A15 NAÏVE T CELL REDUCTION IS A PREDICTOR OF EVOLUTION TOWARDS RA IN PATIENTS WITH <12 MONTHS INFLAMMATORY ARTHRITIS

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Background T cell subset dys-regulation was previously shown to predict the ability to achieve remission in early rheumatoid arthritis (RA), independently of the treatment

received. Naïve cells frequency were the most discriminative circulating T cells although cytokine activated T cells (IRC) were informative. The aim of the current study is to determine whether T cell subset analysis performed within 4 h of blood collection can discriminate early between patients that will evolve towards UA or RA.

Methods 70 patients with <12 months IA were enrolled; age, DAS, CRP, symptom duration, RF and ACPA were included in the analysis. 6 colour flowcytometry was performed using standard protocols. 55 healthy controls (HC) were included to calculate age-corrected expected naïve cell frequency.

Results. Using newly developed 2010-RA criteria for diagnostic, 49 of the 70 patients evolved to RA, 11 remaining unclassified (UA). RA was associated with younger age (p=0.05, median 46 years compared to UA 65 years), higher DAS28 (p=0.008) compared to UA. There was no difference in symptom duration or RF. Naïve T cells are difficult to measure in the sixth decade as they decrease with age (R=−0.672, p<0.001 using HC) therefore, we accounted for this by calculating the deviation from normal expected naive cell frequency in patients. UA patients showed minimal deviation (median variation +8%) from expectation, whereas RA patients showed loss of naïve T cells (median -5%, p=0.037). Symptom duration and reduction of naïve cell were also correlated in RA (R=−0.528, p=0.020) in patients <6th decade of age. IRC were significantly increased in both UA and RA (p<0.006) compare to HC. Treg were reduced in the UA group compared to HC (p=0.028) but not RA in whom Treg were very variable. Binary logistic confirmed 4 parameters identifying RA: age<48 (p=0.0126), DAS28>3.2 (p=0.022), CRP>10 mg/l (p=0.026) and reduced naïve T cells (p=0.041). Patients fulfilling these three clinical RA parameters were all RA. In the 32 patients failing one or two of these three parameters, reduced naïve T-cells identified 94% of these patients as RA. UA patients showed normal naïve T-cells in 87% patients analysed.

Conclusion There is clear immunological difference between UA and RA diagnosed using the new 2010-criteria: loss of naïve T cells appear particularly important with the appearance of IRC. Treg appear to have limited predictive value.