S-RI-3

Mannose Binding Lectin (MBL) Codon 54 Gene Polymorphism and Susceptibility to Infection in Patients with Systemic Lupus Erythematosus (SLE)

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Background: MBL is a C-type serum lectin that binds to glycoprotein terminated with mannose and N-acetylglucosamine present on the cell walls of a variety of micro-organisms. It has an important role in innate immune system in regard to the opsonisation and subsequent macrophage phagocytosis. MBL gene polymorphism has been recognized in SLE patients resulting in diminution of production of MBL to various extent.

Aim: To determine whether MBL polymorphism in SLE patients predisposes to infection and to address the pattern of infection in these patients.

Methods: MBL alleles and serum concentrations were determined by polymerase chain reaction and enzyme-linked immunosorbent assay respectively in 112 Chinese patients with SLE. Significant infective episodes requiring hospitalization or antibiotics treatment were recorded.

Results: 112 SLE patients (F:M=106:6) aged 38.75± 8.72 years with disease duration of 11.46± 6.13 years were recruited. Homozygosity and heterozygosity for MBL (codon 54) alleles was observed in 4.8% (5/106) and 27.6% (29/106) of the SLE patients respectively. MBL mutation correlates with a significant diminution in level of MBL ($p<0.005$). Patients with MBL level >450 ng/dl had less number of infective episodes (0.16 vs 0.21 episodes per patient-year) ($p=0.05$). Patients who suffered from cutaneous abscess had a lower MBL level than patients who did not ($p=0.006$). MBL levels were not different in patients who suffered from herpes zoster or tuberculosis and those who did not ($p=0.135$ and 0.388 respectively).

Conclusion: SLE patients with low MBL level that manifests as a result of codon 54 gene mutation predisposes these patients to infections, in particular, bacterial infections.

S-RI-4

Alterations of CD8+CD28- T Cells in Systemic Lupus Erythematosus and Rheumatoid Arthritis

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Aim: Relatively little is known of the regulatory roles of CD8+ T cells in systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA). Our present attempt was to determine the relative population size of CD8+CD28 ± T subsets in peripheral blood (PB) samples from controls and patients with RA and SLE, and to determine the immuno-regulator function of these two T subsets through their ability to release IFN-gamma, IL-4 and IL-10.

Method: PB samples were stained for CD3, CD8 and CD28 molecules according to standard procedures for flowcytometric analysis. For intracellular cytokine assay, CD8+ T cells were isolated from PB using Dynabead. After stimulation with phorbol myristate and ionomycin, CD8+ T cells were surface-stained with conjugated anti-CD28 and anti-CD16 antibodies (Ab) and subsequently stained intracellularly with conjugated anti-IFN-gamma, anti-IL-4 or anti IL-10 Ab in the presence of 0.1% of saponin. CD16- cells were gated and examined by flowcytometry.

Results: Shifts in CD8+ T cell population were observed, with increased proportion of CD3+CD8+ population in SLE group (57.9% vs 35.8% in controls, $p<0.001$) and CD3+CD8+CD28- population in both SLE (62% vs 32.7% in controls, $p<0.0001$) and RA (54.7%, vs 32.7% in controls $p<0.001$) groups as compared with controls. Distinct profile of cytokine production in response to stimulation was identified in the CD8+CD28± subsets. Significantly more CD8+CD28+ T cells were positive for IL-4 and IL-10 (15% & 14% respectively) than the CD8+CD28- T counterpart in healthy controls (4.1% and 2.9% respectively). In contrast, more CD8+CD28- T cells (58%) were positive for IFN-gamma than CD8+CD28+ T cells (30%). Furthermore, expression of IFN-gamma in CD8+CD28- T subset was significantly reduced in both SLE and RA groups (36% & 23% respectively vs 56% in control; $p<0.005$ both). However, increased expression of IL-10 in CD8+CD28- T cells was found in SLE group (7.1% vs 2.9% in control, $p<0.01$).

Conclusions: Our data indicated CD8+CD28± cells are distinct T cell subsets in terms of cytokine production. The general increase in CD28- fraction of CD8+ T cells in systemic autoimmune disorders merits further investigation to delineate its contribution in these disorders.