To the Editor:

The presence of myeloid precursors in the blood (left shift) is a well-recognized presenting feature in some cases of childhood acute lymphoblastic leukemia (ALL). Shen et al., in a retrospective analysis of 109 children with ALL, found that left shift (in 43% of the patients) was correlated with longer durations of complete remission. The authors postulated that this feature may be an indirect measure of total leukemia cell burden, reflecting less suppression of granulopoiesis. Otherwise, very little is known about the clinical importance of left shift in the peripheral blood.

Between May 1979 to December 1983, 427 children with newly diagnosed ALL were admitted to St Jude Children's Research Hospital. They were subjects of a Total Therapy study that incorporated three different treatment protocols based on the patients’ initial risk features and subsequent randomization. The details of risk assignment and treatment have been previously published. Seventy-four patients (17.3%) were found to have a left shift in their blood counts, defined by the presence of 1% or more of metamyelocytes, myelocytes, or promyelocytes in a differential count of 100 cells. Children with left shift were also more likely to have circulating nucleated red blood cells (20 of 74 patients versus 35 of 353, $P < 0.001$). By comparison with common ALL, cases of T cell and so-called "undifferentiated" ALL had higher frequencies of left shift: 44 of 304 (14%), 15 of 59 (25%), and 8 of 26 (31%), respectively ($P = 0.02$). The presence or absence of left shift was not related to age, sex, race, French-American-British (FAB) morphologic subtype, percentage of S-phase cells, blast cell DNA index, liver or spleen size, initial leukocyte count, percentage of blasts in bone marrow, platelet count, hemoglobin level, or serum lactic dehydrogenase level. More importantly, with a median follow-up time of 4 years 2 months, left shift had no impact on treatment outcome whether the analysis was performed on combined (Fig 1) or separate protocol groups.

The reason for the lower percentage of patients with left shift in our series compared with that of Shen et al is not clear. Nonetheless, we were unable to demonstrate any association between left shift and leukemia cell burden as reflected by leukocyte count, liver or spleen size, percentage of blasts in bone marrow, and serum lactic dehydrogenase level.

To the Editor:

There are two major differences between the findings of Pui et al and our own. The first and obvious one is that left shift (LS) in their series is not a prognostic indicator. The second is the presence of LS in 47/109 of our patients, but only 74/427 of their patients. Clearly, then, the patient subpopulation defined as having LS is markedly different in the two studies. There are a number of ways in which this may have arisen. Morphologic interpretation was subjective, and was done by light microscopy in our series. We do not know how it was done in the St Jude study. Perhaps the differential counts were performed on automated equipment. Our patient referral pattern is different from the St Jude one. We are an urban center, not a national referring institution. Perhaps our patients are admitted...

REFERENCES

2. Shen BJ, Ekert H, Tauro GP, Balderas A: Left shift in the peripheral blood counts at diagnosis in acute lymphocytic leukemia is significantly correlated with duration of complete remission. Blood 63:216, 1984

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Left shift of peripheral blood count at diagnosis of childhood acute lymphoblastic leukemia [letter]

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