LEFT SHIFT OF PERIPHERAL BLOOD COUNT AT DIAGNOSIS
OF CHILDHOOD ACUTE LYMPHOBLASTIC LEUKEMIA

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 incorpo-
rated three different treatment protocols based on the patients' ini-
tial risk features and subsequent randomization. The details of
risk assignment and treatment have been previously published.3
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 metamyelo-
cytes, myelocytes, or promyelocytes in a differential count of 100
cells. Children with left shift were also more likely to have circulat-
ing 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) mor-
phologic subtype, percentage of S-phase cells, blast cell DNA index,
leukemia cell burden as reflected by leukocyte count, liver or spleen
size, percentage of blasts in bone marrow, and serum lactic dehydro-
genase level. The similarity of relapse-free survival times for
patients with or without left shift in our study contrasts with the
results of Shen et al.2 These findings indicate that left shift is a
relatively unimportant presenting feature and support the idea that
 prognostic factors in childhood ALL can differ with changes in therapy. 3, 4

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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

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

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