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Adult Acute Lymphoblastic Leukaemia at University Hospital, Malaysia *

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A. Introduction

Epidemiological studies of lymphoid malignancies show remarkable differences amongst populations of different geographical locations and socioeconomic conditions [1]. An earlier survey by us showed the virtual nonexistence of chronic lymphocytic leukaemia and follicular non-Hodgkin's lymphoma in Malaysians [2]. All patients with acute lymphoblastic leukaemia (ALL) are being studied under an international leukaemia subtyping study organized by Dr. M. Greaves. This is a preliminary review of ALL subtypes.

B. Methods

The study consisted of all patients admitted with a diagnosis of acute leukaemia or lympholeukaemia between January 1980 and February 1984. Routine morphological and cytochemical methods were used in the diagnosis. Cells from bone marrow and peripheral blood of patients with ALL were also characterized for different cell surface antigen expression (see Table 2). The subtypes were defined as follows: common ALL (positive for cALLA and HLA DR antigens), T-ALL (E rosettes and other T cell antigens and HLA DR negative), B-ALL (surface immunoglobulin and HLA DR positive) and Null (cALLA negative, SMIg, ER, T antigens negative, HLA DR antigen positive). Immunofluorescence assays for nuclear TdT were done, but results not included because of technical difficulties.

C. Results

Tables 1 and 2 show the breakdown of ALL in relation to other acute leukaemias and in terms of immunological characterization. The relative proportions of the four ALL subclasses in relation to sex and age are shown in Table 3. The clinical features of the 11 adult cases of T cell leukaemia or leukaemia–lymphoma are shown in Table 4.

D. Discussion

Our study showed "common" acute lymphoblastic leukaemia in approximately 50% of patients. This rate of cALLA positivity may be a reflection of the demographic status of Malaysia where there is a fairly large middle class and a heterogeneous population of Malays, Chinese and Indians [3]. This study also supports the observation of approximately 60% cALLA positivity amongst Asian children in a United Kingdom survey [4]. This is somewhat in contrast to the slightly lower incidence of common ALL in Afro-Caribbean children.

The majority of T cell malignancies were T-ALL lymphoblastic lymphoma–leukaemia with acute onset, marked leu-

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Table 1. Acute leukaemia diagnosed at University Hospital, Kuala Lumpur, January 1980 – February 1984

Diagnosis	Total no. of cases	No. of adult cases (> 15 years)
Acute lymphoblastic leukaemia	153	42
Acute myeloid leukaemia	37	26
Acute myelomonocytic leukaemia	21	15
Acute monocytic leukaemia	8	3
Acute promyelocytic leukaemia	12	4
Acute undifferentiated leukaemia	8	5
Total	239	95

Table 2. Acute lymphoblastic leukaemia (ALL) subtypes January 1980 – February 1984

Study	No. of patients tested	Surface marker expression			
		ALL	T	B	Null
1[a]	18	N.T.[d]	6		12
2[b, c]	58	27	14	6	5

[a] Limited study carried out before 1982. Only two markers were investigated: sheep erythrocyte (E) rosettes and surface membrane immunoglobulin

[b] Study begun in 1982 as part of the international ALL subgroup survey (coordinated by Dr. M.F. Greaves, London); cells were analysed for E rosettes, CALL antigens and 12 other surface markers using monoclonal antibodies and immunofluorescent visualization

[c] Only 58 of the 79 cases seen since 1982 were studied; 6 cases could not be characterized as any one of the 4 subtypes

[d] N.T. = not tested

Table 3. Acute lymphoblastic leukaemia (ALL) subtypes January 1982 – February 1984

Subtype	No.	Male	Female	M:F ratio	No. of cases < 15 years of age
Common ALL	27	14	13	1:1	17
T-ALL	14	9	5	1.8:1	9
B-ALL	6	4	2	2:1	2
Null	5	4	1		
Undetermined	6	5	1		

cocytosis, hepatosplenomegaly, lymphadenopathy, and mediastinal mass on chest X-ray. This disease was not confined to the adolescent age group alone for it was noted to be fairly uniformly distributed between 2 and 30 years of age. Greaves [5] has indicated that this disease is not confined to adolescence. The approximate 25% incidence of T-ALL is not strikingly different from that observed in Western and industrialized countries.

The recent association of the adult form of T cell malignancy with HTLV is perhaps of great importance in understanding the biology of lymphoid malignancies. Epidemiological surveys such as this to-

Table 4. Clinical features of adult (> 15 years) T cell malignancies

Clinical features	Number[a]
Mediastinal Mass	9
Skin involvement	2
Lymphadenopathy	10
Hepatosplenomegaly	10
CNS involvement	5
Pleural effusion	4
Lytic bone lesions	1
Hypercalcaemia	2
Leucocytosis	8

[a] Number of patients of the total 11 who had the clinical features

gether with virological, molecular and genetic studies of acute T-ALL populations may give further clues to the aetiology of these disorders.

In summary, the subtypes of ALL do not seem to be different from those noted in the West. This is in marked contrast to the situation with non-Hodgkin's lymphoma and CLL. The findings also raise the possibility that with an effective and well-planned treatment programme a large number of the patients may be effectively treated.

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