

## A Note on Mortality from Lymphatic Leukemia in Oriental Populations of the United States

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SEVERAL reports have appeared in the literature recently indicating the relative rarity of chronic lymphatic leukemia among the Japanese in Japan<sup>1,2</sup> and among the Chinese in Singapore.<sup>3</sup> We were interested in ascertaining whether this finding would be evident in the mortality data on the Japanese and the Chinese populations residing in the United States.

The National Office of Vital Statistics made available the unpublished detailed tabulations on mortality, by race, for the rubrics 200–205 of the current International List of Causes of Death, covering neoplasms of the hematopoietic and lymphatic systems.

Tables 1A and 1B present these data for the 5-year period 1949–1953 on the minor race groups, and for 1951 on the white and the Negro populations of the continental United States.

The recorded mortality rates for leukemia are somewhat lower for all other races than for the white population. The higher mortality rates for males are present for all races, except the Chinese, in whom the reversal may be due to chance, in view of the small numbers involved. In relation to the occurrence of lymphatic leukemia among the Chinese and the Japanese, it should be noted that the recorded mortality from lymphosarcoma appears to be no lower among the Orientals than among the white population.

Table 2 presents the relative frequencies of the cell types of leukemia, by race and by sex, combining the decade 1949–1958 for the minor race groups and using the combined data of years 1951 and 1956 for the white and Negro populations. There does appear to be a slightly lower proportion of lymphatic leukemia and a higher proportion of acute leukemia among the Oriental populations than among the white or the Negro populations.

Table 3 shows the relative frequencies of cell types of leukemia for ages 15 and over, thus eliminating the acute lymphatic leukemias of childhood. This accentuates the lower proportion of lymphatic leukemia among the Chinese, but has no effect on the data for the Japanese. Although absolute rates based on the deaths for 1949–1958 cannot be computed accurately because population estimates by race are not available for the decade, approximate indexes of death rates can be computed, assuming the proportionate distribution of the population by race was about the same during 1949–1958 as it was in the census year, 1950. These indexes for persons aged 15 and over (adjusted for differences in the age and sex distributions between races) reveal that mortality ascribed to lymphatic leukemia among Chinese was only about 40 per cent, and among Japanese, 45 per cent of the white population. Both differences are statistically significant ( $P < 0.01$ ).

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Table 1A.—*Number of Deaths and Average Annual Age—Adjusted\* Death Rates per 100,000 Males from Causes 200–205, by Race, U.S.; White and Negro, 1951; Indian, Chinese, Japanese, and Other, Combined, For 1949–1953*

	White	Negro	Indian	Chinese	Japanese	Other†
Population, 1950 (thousands)	67,129	7,300	178	77	76	73
Neoplasms of lymphatic and hematopoietic tissues (200–205)						
Deaths	9,925	602	48	50	46	21
Rate	14.3	9.5	6.8	12.8	11.0	6.9
Lymphosarcoma (200)						
Deaths	2,109	108	4	15	17	5
Rate	3.0	1.7	0.6	3.7	4.1	1.6
Hodgkin's disease (201)						
Deaths	1,541	103	4	5	1	3
Rate	2.2	1.6	0.6	1.2	0.2	0.9
Other lymphomas (202)						
Deaths	330	20	3	2	2	—
Rate	0.5	0.3	0.4	0.5	0.5	0.0
Multiple myeloma (203)						
Deaths	758	69	3	5	4	2
Rate	1.1	1.2	0.5	1.3	0.9	0.7
Leukemia (204)						
Deaths	5,141	300	34	23	22	11
Rate	7.4	4.6	4.5	6.1	5.3	3.8
Mycosis fungoides (205)						
Deaths	46	2	—	—	—	—
Rate	0.1	0.0	0.0	0.0	0.0	0.0

\*Adjusted by the indirect method using the estimated age-specific rates for all U.S. males in 1951 as standard.

†Filipino (approx. 50 per cent), Korean, etc.

Corresponding indexes for acute leukemia show that the Chinese and Japanese suffered a 75 and 90 per cent excess mortality, respectively, compared with whites. However, the excess acute leukemia is represented by a small number of deaths, and the finding is interpreted as, at most, suggestive.

Thus lymphatic leukemia as a recorded cause of death appears less frequently among Chinese and Japanese populations of the United States than among the white population, expressed either in terms of relative frequency among the cell types of leukemia, or as a mortality rate. On the other hand, lymphatic leukemia is certainly not a rarity among the Oriental populations of the United States. The data were inadequate for an analysis of the distribution of leukemia among Orientals born in the United States as compared with those born in Asia.

As noted by MacMahon and Clark,<sup>4</sup> the identification of cell types of leukemia by death certificates is inadequate, particularly when acute lymphatic leukemia needs to be separated from chronic lymphatic leukemia. However, direct comparisons<sup>3</sup> of series from clinical centers in the Orient and in the United States introduce other difficulties that are no less serious. Additional

**Table 1B.—Number of Deaths and Average Annual Age—Adjusted\* Death Rates per 100,000 Females from Causes 200–205, by Race, U.S.; White and Negro, 1951; Indian, Chinese, Japanese, and Other, Combined, For 1949–1953**

	White	Negro	Indian	Chinese	Japanese	Other†
Population, 1950 (thousands)	67,813	7,745	164	40	65	37
Neoplasms of lymphatic and hematopoietic tissues (200–205)						
Deaths	6,810	412	34	16	22	8
Rate	9.5	6.2	5.4	12.0	8.3	6.9
Lymphosarcoma (200)						
Deaths	1,419	66	2	1	7	—
Rate	2.0	1.1	0.4	0.9	2.8	0.0
Hodgkins disease (201)						
Deaths	926	57	4	—	4	4
Rate	1.3	0.8	0.7	0.0	1.4	3.4
Other lymphoma (202)						
Deaths	225	22	1	1	1	1
Rate	0.3	0.3	0.2	0.8	0.4	0.8
Multiple myeloma (203)						
Deaths	543	51	4	—	1	—
Rate	0.8	0.9	0.8	0.0	0.4	0.0
Leukemia (204)						
Deaths	3,678	214	23	14	9	3
Rate	5.2	3.2	3.4	9.9	3.5	2.3
Mycosis fungoides (205)						
Deaths	19	2	—	—	—	—
Rate	0.0	0.0	0.0	0.0	0.0	0.0

\*Adjusted by the indirect method using the estimated age-specific rates for all U.S. females in 1951 as standard.

†Filipino (approx. 50 per cent), Korean, etc.

**Table 2.—Number of Deaths from Leukemia and Relative Frequency of Cell Types, All Ages, by Race and Sex, U.S.; White and Negro, Combined 1951 and 1956; Indian, Chinese, Japanese, and Other, Combined, 1949–1958**

	White		Negro		Indian		Chinese		Japanese		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Males:</b>												
Lymphatic (204.0)	4696	42	287	41	30	37	14	27	13	29	8	28
Myeloid (204.1)	3416	30	228	32	20	25	24	46	18	40	8	28
Monocytic (204.2)	741	7	42	6	4	5	1	2	1	2	6	21
Acute (204.3)	1093	10	64	9	16	20	9	17	11	24	4	14
Other, unspec. (204.4)	1288	11	83	12	11	14	4	8	2	4	3	10
<b>Total</b>	<b>11234</b>	<b>100</b>	<b>704</b>	<b>100</b>	<b>81</b>	<b>101</b>	<b>52</b>	<b>100</b>	<b>45</b>	<b>99</b>	<b>29</b>	<b>101</b>
<b>Females:</b>												
Lymphatic (204.0)	3114	38	187	35	17	33	6	25	5	26	4	57
Myeloid (204.1)	2748	33	169	32	13	25	8	33	4	21	1	14
Monocytic (204.2)	615	7	38	7	4	8	4	17	4	21	—	—
Acute (204.3)	840	10	47	9	10	20	5	21	4	21	2	29
Other & unspec. (204.4)	914	11	86	16	7	14	1	4	2	11	—	—
<b>Total</b>	<b>8231</b>	<b>99</b>	<b>527</b>	<b>99</b>	<b>51</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>19</b>	<b>100</b>	<b>7</b>	<b>100</b>

**Table 3.—Number of Deaths from Leukemia at Ages 15 and Over (Both Sexes) and Relative Frequency of Cell Types, by Race, U.S.; White and Negro, Combined 1951 and 1956; Indian, Chinese, Japanese, and Other, Combined 1949–1958**

	White		Negro		Indian		Chinese		Japanese		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Lymphatic	6155	38	374	37	25	29	9	16	14	26	8	30
Myeloid	5839	36	366	36	27	32	32	55	20	38	9	33
Monocytic	1275	8	70	7	8	9	5	9	4	8	6	22
Acute	1121	7	69	7	13	15	8	14	11	21	2	7
Other, unspec.	1759	11	130	13	12	14	4	7	4	8	2	7
Total	16149	100	1009	100	85	99	58	101	53	101	27	99

clarification of racial and residential differences in the risk to, and distribution of, neoplasms of the hematopoietic and lymphatic tissues requires specifically designed and coordinated international studies.

#### SUMMARY

Leukemia mortality data by race for the decade 1949–1958 were examined to ascertain whether chronic lymphatic leukemia occurs infrequently, as has been reported for Singapore and Japan, among Chinese and Japanese in the United States. It was found that mortality ascribed to lymphatic leukemia in adult Chinese and Japanese in the United States was only 40 to 45 per cent of that reported in the white population.

#### SUMMARIO IN INTERLINGUA

Esseva examinate le datos del mortalitate per leucemia secundo le origines racial durante le periodo ab 1949 a 1948 pro determinar si chronic leucemia lymphatic occurre infrequentemente—como il es reportate pro Singapur e Japon—in le chineses e japoneses del Statos Unite. Esseva trovate que le mortalitate ascribite a leucemia lymphatic in adulte chineses e japoneses in le Statos Unite esseva solmente 40 a 45 pro cento de illo reportate pro le population caucasian.

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