Objectives: The aim of this study was to evaluate the effects of inspiratory muscle training on aerobic capacity, pulmonary function and functional status in patients with AS.

Methods: A total of 32 patients (18 female, 16 male; mean age: 37.3±10.4 years) were included in this study. The patients were randomized as two groups; Group I consisted of 16 patients, received inspiratory muscle training (IMT) in addition to conventional exercise (CE), Group II consisted of 16 patients, received only CE. All assessments were done before and after the training (8 weeks) for every patient. Standard pulmonary function tests were applied for pulmonary volumes. Maximum inspiratory pressure (P_Imax), maximum expiratory pressure (P_Emax) were also measured as respiratory muscle strength. Six-minute walk test (6MWT) was used for the assessment of aerobic capacity. For the evaluation of functional status, the Bath Ankylosing Spondylitis Functional Index (BASFI), Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), Bath Ankylosing Spondylitis Metrology Index (BASMI) were used. CE training program consisted of 20 exercises: motion and flexibility exercises of the cervical, thoracic, and lumbar spine; stretching of the hamstring muscles, erector spine muscle, and shoulder muscles. IMT training load was based on 50% of the patient's sustained maximum inspiratory pressure. The patients started by performing ten loaded inspiration with a 60 second rest period between each inspiration for three sets in each session. Four sessions of IMT was applied in a day. The exercises were performed as home program for five days per week, 40 minutes per session. Wilcoxon test was used to compare groups.

Results: After eight weeks follow-up, patients in Group I had a significant increase in P_Imax (p=0,000), P_Emax (p=0,05), and 6MWT (p=0,041) compared with Group II (p=0,134, p=0,020, p=0,281, respectively). There were no significant differences of spirometric measurements. Comparison of the groups showed significantly superior results for group I in BASDAI (p=0,049).

Conclusions: Ankylosing spondylitis patients who performed eight weeks of inspiratory muscle training in addition to conventional exercise training, had an increased respiratory muscle strength, a better aerobic capacity, and disease activity than those who performed conventional exercise only. Inspiratory muscle training should be disseminated with these patients due to advantages.

References:

[1] Dragoi GR, Amaricai E, Dragoi M, Popoviciu H, Avram C. Inspiratory muscle training improves aerobic capacity and pulmonary function in patients with ankylosing spondylitis: A randomized controlled study. 2015 Clinical Rehabilitation, doi: 10.1177/0269215515578292.

Acknowledgements: Inspiratory muscle training should be disseminated with these patients due to advantages.

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SAT0728-HPR A PATIENT SATISFACTION SURVEY: PATIENTS' PERCEPTIONS OF BIOLOGIC DOSE TAPERING

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Background: Evidence shows that remission can be maintained in selected patients whose biologic medication is dose tapered¹. In June 2015 we began tapering the doses of selected rheumatoid arthritis, ankylosing spondylitis and psoriatic arthritis patients in disease remission. The process was agreed with the local commissioners and a protocol² was devised to guide safe and evidence based biologic dose tapering. Benefits include reduced medication burden for patients, fewer day-case infusions and financial savings. However, there is a lack of knowledge of patients' perceptions of the process.

Objectives: Our department proposed to investigate patients' perceptions of their experience of dose tapering. We wanted to assess patients' understanding and acceptance of the process and ensure they felt included in decision making. Patient feedback enables reflection and improved practice.

Methods: An anonymous, tick-box, patient satisfaction survey was devised. It requested that patients stated the extent to which they agreed with a statement, also allowing free-text comments. The survey was posted to relevant patients after their identification from our biologics database. A stamped addressed envelope was provided for return of the completed survey.

Results: 56 surveys were posted, 46 (82%) were returned. 31 (67%) of patients were pleased to taper their medication, 35 (76%) felt fully included in decision making and 36 (78%) agreed that they had the opportunity to ask questions. Of the 13 patients whose disease flared post-taper, 8 (62%) agreed that they were promptly reviewed in clinic, 1 patient (8%) disagreed.

Some admitted to anxiety prior to dose tapering, however once established on their new dose, continuing disease remission was reassuring. Patients felt that they could contact the rheumatology helpline if required. Some also expressed that their quality of life had improved due to the decreased medication burden.

6 (37.5%) of the 16 rituximab patients who replied, disagreed that they were included in the decision to dose taper. Therefore, clinicians must ensure information provided is clear, that a full discussion occurs and the patient has an opportunity to ask questions. On review, it was evident that the wording of the survey may have caused confusion for rituximab patients. The term "dose reduction" may have suggested that the dose of medication in their infusion was reduced. In practice, the patient decreased from two infusions to one.

Conclusions: The majority of patients expressed that they were content with the biologic dose tapering process and felt sufficiently included in decision making. Importantly, a large proportion of patients were of the opinion that they were reviewed quickly when their disease flared.

Practice can be improved from the knowledge that some patients would appreciate more communication regarding the decision to dose taper. Also, when undertaking further patient surveys, questions must be clear and unambiguous.

References:

[1] JS Smolen, R Landewé, FC Breedveld, et al. EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying antirheumatic drugs: 2013 update. *Ann Rheum Dis* 2014;73:492–509.

[2] C Holloway. Wye Valley NHS Trust: Biologics in Rheumatology: Dose Tapering Protocol. Sept. 2015.

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SAT0729-HPR PSYCHOLOGICAL PROFILE OF PATIENTS WITH FIBROMYALGIA SYNDROME

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Background: Fibromyalgia (FM) is a chronic non inflammatory condition characterized by pain and fatigue as well as physical and psychological symptoms. Management can be particularly challenging and a combination of pharmacological and non pharmacological treatments are recommended.

Objectives: The aim was to study the level of anxiety and depression in fibromyalgia patients and whether these were associated with symptom severity, functional status, social or demographic factors.

Methods: A cross sectional survey of 155 consecutive patients attending the nurse-led fibromyalgia clinic was carried out. Patients were diagnosed using the 2010 ACR diagnostic criteria. Demographic data, Widespread Pain Index (WPI), Symptom Severity Score (SSS), VAS pain and VAS fatigue were recorded. Patients filled in the self-administered questionnaires including the Revised fibromyalgia impact questionnaire (FIQR), Hospital Anxiety and Depression Scale (HADS). Patients were classified as suffering from high anxiety or depression if HADS was ≥ 11, moderate if 8–10 and low ≤ 7 for each scale respectively.

Cross tabs and chi squared were used to study associations between anxiety and depression and social and demographic factors. Logistic regression analysis was performed to identify whether WPI, SSS, FIQR, VAS pain and VAS fatigue were predictors of severe anxiety and depression.

Results: One hundred fifty five patients (92% female) participated in the survey. The average age was 50.3 years (SD 11.5) and mean duration of symptoms 13.4 years (SD 11.3). The mean HADS-A (anxiety) was 11.8 (SD 4.13), HADS-D (depression) 9.1 (SD 3.8) and FIQR 60.3 (SD 17.6).

High levels of depression were reported by 31.5%, moderate 32.1% and low 30.3%. High levels of anxiety were reported by 60%, moderate 21.2% and low 13.3%. Both high levels of anxiety and depression were found in 25.2% of patients.

SSS was the single best predictor for anxiety (p=0.001) while disease duration (p=0.01), SSS (p=0.02) and FIQR (0.04) predicted depression. VAS pain and VAS fatigue were not good predictors of severe anxiety and depression. When patients with high levels of anxiety and depression were compared with those with moderate and lower levels no association was found with age or social factors including occupation, marital status, level of education and family support.

Conclusions: Both severe anxiety and depression were highly prevalent in our FM cohort, particularly anxiety. All FM patients need to be screened for anxiety and depression particularly those with high SSS and FIQR scores and longer disease duration.

A psychiatrist and psychotherapist with a special interest in FM are essential members of the multidisciplinary team to ensure that anxiety and depression are addressed early prior to starting further interventions for FM.

References:

[1] Jensen KB, Fransson P, Marcus HM, Williams SCR, Choy E, Mainguy Y, Gracely R, Ingvar M, Kosek E (2010) anxiety and depression in fibromyalgia

are related to poor perception of health but not to pain sensitivity or cerebral processing of pain. *Arthritis & Rheumatology Journal* 62(11).

- [2] Ugar M, Sarp U, Karaaslan O, Tanik N, Arik HO (2015) Health anxiety and depression in patients with fibromyalgia syndrome. *Journal of International Medical Research* 45(3):679–685.

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SAT0730-HPR DIFFERENCES IN PERCEPTION OF THE DISEASE CONSTRAINTS BETWEEN THE CHILD AND PARENTS IN JIA

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Background: Studies suggest that the perception of the child and family differ in juvenile idiopathic arthritis. This may pose a problem for the clinician's assessment (1,2).

Objectives: The aim of this study was to evaluate the differences in perception of the disease constraints between child and parent in JIA.

Methods: 129 children with JIA were included in the study. The main complaint about the illness was requested to be expressed in writing by both the child and the family. Individuals' expressions and demographic data were recorded. The main complaints were considered nominal. The correlation between the parent's and child's expressions were examined. The types of complaints were classified as none, functional, symptomatic, and both functional and symptomatic.

Results: The age range of children ranged from 6 to 21 (mean±SD; 12,86±3,68). When the complaints of the 129 children and the parents were compared, 45,7% were different, 20,2% were partially similar and 34,1% were perfectly similar complaints. When the answers of the 59 children and parents who differ in their complaints were examined; 67,8% of the children expressed a milder disease than their parents (Table 1). While the family mostly concentrated on the symptoms, the children were worried on functional complaints (Table 1).

Table 1. Results of the evaluations

	Child + Parent (n=129)	Differing perception of problems in the child and parent (n=59)
Group of complaint - Child		
None n (%)	49 (38)	16 (27,1)
Function n (%)	43 (33,3)	23 (39)
Symptom n (%)	20 (15,5)	9 (15,3)
Function + Symptom n (%)	17 (13,2)	11 (18,6)
Group of complaint - Parent		
None n (%)	50 (38,8)	16 (27,1)
Function n (%)	10 (7,8)	4 (6,8)
Symptom n (%)	57 (44,2)	36 (61)
Function + Symptom n (%)	12 (9,3)	3 (5,1)

Conclusions: As a result of this study, there was a difference between parent's and child's perception of the disease. While children report functional complaints, parents focus on symptomatic complaints. Exercise approaches should focus on the child's functional complaints and identify common goals with the family. Families should be educated about the importance of the complaints that the child expresses.

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- [1] Manczak, M. Rutkowska-Sak, L. Raciborski, F. Health-related quality of life in children with juvenile idiopathic arthritis – child's and parent's point of view. *Reumatologia* 2016; 54(5):243–250.
- [2] Consolaro, A. Negro, G. Lanni, S. et al. Toward a treat-to-target approach in the management of juvenile idiopathic arthritis. *Clin Exp Rheumatol* 2012; 30(4 Suppl 73): 157–162.

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SAT0731-HPR SYMPTOMS OF PAIN, FATIGUE AND SELF-EFFICACY IN YOUNG PATIENTS WITH SPONDYLOARTHRITIS – A COMPARISON BETWEEN WOMEN AND MEN

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Background: Spondyloarthritis (SpA) often has an early disease onset with inflammatory back pain debuting already in young adulthood. Studies have shown gender differences in disease specific areas but few studies have focused only on the younger subjects. Extended knowledge based on self-reported information

can help to better understand the characteristics of these younger women and men with SpA.

Objectives: To study the differences between young women and men with SpA with regard to self-reported pain measures, disease activity, fatigue, self-efficacy and health status.

Methods: A cross-sectional population based cohort of 201 patients age 18–36 years with SpA identified through a health care register by searching for ICD-10 codes for SpA between the years 2003–2007. They all responded to a questionnaire survey in 2009. 29% were diagnosed with ankylosing spondylitis, 39% with psoriatic arthritis, and 32% with undifferentiated spondyloarthritis. The survey included questions concerning pain (NRS 0–10 and a pain mannequin), fatigue (NRS 0–10), self-efficacy (ASES 10–100, low-high). The pain mannequin was used to categorize patients into groups; no chronic pain (NCP), chronic regional pain (CRP) or chronic widespread pain (CWP). Self-reported disease activity (BASDAI 0–10) and health status (EQ5D, 0–1) were used to describe the group. Characteristic symptoms are reported as mean, standard deviation (SD) and frequencies. T-test and Chi2 test were used to study gender differences.

Results: The mean age (SD) was, 30 (5) years, 60% were women. The group reported disease activity scores (BASDAI) of 3.8 (2.3), health status 0.75 (0.16), and a disease duration of 7 (5) years. One third were smokers or former smokers, and 69% reached WHO's recommended level of health enhancing physical activity. 21% reported CRP, 41% CWP and the remaining 38% reported NCP. More women reported CWP pain than men, (48% vs. 30%, p=0.026). Women also reported worse pain compared to men, (3.9 (2.4) vs. 2.9 (2.1), p=0.001), worse fatigue (5.0 (2.6) vs. 3.9 (2.7), p=0.003), less self-efficacy for pain (53 (20) vs. 59 (21), p=0.040) and also for symptoms (59 (19) vs. 65 (20), p=0.038).

Conclusions: A significant proportion of both women and men reported symptoms consistent with chronic widespread pain already at young age. Women reported in general worse health compared to men, including pain distribution, pain intensity and pain management. This information could be valuable for clinicians in the care of young patients with SpA.

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SAT0732-HPR RESILIENCE AND POSITIVE AFFECT ARE RELATED TO THE EXPERIENCE OF FATIGUE IN PATIENTS WITH A RHEUMATIC DISEASE

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Background: Fatigue is a common symptom in patients with a rheumatic disease. Resilience, the ability to bounce back or recover from stress, has been found to be related to lower fatigue in patients with cancer, traumatic brain injury, cardiac disease and fibromyalgia (see e.g. [1])

Objectives: To study the relationships of resilience and the resilience related factors positive affect, acceptance and engaged living with fatigue in patients with rheumatic diseases.

Methods: 57 patients with a rheumatic disease (rheumatoid arthritis, 70%; osteoarthritis, 11%; others, 9%) completed an online questionnaire. Fatigue was assessed with SF-36 vitality scale; pain with a VAS; Resilience with BRS and resilience related factors with PANAS (positive affect), AAQ-II (Acceptance) and ELS (engaged living). Data were analysed with hierarchical multiple regression analyses.

Results: Resilience, positive affect, acceptance and engaged living were multivariate significantly related to fatigue ($R^2 = 0.54$; $P \leq 0.001$). Resilience ($\beta = 0.29$; $P \leq 0.05$) and positive affect ($\beta = 0.39$; $P \leq 0.01$) were significant individual predictors of lower fatigue in multiple regression analysis. Acceptance and engaged living were not significantly related with fatigue in the multivariate model. The relationship between resilience and fatigue was partially mediated by positive affect. When pain was included in the model the relations of resilience ($\beta = 0.27$; $P \leq 0.05$) and positive affect ($\beta = 0.34$; $P \leq 0.05$) with fatigue remained significant.

Conclusions: Resilience and positive affect may be predictors of decreased fatigue in rheumatic patients. Further longitudinal studies are needed to examine the causality of these relationships.

References:

- [1] Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The brief resilience scale: Assessing the ability to bounce back. *Int J Behav Med* 2008;15(3):194–200.

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SAT0733-HPR A QUALITATIVE STUDY ON OBSTACLES AND MOTIVATIONS TO VACCINATIONS IN RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) is characterized by an increased risk of infection, which is further enhanced by the associated treatments like corticosteroid therapy or biologicals. To diminish this risk, influenza and