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FACTORS ASSOCIATED WITH HANDGRIP STRENGTH IN YOUNG ADULTS WITH JUVENILE IDIOPATHIC ARTHRITIS

Keywords: Rare/orphan diseases, Inflammatory arthritides, Sarcopenia

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Background: Decreased handgrip strength is associated with many adverse outcomes, including increased all-cause mortality, and is considered a key criterion for sarcopenia [1, 2].

Objectives: The study aims to determine handgrip strength in young adults with juvenile idiopathic arthritis (JIA) and to detect factors associated with low handgrip strength.

Methods: The single-center, cross-sectional study included 46 young adults with JIA. Anthropometric and clinical characteristics were collected, including assessment of disease activity by DAS28 and JADAS27 indices and calculation of articular and extra-articular damage by JADI-A and JADI-E indices. To determine hand grip strength, dynamometry with Jamar hand dynamometer, three times for both hands with the time of rest and fixed the highest value, was used. Thresholds for reduced muscle strength were as follows: <27 kg for males; <16 kg for females. To determine the bone mineral density (BMD) and bone mineral content (BMC) dual photon X-ray absorptiometry (DXA) was done. Calculation of skeletal mass index (SMI=appendicular lean mass divided by height^2) was counted. Logistic regression analyses estimated the associations of the following independent variables: age, sex, BMI, disease activity, articular and extra articular damage, BMD, BMC, on the dependent variable handgrip strength. Statistical significance was defined as a p-value <0.05.

Results: The study involved 26 female and 20 male patients. The average age of the patients was 24.4±5 years; the average age at the onset of the disease was 10.1±4.4 years. Thirty-two patients had reduced muscle strength (70%). Factors associated with handgrip strength are presented in Table 1.

Table 1. Univariate logistic regression analyses: factors associated with reduced handgrip strength in young patients with JIA

Variable		Coefficient, b±m	P-value	Odds ratio, OR (95% CI)	AUC (95% CI)
Age, years		0.073 ± 0.066	0.262	-	-
Sex	f				0.75 (0.58
	m	-2.15 ± 0.80	0.00	0.12 (0.02 - 0.56)	- 0.87)
BMI, kg/m^2		-0.25 ± 0.12	0.043	0.78 (0.61 - 0.99)	0.74 (0.57 - 0.86)
Disease duration, years		0.17 ± 0.07	0.020	1.18 (1.03 – 1.37)	0.76 (0.60 – 0.89)
ESR, mm/hour		0.062 ± 0.032	0.055	-	-
C-reactive protein, mg/l		0.007 ± 0.010	0.521	-	-
Disease activity by DAS28		0.49 ± 0.27	0.072	-	-
Disease activity by JADAS27		0.16 ± 0.07	0.022	1.18 (1.02 – 1.35)	0.77 (0.60 – 0.89)
Current glucocorticoid use		1.39 ± 0.87	0.109	-	-
Glucocorticoid cumulative dose, mg		0.00026 ± 0.00015	0.081	-	-
Articular damage index JADI-A		0.79 ± 0.39	0.045	2.20 (1.02 – 4.75)	0.78 (0.62 – 0.90)
Extra-articular damage index JADI-E		0.91 ± 0.48	0.059	-	-
Health Assessment Questionnaire, HAQ		1.28 ± 0.76	0.092	-	-
BMD total, g/cm^2		-9.29 ± 3.64	0.011	0.001 (0.000 - 0.12)	0.77 (0.60 – 0.89)
Fat arms, %		0.086 ± 0.043	0.010	1.09 (1.02 - 1.16)	0.78 (0.62 -0.90)
Lean mass arms, g		-1.14 ±0.34	0.001	0.32 (0.16 – 0.63)	0.94 (0.81 – 0.99)
Fat legs, %		0.093 ± 0.035	0.007	1.10 (1.03 - 1.17)	0.77 (0.60 – 0.89)
Lean mass legs, g		-0.73 ± 0.22	0.001	0.48 (0.31 – 0.74)	0.96 (0.84 – 0.99)
Appendicular lean mass, g		-0.49 ± 0.14	0.001	0.61 (0.46 -0.81)	0.96 (0.84 -0.99)
Lean mass total, g		-0.00025 ± 0.00008	0.001	0.9997 (0.9996-0.9999)	0.94 (0.82 – 0.99)
Skeletal mass index, kg/m^2		-2.29 ± 0.73	0.002	0.10 (0.02 – 0.42)	0.97 (0.86 – 0.99)

Conclusion: The results of our study demonstrate a high prevalence of low handgrip strength, up to 70 % among young patients with JIA. In these participants, lower BMI, lower total BMD and arms, legs, total lean mass and SMI, longer disease duration, higher disease activity by JADAS27 and articular index damage JADI-A, and higher percentage fat were linked to reduced handgrip strength.

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ARTHRITIS PHENOTYPE FOLLOWING CHECK POINT INHIBITION IS UNSPECIFIC AND SERONEGATIVE IN MOST PATIENTS – RESULTS FROM THE PROSPECTIVE OBSERVATIONAL RIMRA STUDY

Keywords: Inflammatory arthritides, Disease-modifying drugs (DMARDs), Malignancy

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Background: Patients with rheumatic immune related adverse events (irAEs) after cancer therapy with immune check point inhibitors represent a new challenge for rheumatologists. The incidence of irAEs is expected to increase and more knowledge about pathogenesis, disease course and treatment response is needed. The ongoing RIMRA (Rheumatic Immune Related Adverse events in patients treated with check point inhibitors) study aims to describe clinical presentation, disease course and outcome of rheumatic irAEs in patients treated with immune check point inhibitors.

Objectives: To describe baseline characteristics and treatment of arthritis patients included in the RIMRA cohort.

Methods: RIMRA is an ongoing prospective, observational study including adult patients with de novo symptoms of rheumatic disease or flare of established rheumatic disease after > 1 dose of treatment with immune check point inhibitor. Eligible patients who are referred to Rheumatology departments at Diakonhjemmet Hospital, (DH), Oslo University Hospital Rikshospitalet (RH), University Hospital of North Norway (UNN), Ålesund Hospital (ÅH) and Hospital of Southern Norway (HSN) are asked to participate in the study. Clinical and biochemical data

Table 1. Demographics/baseline characteristics

N=56		
Age (y)		65 (12)
Women n (%)		33 (59)
Cancer diagnosis n (%)	Melanoma	30 (56)
	Lung cancer	11 (21)
	Urothelial/renal cancer	6 (11)
	Hodgkin lymphoma	2 (3,5)
	Laryngeal cancer	1 (,1,8)
	MPNST	1 (1,8)
	Colon cancer	1 (1,8)
Check point inhibitor n (%)	Anti-CTLA-4	0 (0)
	Anti-PD1/PDL-1	35 (67)
	CTLA-4 and PD1/PD-L1	15 (29)
	PD1+LAG-3	1 (1,9)
	CTLA-4 and PD-1 and PD1+LAG-3	1 (1,9)
Preexisting rheumatic disease n (%)	Psoriatic arthritis	2 (3,5)
	Seronegative RA	1 (1,8)
	Seropositive RA	4 (7)
CTCAE grade n (%)	G1	15 (28)
	G2	24 (44)
	G3-4	15 (28)
Anti-CCP/RF positive n (%)		7 (13)
ESR mm/h		35 (29)
CRP mg/L		30 (40)
SJC (66 joints)		5 (7)
TJC (68 joints)		5 (8)
Physician global VAS mm (0-100)		36 (26)
Patient global VAS mm (0-100)		53 (24)
CDAI		18 (15)

Values are mean (SD), if not otherwise indicated.

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