T Cell Subsets in Rheumatic Heart Disease

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IT is well known that rheumatic fever occur following antecedent group A streptococcal infection. Many studies has been confirmed in the pathogenesis of rheumatic fever and rheumatic heart disease by several investigator. The onset and recurrence of rheumatic fever is started by a deeper alternation of disturbance of immune reactions. What initially this phenomenon is needed by humoral immunity or cellular immunity is still not clear in the formation of cardiac lesions of rheumatic fever and rheumatic heart disease. Recently, Not only humoral immunity which is well known as anti-heart antibodies but also cellular immunity was widely stressed by several investigators. Previously

reported, We studied cytotoxicity in patients with rheumatic fever and rheumatic heart disease. This assays was performed for ^{51}Cr labelled cultured heart cells in human.¹⁻⁵ In short, Peripheral lymphocytes from patient with rheumatic fever and rheumatic heart disease was cytotoxic for cultured heart cells and PHA-induced cytotoxicity of lymphocytes from these patients was much more cytotoxic than those of normal subjects. Recently, T cell subsets as difiend by monoclonal anti-T cell antibodies was widely used in several immunological diseases. We also studied T cell subsets from patient with rheumatic fever⁶⁻¹⁰ and rheumatic heart disease by using OKT3, 4, 8 and Ia reagents. We observed

TABLE I PROFILE OF T-CELL SUBSETS IN PATIENTS WITH RHD

Patients studied	T cell positive for				Ratio OKT4/OKT8
	OKT3	OKT4	OKT8	OKIaI	
F.F	66.3	37.0	32.4	10.5	1.14
A.S	78.2	61.2	23.1	9.7	2.65
S.I	74.1	44.3	27.5	7.3	1.61
H.I.	66.2	50.2	21.6	11.5	2.32
H.M	71.8	39.1	30.7	26.4	1.27
K.Y.	62.3	48.9	18.9	21.8	2.59
H.S	56.6	31.0	17.6	19.9	1.76
T.H	67.2	52.3	19.0	19.0	2.75
K.S	76.0	46.4	12.6	12.6	1.71
A.S	65.2	40.7	14.2	14.2	1.37
mean	68.39 $\pm$ 6.63	45.11 $\pm$ 8.65	24.83 $\pm$ 5.44	15.29 $\pm$ 6.16	1.92 $\pm$ 0.61
Normal controls	62.3 $\pm$ 3	41.0 $\pm$ 2	22.0 $\pm$ 1		1.92 $\pm$ 0.2

Key Words:

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that this decrease may reflect a lack immunoregulatory function and suppressor function during rheumatic heart disease.

MATERIAL AND METHOD

Ten patients were studied. All patients with rheumatic heart disease were followed as out patient at Juntendo Izunagaoka hospital. Those patients has previous history of rheumatic fever. Recently there was no episode of recurrence attach of rheumatic fever. The age of patients ranged from 47 to 74 years, while average age of 59.7 years.

T-CELL SUBSET

T-cell subsets presumed to have functional significance as helper or inducer and supressor cells were identified with immunofluorence using the orth OKT3, 4, Ia mouse hybridoma reagents in conjugate with fluorescein or rhodamine-conjugated F(ab)'2 goat anti-mouse gamma globulin secound layer.

RESULTS

Proportion of total number of T cell (OKT3), helper T cell (OKT4) and supressor T cell (OKT8) were identified in ten patients. Result of patients with these diseases and normal subjects was shown in Table I.

No significant decrease in percentage of OKT3, 4, 8 and OKT1a T cell was observed in patients group and healthy subjects. A relative decrease in percentage of OKT8 was recorded in patients group who suffered from conjestive heart failure. In addition, A relative increase of OKT4/8 ratio was observed in 4 of ten patients. There was no correlation between this findings and clinical manifestation.

DISCUSSION

Recently, the study of T lymphocyte subset was widly used by many investigator in several immunological diseases. Dr Williams reported that tissue distribution of lymphocytes in rheumatic heart valves was contained a predominance of OKT 4 helper T cell by using monoclonal anti-T cell antibodies and also indicated that OKT 4 positive helper T cell was closely juxtaposed to

fibloblast and collagen fibrils. These findings suggested that helper T cell may¹⁰ contribute to the formation of chronic scaring process.

Recently, The role of cellular immunity in the pathogenesis of rheumatic heart disease has been much more stressed by several workers. The purpose of this paper was to examine patients with rheumatic heart disease and to find out the role of cellular immune function in the course of rheumatic heart diseases. Our data showed that a relative increase in ratio OKT4/T8 cell was observed in rheumatic heart diseases. The findings may support a defect at leaset in immunological cell types in the course of rheumatic valvular process.

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