

BLOOD LYMPHOCYTE AND MONOCYTE SUBPOPULATION ABBERATIONS IN HIGH DISEASE ACTIVITY RHEUMATOID ARTHRITIS, ANKYLOSING SPONDYLITIS AND PSORIATIC ARTHRITIS

Alan Šučur¹, Zrinka Jajić², Marina Ikić Matijašević³, Asja Stipić Marković³, Darja Flegar¹, Nina Lukač⁴, Nataša Kovačić⁴, Danka Grčević¹



¹ Department of Physiology and Immunology, University of Zagreb School of Medicine, Croatia

² Department of Rheumatology, Physical Medicine and Rehabilitation, Clinical Hospital Center "Sisters of Mercy", Zagreb, Croatia

³ Department of Clinical Immunology, Rheumatology and Pulmology, University Hospital "Holy Spirit", Zagreb, Croatia

⁴ Department of Anatomy, University of Zagreb School of Medicine, Croatia



Introduction

Autoimmunity is presumed to be a major driving force in pathogenesis of chronic rheumatic diseases, including rheumatic arthritis (RA), ankylosing spondylitis (AS) and psoriatic arthritis (PsA). Even though the pathogenesis of RA, AS and PsA is associated with abnormalities in immune cells, the specificities and importance of T-cell, B-cell and monocyte aberrancies for a particular rheumatic disease have not yet been fully elucidated.

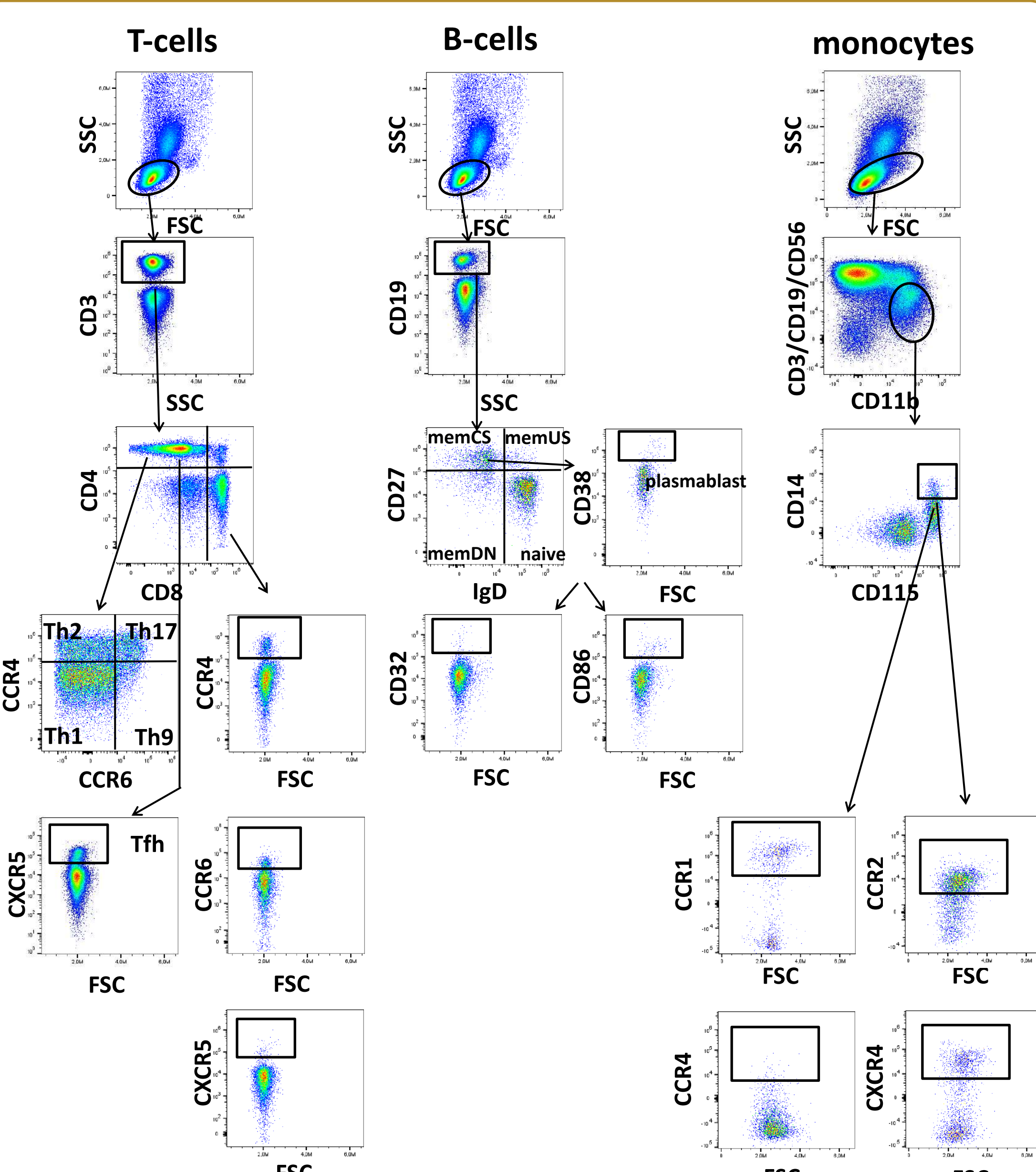
Aim

The aim of our study was to compare the frequency of circulatory T-cell, B-cell and monocyte subpopulations between RA, AS, PsA patients and controls, and to correlate them with the disease activity parameters in chronic patients with high disease activity.

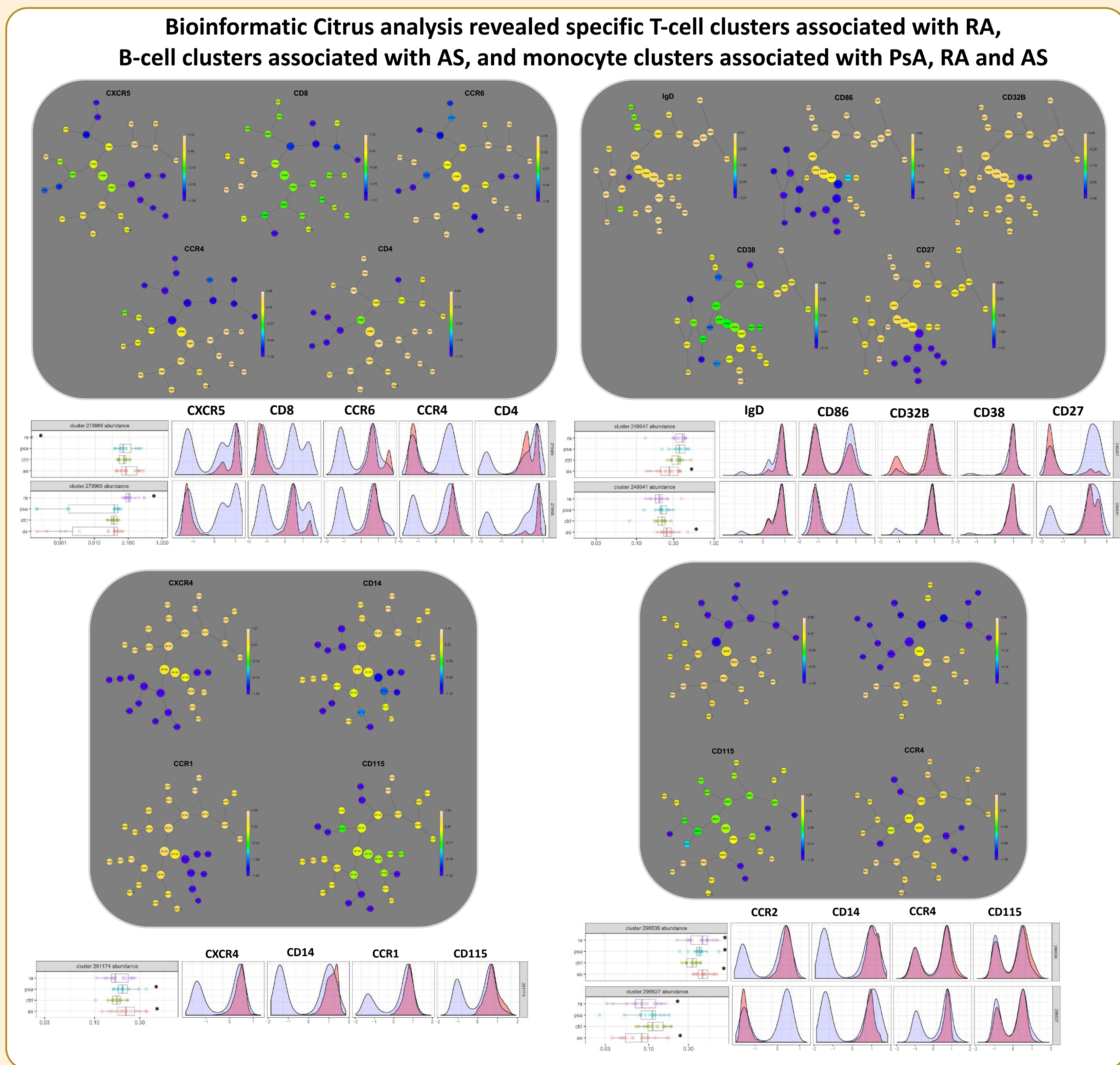
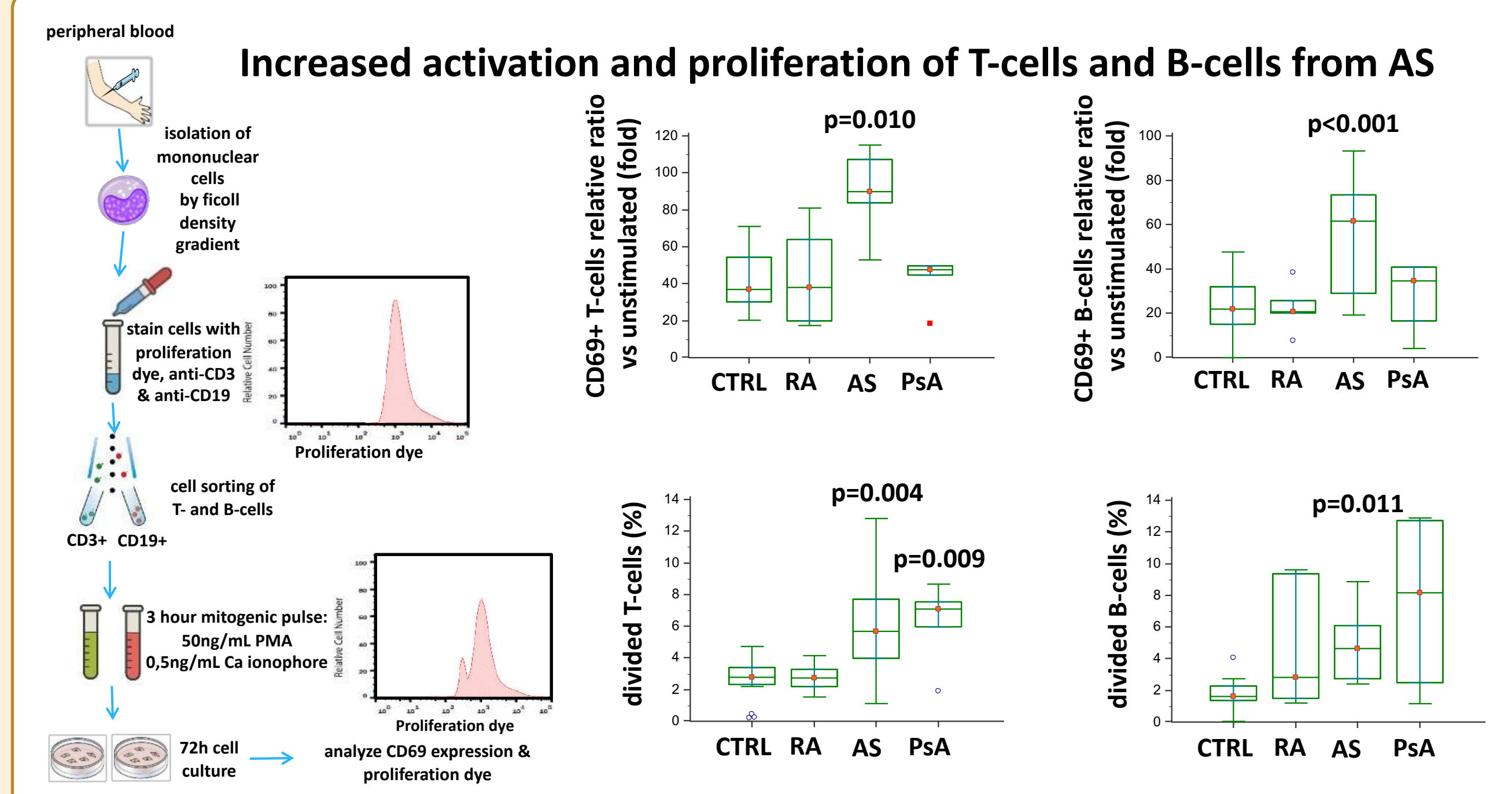
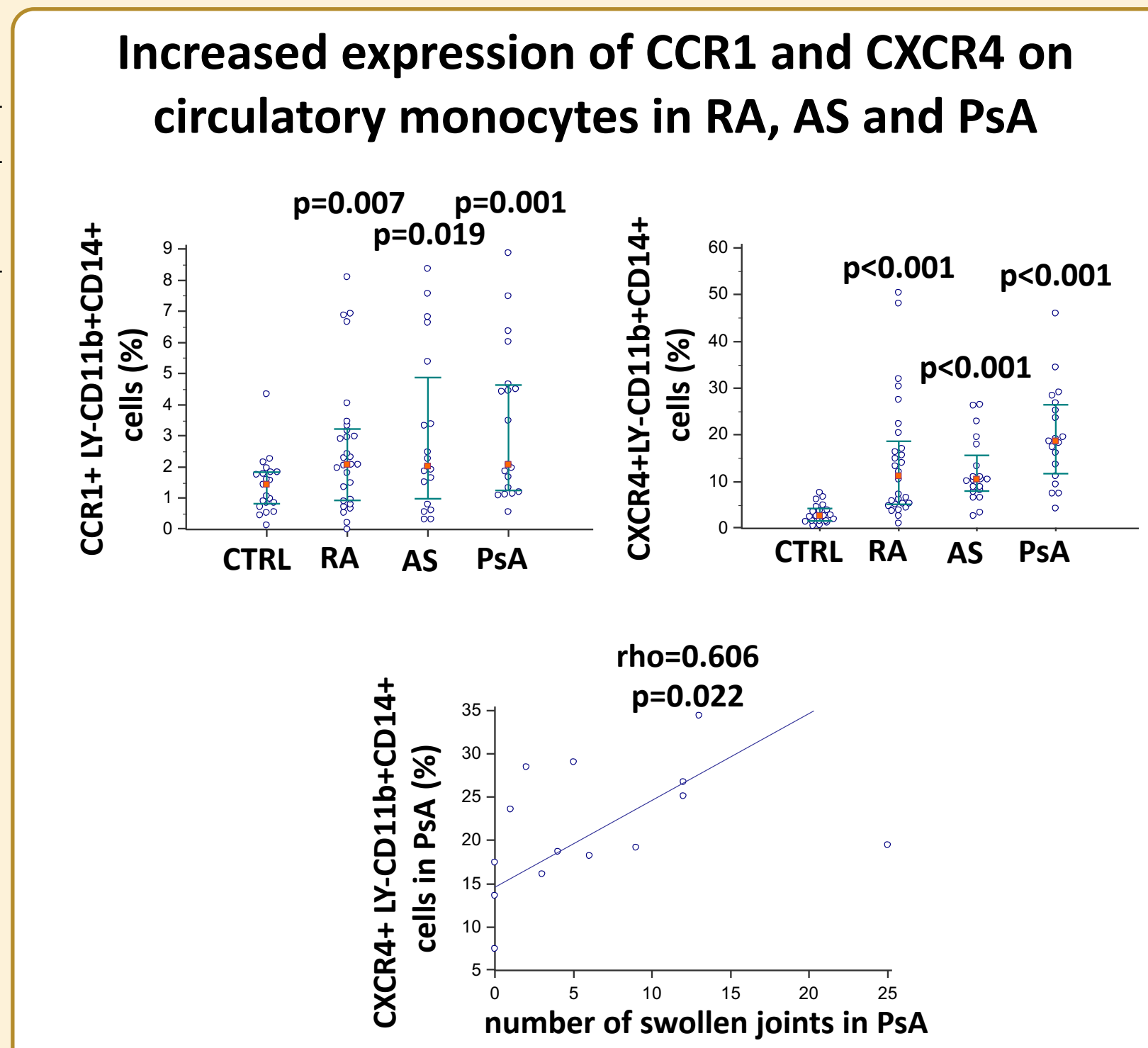
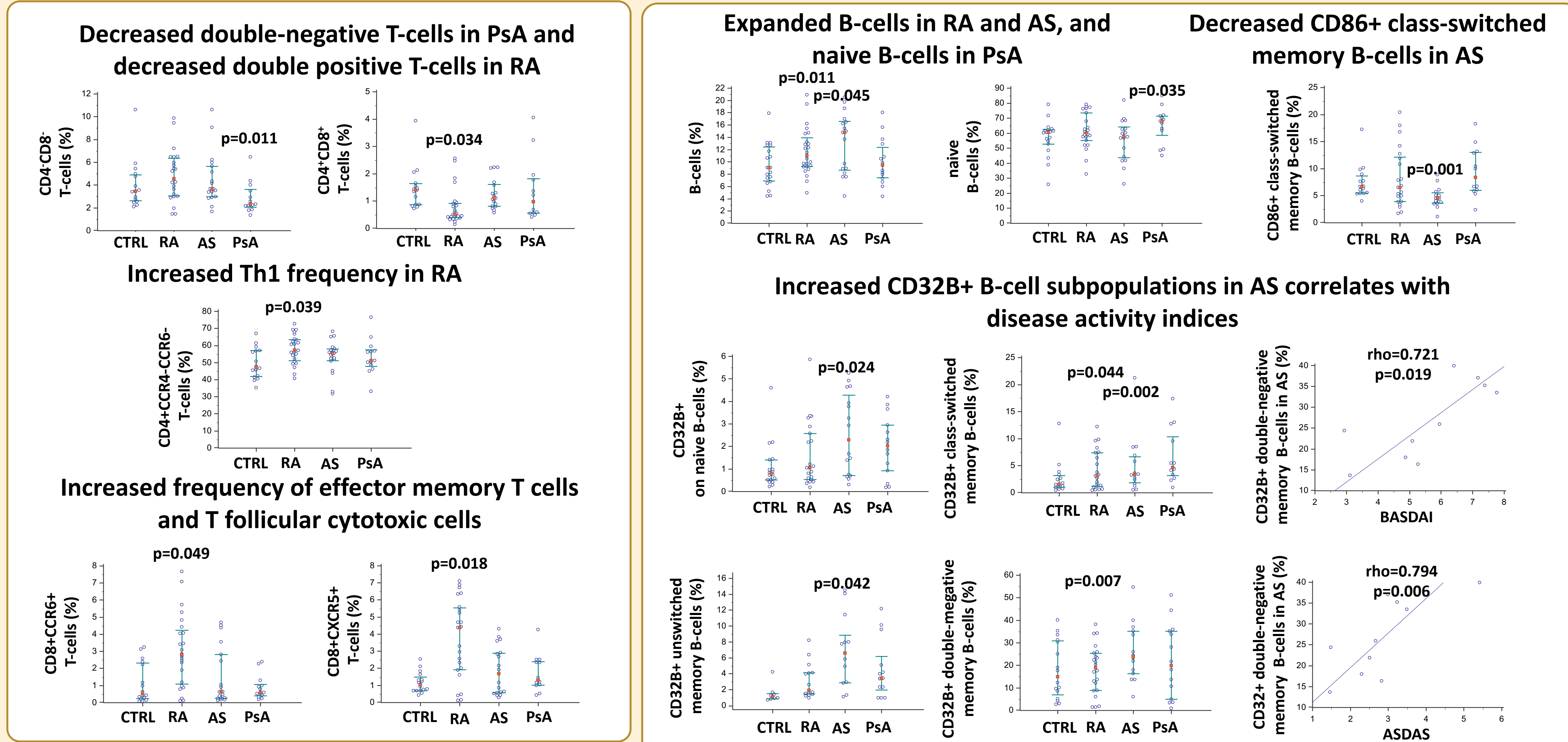
Patient characteristics

	Ankylosing spondylitis	Rheumatoid arthritis	Psoriatic arthritis	Controls
Age (years)	60 [52-66]	66 [52-73]	55 [51-64]	55 [43-68]
Gender (male/female)	9/13	3/27	9/13	6/18
Disease duration (years)	22 [14-29]	15 [7-21]	15 [10-21]	-
BASDAI	6.07 [4.90-7.21]	-	-	-
ASDAS	2.91 [2.41-3.46]	-	-	-
DAS28	-	6.2 [5.1-6.5]	5.6 [4.6-6.3]	-
CDAI	-	40.9 [24.8-44.2]	35.4 [17.5-45.1]	-
DAPSA	-	-	46.5 [36.5-54.6]	-
ESR (mm/h)	10 [4.0-16.0]	24.0 [18.0-31.0]	15.0 [8.5-29.0]	-
CRP (mg/L)	3.7 [0.65-15.6]	9.4 [3.1-19.6]	7.5 [2.5-12.7]	-
RF (IU/L)	-	38.6 [10.7-75.9]	-	-
aCCP (EU/L)	-	3.7 [1.1-284.5]	-	-
Tender joint count	26 [10-45]	17 [12-22]	15 [6-26]	-
Swollen joint count	1 [0-2]	7 [1-15]	5 [1-12]	-
Disease activity – physician VAS	7.3 [5.9-8.6]	6.7 [4.8-8.7]	6.5 [6.0-7.0]	-
Disease activity – patient VAS	7.0 [6.0-8.5]	7.2 [5.7-8.9]	6.7 [6.2-7.7]	-
NSAID	22	24	18	-
DMARD	0	24	4	-
Cortico	0	14	4	-

Flow cytometry gating strategy



Results



Conclusions

- PsA have lower double-negative T-cell frequency, while RA had lower double-positive T-cell frequency
- CD32B expression is increased on B-cell subpopulations in AS and is associated with disease activity indices in AS
- T- and B-cells from AS activate and proliferate more potently in vitro
- CCR1 and CXCR4 are upregulated on monocytes of RA, AS and PsA
- bioinformatic Citrus analysis revealed distinct T-cell, B-cell and monocyte clusters specifically associated with certain disease

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