Phenotypic/functional characteristics and clinical significance of activated lymphocytes in viral illness and Kawasaki's disease

1988 Fiscal Year Final Research Report Summary

Phenotypic/functional characteristics and clinical significance of activated lymphocytes in viral illness and Kawasaki's disease

Research Project

Project/Area Number

62440043

Research Category

Grant-in-Aid for General Scientific Research (A)

Allocation Type

Single-year Grants

Research Field

Pediatrics

Research Institution

Kanazawa University

Principal Investigator

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Keywords

Activated lymphocytes / Viral infection / Kawasaki's disease / Ki-67 antibody / IL-1 / IL-6 / TCR- / δ鎖

Research Abstract

1. A monoclonal antibody, Ki-67, could recognize a nuclear antigen expressed in proliferating cells, but not in resting cells. In acute stage of common viral diseases, various proportions of circulating T cells expressed Ki-67-reactive nuclear antigen, whereas there was no significant appearance of Ki-67^+ cells in the cases of bacterial infection examined. Thus, enumeration of ciruculating Ki-67^+ cells might provide a useful tool for the differentiation between viral and bacterial infection in clinical practice. Of particularly interest is the fact that a significant and prolonged increase of Ki-67^+ cells in Kawasaki's disease and idiopathic myocarditis suggests the possible implication of viral agents in the pathogenesis of these disorders.
2. Producing ability of monokines, such as IL-1 and IL-6, of cord blood leukocytes assessed by a whole blood culture method was comparable to that of abult controls, indicating the monokine-producing capability to be mature at the time of birth. In various febrile conditions including Kawasaki's disease, serum levels of IL-6 were markedly elevated at the acute stage of the disease and decreased rapidly at convalescence in accordance with the decline of several species of the acute phase proteins, indicating the acute phase nature of IL-6.
3. By using three kinds of monoclonal antibodies against T-cell receptor(TCR)- / chains, anti-TCR 1 (seemingly anti-pan TCR / , anti-Ti- A, and anti- -TCS1, tissue distributions of lymphocyte subsets expressing TCR- / chains was evaluted immunohistochemically. In peripheral lymphoid organs, less than 5% of lymphocytes expressed TCR- 1^+ determinants, of which the majority were Ti- A^+ cells. The cells expressing -TCS1^+ determinants were very small in

number. Clinical studies suggested that preferential proliferation of a subset of TCR- / ^+ lymphocytes in peripheral lymphoid organs might indicate impaired immune status of the host in response to viral agents.

Research Products (9 results)

All | Other

All | Publications (9 results)

[Publications] 生田敬定: 臨床免疫. 19. 807-816 (1987)

[Publications] YACHIE,Akihiro: Clin Exp Immunol.

[Publications] UENO,Yasunao: Clin Exp Immunol.

[Publications] HASUI,Masaki: Cell Immunol.

[Publications] YACHIE,Akihiro: "Developmental change of double-negative(CD3+4-8-) T cells in human peripheral blood." Clinical Experimental Immunology.

[Publications] UENO,Yasunao: "The acute phase nature of interleukin 6: studies in Kawasaki's disease and other febrile illness." Clinical Experimental Immunology.

[Publications] HASUI,Masaki: "Effector and precursor phenotypes of lymphokine-activated killer cells in SCID and Nude mice." Cellular Immunology.

[Publications] YACHIE,Akihiro: "Producing ability of IL-6 by cord blood and adult peripheral blood leukocytes assessed by whole culture method."

[Publications] YOKOI,Tohoru: "Demonstration by in situ hybridization of IL-6 mRNA in Epstein-Barr virus-immortalized B cells."

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