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FRI0266 ABERRANT PD-1 AND VISTA EXPRESSION ON CD4+ TH-CELLS IN GIANT CELL ARTERITIS

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Background: The immune system controls immune responses by balancing positive and negative immune checkpoint (IC) molecules in cell-cell interactions. These co-stimulatory and co-inhibitory molecules allow complete T-cell activation and T-cell effector functions giving rise to an optimal immune response while preventing autoimmunity (1). Failure of tolerance results in the initiation and propagation of pathogenic T-cell responses leading to the development of autoimmune diseases such as Giant Cell Arteritis (GCA). The latter is a complex illness of multiple pathogenic factors with important contributions of both innate and adaptive immunity in its initiation and perpetuation (2,3). Recently, a loss of inhibitory checkpoints on immune cells has been implicated in the immunopathology of GCA (4,5). The possible contribution of IC pathways to the dysregulation of Th-cells in GCA could aid in our understanding of GCA immunopathology.

Objectives: In this study, we aimed to investigate the expression of different IC molecules and their ligands by circulating monocytes, and functionally distinct populations of CD4+T-cells in peripheral blood samples from GCA-patients in comparison to healthy controls (HCs).

Methods: In a cross-sectional study, fresh blood samples were obtained from 30 GCA-patients with/without immunosuppressive treatment (glucocorticoids) and 18 sex and age-matched HCs. The frequency of the expression of different IC including CD80/86, PD-L1, PDL2 and V-domain Ig suppressor of T-cell activation (VISTA) were determined on total monocytes and subsets (classical, intermediate and non-classical). In parallel, expression of the corresponding receptors CD28, Cytotoxic T-Lymphocyte-associated antigen-4 (CTLA-4), Programmed death-1 (PD-1), and VISTA were determined on total CD4+ and subsets of Th-cells defined by CD45RA and CD25 expression of GCA-patients and HCs by flow cytometry.

Results: The frequencies of CD80/CD86+ and VISTA+ monocytes were decreased in GCA-patients compared to HCs. Proportions of circulating CD4+ Th-cells in GCA-patients were not different when compared to HCs. The frequencies of CD28 and CTLA-4 expressing CD4+Th-cells did not differ between GCA-patients and HCs. In contrast, proportions of PD-1 and VISTA expressing Th-cells were significantly decreased in GCA patients. Memory T-cells showed decreased expression of IC molecules. Interestingly, naïve T-cell populations already demonstrated loss of PD-1 and VISTA.

Conclusion: In GCA, lower frequencies of CD80/CD86+ and VISTA+ circulating monocytes were found. Likewise, decreased proportions of PD-1+CD4+ and VISTA+CD4+ Th-cells were noted. Decrease of negative IC on the surface of immune cells could add to the persistent activation of CD4+T-cells seen in GCA.

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FRI0267 DIAGNOSING POLYMYALGIA RHEUMATICA: THE IMPACT OF FAST-TRACK CLINIC AT HOSPITALIZATION RATES

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Background: Polymyalgia Rheumatica (PMR) is a common inflammatory autoimmune rheumatic disease, with the highest incidence rates seen in Scandinavia.

One of the challenges in the diagnosis of PMR is the lack of diagnostic tests specific for the disease. The diagnosis may require exclusion of other conditions that can present with polymyalgia symptoms and may lead to hospitalization. Only limited data on hospitalization rates among patients with PMR exists (1).

Ultrasound (US) may be useful in differentiating PMR from non-inflammatory conditions and can also be used for the diagnosis of concomitant Giant Cell Arteritis (GCA)

GCA Fast Track Clinics (FT) using US as the main diagnostic tool have shown both improvement in patient outcomes and decrease in the cost of care(2)

Objectives: To investigate the admission rates of patients diagnosed with PMR and the impact of the FT on these rates.

Methods: A FT clinic for patients suspected to have PMR was established at rheumatological outpatient clinic of South-West Jutland Hospital (serving 250.000inhabitants) in January 2018. Collaboration with the Emergency Medical department was established and patients with PMR symptoms referred to the hospital were examined at FT within 0-1 days, thereby avoiding hospitalization. Similarly, patients referred with PMR symptoms to the outpatient clinic by a GP, were examined at FT within 1-2 days. At FT a thorough history and clinical examination were performed including musculoskeletal and vascular US. Retrospectively data from patients diagnosed with PMR from 2013-2018 was analyzed.

Results: In a 6 years' period, 336 patients were diagnosed with PMR. 54 patients were diagnosed during hospitalization. Hospitalized patients were older (mean values $\pm$ standart deviaton-sd) 73,61 $\pm$ 8,96 vs 70,94 $\pm$ 7,97 years, p=0,024, with significantly higher initial C-reactive protein (CRP, mg/l) levels 99 $\pm$ 58,8 vs 43,9 $\pm$ 37,p<0,0001 and a shorter duration of symptoms(6,92 $\pm$ 5,5 vs 13,6 $\pm$ 13,7 weeks, p=0,0018). No differences were found regarding gender, PMR related symptoms, initial prednisolone dose and response to treatment. An equal annual distribution of the number of new diagnosed cases and hospitalizations rates during the first 5 years was found. After the implementation of the FT at January 2018 a significant decrease in hospitalization rates (19,4% vs 3,5% p=0,001) and inpatient days of care (4,15 $\pm$ 3,1 vs 1 $\pm$ 0, p<0,0001) was observed. The time from symptoms debut to diagnosis was also significantly decreased from 13, 74 to 6, 79 weeks (Table)

	Diagnosed at 2013-2017 N 268	Diagnosed at 2018 N 56	P values
Age (years) mean $\pm$ sd	71,3 $\pm$ 8,5	71,79 $\pm$ 6,6	n.s*
Gender (female)	58,2%	48,2%	n.s
Duration of symptoms (weeks) mean $\pm$ sd	13,74 $\pm$ 13,74	6,79 $\pm$ 4,72	0,001
Bilateral shoulder pain	95,9%	98,2%	n.s
Abnormal CRP and/or SR at debut	91,8%	100%	0,03
CRP (mg/l) mean $\pm$ sd	52,82 $\pm$ 48,3	56,5 $\pm$ 37,2	n.s
Morning stiffness	90,3%	92,7%	n.s
Hip pain or limited range of motion	71,4%	61,8%	n.s
RF and aCCP negative	95,1%	100%	n.s
Absence of other joint involvement	72%	75%	n.s
Initial prednisolone dose (mg) mean $\pm$ sd	18,44 $\pm$ 8,41	19,2 $\pm$ 9,25	n.s
Hospitalized n(%)	52 (19,4%)	2 (3,5%)	0.01
Inpatient days of care mean $\pm$ sd	4,15 $\pm$ 3,1	1 $\pm$ 0	0,0001

*n.s=non-significant