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SAT0725-HPR **COMPARATIVE ANALYSES OF RESPONSIVENESS BETWEEN THE RHEUMATOID ARTHRITIS IMPACT OF DISEASE (RAID) SCORE, OTHER PATIENT REPORTED OUTCOMES AND DISEASE ACTIVITY MEASURES: SECONDARY ANALYSES FROM THE ARCTIC STUDY**

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Background: The RAID score is a patient-derived patient reported outcome measure (PROM), developed by a EULAR task force, that assesses the impact of RA on seven important domains. Responsiveness of the RAID score was assessed in the preliminary validation,¹ but more data is needed on the sensitivity to change, especially compared to other PROMs and other conventional outcome measures.

Objectives: The objective of this study was to assess the changes in the RAID score in patients with early RA during the first six months of intensive DMARD treatment, and to evaluate the responsiveness of RAID after 3 months compared to other PROMs and conventional measures of disease activity.

Methods: RA patients with short disease duration were followed in the 24 month treat-to-target strategy ARCTIC trial.² The responsiveness of the RAID score was evaluated by calculating the Standardised Response Mean (SRM) followed by the Relative Efficiency (RE) with respect to the Ritchie Articular Index. SRMs and RE were also calculated for other PROMs and clinical outcome measures. An SRM with absolute value above 0.80 was considered high.

Results: 230 RA patients were included. The mean symptom duration was 7.09 ±5.40 (±SD) months, the baseline mean RAID score was 4.49±2.14. At the 3 month follow-up, the mean change score for RAID was -2.25±1.98 and the SRM was -1.13 (-1.33 to -0.96) (table 1).

Table Mean change±SD and standardised response mean (SRM) with 95% confidence intervals for patients reported outcomes and conventional disease activity measures at 3 and 6 months

	3 months		6 months	
	Change, mean±SD	SRM (95% CI)	Change, mean±SD	SRM (95% CI)
RAID	-2.25±1.98	-1.13 (-1.33 to -0.96)	-2.39±1.98	-1.21 (-1.38 to -1.06)
DAS	-1.71±1.04	-1.63 (-1.89 to -1.42)	-1.95±1.09	-1.80 (-2.04 to -1.60)
ESR	-10.9±15.0	-0.73 (-0.83 to -0.63)	-11.7±16.5	-0.71 (-0.84 to -0.59)
CRP	-9.68±18.4	-0.53 (-0.62 to -0.43)	-10.8±19.5	-0.55 (-0.63 to -0.48)
Swollen joint count	-8.86±6.89	-1.28 (-1.46 to -1.14)	-9.63±7.41	-1.30 (-1.46 to -1.17)
Ritchie Articular Index	-5.75±6.03	-0.95 (-1.12 to -0.80)	-6.33±6.30	-1.01 (-1.15 to -0.88)
Patient global assessment VAS	-28.3±24.2	-1.17 (-1.35 to -1.02)	-30.2±25.2	-1.20 (-1.38 to -1.05)
Physician global assessment VAS	-26.2±19.2	-1.37 (-1.54 to -1.22)	29.2±20.7	-1.41 (-1.58 to -1.27)
PROMIS physical function	14.8±13.7	1.08 (0.96 to 1.22)	15.5±14.0	1.11 (0.97 to 1.26)
Fatigue VAS	-13.3±29.3	-0.45 (-0.60 to -0.32)	-16.0±29.8	-0.54 (-0.68 to -0.40)
Joint pain VAS	-27.7±24.4	-1.14 (-1.31 to -0.98)	-29.5±25.2	-1.17 (-1.35 to -1.02)
SF-36 Physical component	8.99±9.02	1.00 (0.84 to 1.18)	9.19±9.47	0.97 (0.83 to 1.14)
SF-36 Mental component	3.89±10.6	0.37 (0.23 to 0.52)	3.02±10.8	0.28 (0.15 to 0.43)

The RAID score was more efficient in detecting change than the Ritchie Articular Index and also demonstrated relatively high efficiency in detecting change compared to other PROMs and clinical outcome measures (figure 1).

Abstract SAT0725HPR – Figure 1. Relative efficiency to tender joint count (Ritchie Articular Index) of the various outcomes reflecting disease activity at 3 months follow-up (Ritchie Articular Index = reference with a relative efficiency of 1.00).

Conclusions: The RAID score proved to be highly responsive to change in RA patients with short disease duration who followed a treat-to-target strategy. The RAID score was efficient in detecting change compared to other PROMs and conventional disease activity measures.

REFERENCES:

- [1] Gossec, et al. *ARD* 2011;70:935–42.
- [2] Haavardsholm, et al. *BMJ* 2016;354:i4205, 2016.

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SAT0726-HPR **IMPROVEMENT OF HAND FUNCTION, PHYSICAL CAPACITY AND QUALITY OF LIFE OF SYSTEMIC SCLEROSIS PATIENTS AFTER AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANTATION**

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Background: Systemic sclerosis (SSc) is characterised by skin thickening and visceral involvement, leading to impairment of physical function, daily life activities and quality of life. Severe cases usually have poor prognosis, despite conventional immunosuppressive treatment. Autologous hematopoietic stem cell transplantation (AHSCT) has been investigated as treatment for patients with severe SSc and promotes reduction of skin thickening and at least stabilisation of visceral involvement. There are no reports in the literature addressing the influence of AHSCT on hand function and physical capacity of SSc patients.

Objectives: To evaluate the impact of AHSCT on skin involvement, hand function, physical capacity and quality of life (QoL) of SSc patients.

Methods: This is a prospective longitudinal study of a cohort of 27 SSc patients who underwent AHSCT at a University Hospital in the state of São Paulo, Brazil. Patients were evaluated before, and at 6, 12 and 24 months after transplant. The evaluations included modified Rodnan skin score (mRSS), hand function (hand-grip strength, finger-to-palm distance – FTP, range of motion measures, DASH and COCHIN questionnaires), mouth opening, six-minute walk test (6MWT) and quality of life questionnaire (SF-36). Results were subjected to statistical analyses and significance levels were established at p<0.05.

Results: Twenty-seven patients were evaluated before and at 6 months after transplant, 22 of which were additionally evaluated at 12 months, and 13 patients at 24 months post-transplant. At 12 months after AHSCT, patients presented significant improvement of mRSS (p<0.01), hand grip strength (p<0.01), range of motion of hands (p<0.01, except for 1 metacarpophalangeal joints of both hands), FTP distance (p<0.01), DASH (p<0.01), COCHIN (p<0.01), mouth opening (p<0.01), 6MWT distance (p=0.01), and physical (p<0.01) and mental (p=0.02) components of the SF-36, when compared to pre-transplant evaluations. Significant correlations were observed between skin involvement and range of motion measures (dominant hand: R=-0.65, p<0.01; non-dominant hand: R=-0.59,

$p < 0.01$), and between the 6MWT distance and quality of life ($R = 0.62$, $p < 0.01$), and between DASH and quality of life ($R = -0.48$, $p = 0.03$).

Conclusions: AHSCT enhances the functional status of SSc patients, significantly improving skin involvement, hand function, physical capacity and quality of life. These results can be interpreted as positive outcomes of AHSCT for SSc.

REFERENCES:

- [1] van Laar, et al. JAMA 2014;311(24):2490–8.
- [2] Del Papa, et al. Bone Marrow Transplantation 2017;52:53–58.
- [3] Burt, et al. Lancet 2013;381(9872):1116–24.
- [4] Sullivan, et al. N Engl J Med 2018;378:35–47.

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SAT0727-HPR CRITERION VALIDITY AND RELIABILITY OF A SUBMAXIMAL TREADMILL TEST IN JUVENILE IDIOPATHIC ARTHRITIS PATIENTS

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Background: For both research purposes and daily clinical practice, a feasible exercise test with acceptable measurement properties is needed to measure exercise capacity in juvenile idiopathic arthritis (JIA) patients.

Objectives: To evaluate the criterion-validity, test-retest reliability and inter-rater reliability of an eight-minute submaximal treadmill test, which can be used to estimate VO_{2peak} ¹, in JIA patients.

Methods: 59 patients with oligo- ($n=30$) and polyarticular ($n=29$) JIA (mean age (SD) 13.6 (2.2), 50 girls) participated in this study. They performed a maximal treadmill test until exhaustion to measure the VO_{2peak} directly and the eight-minute submaximal treadmill test to estimate the VO_{2peak} . A standardised formula was used to estimate the VO_{2peak} ¹. To evaluate the reliability, 37 patients also performed the submaximal treadmill test twice on the same day 1–4 weeks after the initial test. Paired t-tests were used to test potential differences between the tests. Criterion validity and reliability were evaluated with two ways mixed interclass correlation coefficient_{agreement} (ICC). Limits of agreement (LoA) (Bland and Altman method), standard error of measurement ($SEM_{agreement}$) and smallest detectable change (SDC_{95}) were calculated to evaluate the measurement error of the submaximal treadmill test.

Results: No significant difference was found between the observed and estimated VO_{2peak} ($mL \cdot kg^{-1} \cdot min^{-1}$), 44.8 (8.8) vs 43.2 (10.3) respectively, $p=0.18$. The single ICC (95% CI) value at individual level between the estimated and measured VO_{2peak} was moderate; ICC 0.55 (0.34–0.70) while the ICC at group level was good; 0.71 (0.51–0.82). The measurement errors were large (SEM 6.5 and SDC_{95} 18.0). The single ICC value for test-retest reliability and interrater reliability were good to excellent, 0.84 (0.71–0.91) and 0.92 (0.83–0.96), respectively. The ICC value at group level for test-retest reliability and interrater reliability were excellent, 0.91 (0.83–0.96) and 0.96 (0.91–0.98), respectively. There were no significant differences between estimated VO_{2peak} ($mL \cdot kg^{-1} \cdot min^{-1}$) when comparing the results from the three performed submaximal treadmill tests. The measurement errors were moderate/large for both test-retest reliability and interrater reliability (table 1). The Bland Altman plots showed no systematic differences, but confirmed the large variability for both the validity and reliability (figure 1).

Table. Reliability and measurement error of the submaximal treadmill test

	Test*	Retest*	Difference*	$SEM_{agreement}$	LoA	SDC_{95}
Est VO_{2peak} ($mL \cdot kg^{-1} \cdot min^{-1}$)	44.9 (9.4)	44.3 (11.0)	0.6 (5.9)	4.1	–11.0– 12.0	11.4
	Tester 1*	Tester 2*	Difference*	$SEM_{agreement}$	LoA	SDC_{95}
Est VO_{2peak} ($mL \cdot kg^{-1} \cdot min^{-1}$)	44.3 (11.0)	42.7 (10.5)	1.6 (4.1)	3.1	–6.4–9.7	8.6

*Values are mean (SD).

Abstract SAT0727HPR – Figure 1. Limits of agreement for VO_{2peak} ($mL/kg/min$) for criterion validity (A), test-retest (B) and interrater reliability (C).

Conclusions: The submaximal treadmill test is valid for use in JIA patients on group level, but showed only moderate validity on an individual level. The test-retest and intra-rater reliability is good to excellent; however, the measurement errors are large. Our findings indicate that the submaximal treadmill test is not optimal for use in daily clinical practice to estimate VO_{2peak} in individual patients and it is important to be aware of the large measurement errors.

REFERENCE:

- [1] Ebbeling, et al. 1991.

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SAT0728-HPR EVALUATION OF THE EFFECTIVENESS OF AN EDUCATIONAL PROGRAM IN PATIENTS WITH OSTEOARTHRITIS OF THE KNEES

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Background: Osteoarthritis (OA) is the most common chronic joint disease, affecting about 50% of the population aged 65 or over, its incidence tends to increase according to the age.

Educational intervention is considered an important part of treatments for chronic diseases. However, in the literature, for OA there is still no standard of educational program to be followed.

Objectives: To evaluate the effectiveness of the educational intervention in patients with knee osteoarthritis regarding to pain, function, anxiety and quality of life

Methods: Sixty patients with knee OA, both genders and age between 40 to 80 years, were included. The patients were randomised into 2 groups: Experimental Group (EG) received an educational intervention, composed of 5 consecutive sessions held once a week, with a duration of 60 min each session. At the end of the last class, a booklet was given to each patient with all the content of the classes. In addition to the educational program, this EG also received a TENS (Transcutaneous Nerve Electrical Stimulation) treatment performed twice a week for 5 weeks for 40 min each session. Control group (CG) received the same TENS treatment as EG group.

The evaluations were performed at baseline, 4 and 12 weeks after baseline with the following instruments: numerical pain scale (NPS) for pain; WOMAC questionnaire and 6 min walk test for function; IDATE questionnaire for anxiety and SF-36 questionnaire for quality of life.

Results: Regarding the variables pain, function, anxiety and quality of life, no statistically significant difference was found between groups over time. (table 1)

The intragroup comparisons show no improvement in both groups between T0 and T4 and T0 and T12 for: pain; function total and pain score of WOMAC and domains physical role functioning and social role functioning of SF-36 (table 1)