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SERUM BIOMARKERS BEFORE AND AFTER A SIX MONTHS STRUCTURED WEIGHT LOSS INTERVENTION IN PATIENTS WITH PSORIATIC ARTHRITIS AND OBESITY COMPARED WITH CONTROLS

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Background: Obesity is highly overrepresented in psoriatic arthritis (PsA) and associated with increased disease activity. We have previously shown in 41 patients with PsA (Caspas criteria) and obesity (here body mass index BMI $\geq 33\text{kg/m}^2$) that weight loss treatment including Very Low Energy Liquid Diet (VLED) resulted in a median weight loss of 18.6% and concomitantly a significant improvement in CRP and disease activity in joints, entheses and skin at six months (M6) follow up.

Objectives: To analyze serum biomarkers associated with inflammation, cartilage and bone metabolism before and after weight loss treatment in PsA patients compared with controls, without PsA or psoriasis, matched for age, sex and weight.

Methods: The weight loss treatment included VLED (640 kcal/day) during 12 or 16 weeks (depending on baseline (BL) BMI <40 or $\geq 40\text{kg/m}^2$), followed by a structured reintroduction of an energy restricted diet. cs/bDMARDs were held unchanged from 3 months before BL until M6. The patients were assessed with 66/68 joints counts.

Serum levels of vascular endothelial growth factor (VEGF), S100A8, S100A9, matrix metalloproteinases (MMP-3, 8 and 13), hepatocyte growth factor (HGF), B-cell activating factor (BAFF), Dickkopf (DKK)-1, sclerostin (SOST), soluble receptor activator of nuclear factor- κ B ligand (RANKL), osteoprotegerin (OPG) and aggrecan were measured at BL and M6 in PsA patients and controls with Magnetic Luminescence Assays (R&D-systems) following the manufacturer's instructions using a Bio-Plex 200 system (BioRad). Serum cartilage oligomeric matrix protein (COMP) (R&D-systems), carboxyterminal telopeptide of type-1 collagen (CTX-1) (Immunodiagnosics systems: IDS) and osteocalcin (IDS) were measured with enzyme-linked immunosorbent assay (ELISA).

Results: Totally 41 PsA patients [age median 54 (IQR 48-62) yrs; 63 % women] and 39 controls [age 55 (46-60) yrs, 72 % women] were included. At M6 the weight-loss since BL was 18.7 (14.6-26.5) kg in the PsA patients and 22.6 (14.7-28.4) kg in the controls ($p=0.546$). Significant reductions in DAS28CRP [2.9 (2.1-3.7) vs. 2.4 (1.7-3.0)] and DAPSA [15.3 (6.6-29.1) vs. 11.0 (2.8-17.6)] ($p<0.001$) were seen in the PsA patients.

At BL serum levels of the biomarkers were not significantly different in patients vs. controls.

After weight-loss significant reductions were seen in serum VEGF, S100A8, MMP-8, HGF, BAFF, COMP and DKK-1, whereas serum SOST and CTX-1 were significantly increased in both patients and controls (Table 1). The other biomarkers were not significantly changed.

Conclusion: Weight loss in patients with PsA and controls was associated with lowered serum levels of several biomarkers related to inflammation and cartilage degradation, along with increased levels of biomarkers for bone turnover.

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Table 1.

	PsA (N=41)	PsA (N=41)	PsA	Ctrl (N=39)	Ctrl (N=39)	Ctrl
	BL median (IQR)	M6 median (IQR)	p-value	BL median (IQR)	M6 median (IQR)	p-value
BMI (kg/m ²)	35.2 (34.1-38.1)	29.8 (26.6-31.5)	<0.001	37.7 (36.7-41.5)	30.4 (27.9-33.2)	<0.001
CRP (mg/L)	4 (2-8.5)	2 (1-6.5)	0.041	4 (2-6)	2 (1-4)	<0.001
VEGF (pg/mL)	79.6 (55.9-113.5)	69.6 (53.1-105.3)	0.010	82.3 (48.0-125.9)	65.0 (42.2-85.5)	<0.001
S100A8 (pg/mL)	75.5 (48.0-99.5)	63.3 (42.8-93.6)	0.021	71.8 (40.5-101.0)	63.3 (40.3-85.7)	0.006
MMP-8 (pg/mL)	9975.4 (6811.8-14154.8)	9202.6 (5767.1-12049.6)	0.017	7494.7 (4805.2-12616.9)	7218.3 (3466.0-9785.3)	0.112
HGF (pg/mL)	327.9 (250.3-413.6)	271.3 (206.9-331.0)	<0.001	307.9 (239.1-348.3)	239.8 (200.3-276.0)	<0.001
BAFF (pg/mL)	794.4 (716.4-868.2)	674.6 (613.2-790.5)	<0.001	760.8 (664.1-827.3)	678.1 (603.7-719.8)	<0.001
COMP (pg/mL)	266.1 (209.8-366.0)	217.0 (156.0-272.0)	0.008	293.6 (185.2-340.5)	221.6 (163.5-300.0)	0.018
Dkk-1 (pg/mL)	3608.4 (3055.0-4401.3)	3382.6 (2802.5-4218.2)	0.002	3635.8 (3212.8-4380.6)	3480.4 (2948.9-4087.3)	0.007
SOST (pg/mL)	52.9 (32.5-65.4)	60.3 (37.2-85.6)	0.014	50.0 (30.8-79.3)	61.3 (35.7-81.4)	0.019
CTX-1 (ng/mL)	0.27 (0.20-0.39)	0.51 (0.35-0.64)	<0.001	0.23 (0.16-0.34)	0.50 (0.30-0.61)	<0.001

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CIRCULATING ENDOTHELIAL CELLS AS A MARKER OF CARDIOVASCULAR DISEASES IN PATIENTS WITH PSORIATIC ARTHRITIS

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Background: Psoriatic arthritis (PsA) is a chronic inflammatory joint disease which develops in patients with psoriasis. Mortality among patients with PsA is 1.28 times higher than population levels and in most cases it is caused by cardio-vascular diseases (CVD). Those patients have increased risk of clinical and subclinical CVD, mostly due to endothelial dysfunction (ED) and accelerated atherosclerosis. Elevated levels of circulating endothelial cells (CEC) have been described in different cardiovascular pathologies, suggesting their potential use as diagnostic biomarkers for dysfunction of endothelium.

Objectives: To identify the potential role of circulating endothelial cells as a marker of cardiovascular diseases in patients with psoriatic arthritis.

Methods: In total, ninety-four patients with PsA, who fulfilled the disease criteria (CASPAR) were examined using standard diagnostic methods (including C-reactive protein (CRP), lipid profile) and evaluation endothelium-dependent vasodilation in response to reactive hyperemia (EDVD). Circulating endothelial cells were determined in the peripheral venous blood samples by flow cytometry and counted according to a standardized protocol using a fluorescence microscope after acridine orange labeling. The control group, which were consisted from thirty healthy adults were also examined.

Results: CEC were quantified in patients with PsA (7.15 ± 0.19 cells mL^{-1}) and in the control group (4.05 ± 0.11 cells mL^{-1}). Comparing two groups of patients, endothelial circulating cell level was significantly different ($p = 0.0001$). Finally, we analyzed the relationship between CEC count, comorbidities, cardiovascular risk factors and EDVD in patients with PsA. Increased CEC levels were associated with obesity ($r=0.62$), duration of disease ($r=0.65$), age ($r=0.67$), increased CRP ($r=0.76$), high blood pressure ($r=0.87$) and decreased EDVD ($r=-0.91$).

Conclusion: CEC counts were significantly higher in patients with PsA, positively correlated with the main factors of CVD, and another specific marker of ED - EDVD. Elevated CEC levels were also associated with high concentrations of CRP, which plays a direct role in promoting vascular inflammation, vessel damage and clinical CVD events. In conclusion, increased CEC counts provide a direct proof of endothelial damage in patient with PsA and a clinically informative diagnostic tool for endothelial damage in pre-symptomatic CVD. As CEC are one of the most sensitive biomarker for ED, further efforts should concentrate on improving the sensitivity of its detection in order to increase diagnostic sensitivity.

REFERENCES:

- [1] Maura Farinacci, Thomas Krahn, Wilfried Dinh, et al. Circulating endothelial cells as biomarker for cardiovascular diseases. Res Pract Thromb Haemost, Vol. 3, Issue, 2019, P.49-58;
- [2] C. Horreau, C. Pouplard, E. Brenautet, et al. Cardiovascular morbidity and mortality in psoriasis and psoriatic arthritis: a systematic literature review. J Eur Acad Dermatol Venereol, Vol. 27, Issue 3, 2013, P.12-19;
- [3] Frank Verhoeven, Clément Prati, Céline Demougeot, Daniel Wendling. Cardiovascular risk in psoriatic arthritis, a narrative review. Joint Bone Spine, Vol. 87, Issue 5, 2020, P.413-418;

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IS ENTESITIS A SONOGRAPHIC BIOMARKER OF DISEASE SEVERITY IN PSORIATIC ARTHRITIS? THE LINK BETWEEN ULTRASOUND ENTSEAL ABNORMALITIES AND PERIPHERAL JOINT EROSION DAMAGE

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