Appraisal of the Initial Symptoms of Leukaemia in Childhood

By

L. Szőnyi, O. Lombos and Susanne Hutás

Department of Paediatrics, University Medical School, Pécs

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In the last ten years, the number of communications on leukaemia has considerably increased. The reason for this interest is partly a rise in the incidence of leukaemia all over the world, as shown by all the pertaining statistical data [1, 2, 7, 11, 13, 16], and partly the fact that the up-to-date therapeutic agents have made it possible to lengthen the life of the patients.

Leukaemia in childhood may present very varied initial symptoms thus giving not infrequently rise to erroneous diagnosis. In the possession of cytostatic agents, however, early and correct diagnosis has gained extreme importance. This has made us to analyse the presenting symptoms of the 36 patients treated with leukaemia at our Department in the years 1948—1959.

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Table 1 shows the incidence of leukaemia against the total number of admissions to our Department. For easier reference, admission over three-year periods are treated as single statistical units.

Table 1

Years	Number of Patients Admitted	Number of Patients with Leukaemia	Rate of Incidence per cent
1948—49—50	11.123	6	0.53
1951—52—53	13.389	5	0.37
1954—55—56	14.827	11	0.70
1957—58—59	16.598	14	0.80
1948—1959	Total	36	

It is seen from Table 1 that, in agreement with the data in the literature, the incidence of leukaemia among all the admitted patients has shown an upward trend.

Table 2 groups the cases according to age and sex.

Table 2

Years of Age	No. of Cases	Boys	Girls
0—1	3	2	1
1—6	19	15	4
6—14	14	8	6
Total No.	36	25	11

The majority of our leukaemic patients were boys between 1—6 years

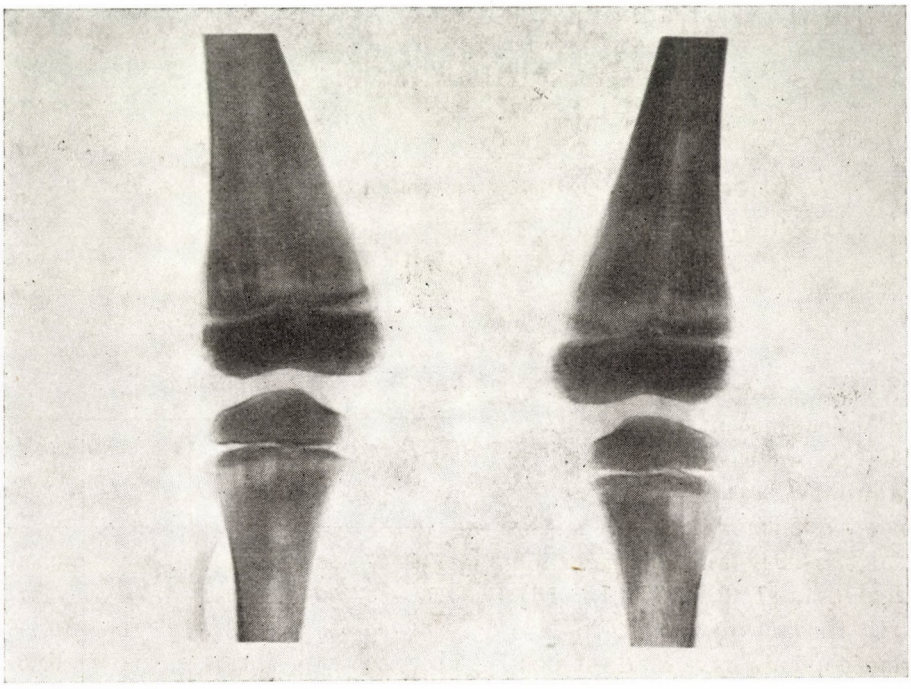

FIG. 1. X-ray of the knees of a leukaemic patient

of age, in agreement with data in the literature [11].

In the following, clinical and laboratory findings made on the occasion of the first examination will be analysed.

The history had usually dated back to 1 to 3 months, but in some cases only to a week. Over and above the complaints of general nature, the significance of pain in the bones and joints has to be emphasized. Sometimes these symptoms were especially marked and closely imitated rheumatic polyarthritis. Literary data also mention such pain in the knees and shanks in 30 to 40 per cent of the cases with positive X-ray findings [5, 6, 8, 10, 11, 14]. Of our 36 cases 10 had articular pains.

Fig. 1 shows the X-ray picture of the knee of a leukaemic patient who presented symptoms similar to those of rheumatic polyarthritis.

The osteoporotic changes, in the methaphysis alternating light and dense areas in the place of physiological spongious substance, are well-discernible.

Fig. 2 indicates extent of spleen, liver and lymph node enlargement in our patients.

At first examination the spleen was found enlarged in 15 cases, while the liver in 22 cases. Marked swollen lymph nodes and a picture corresponding to

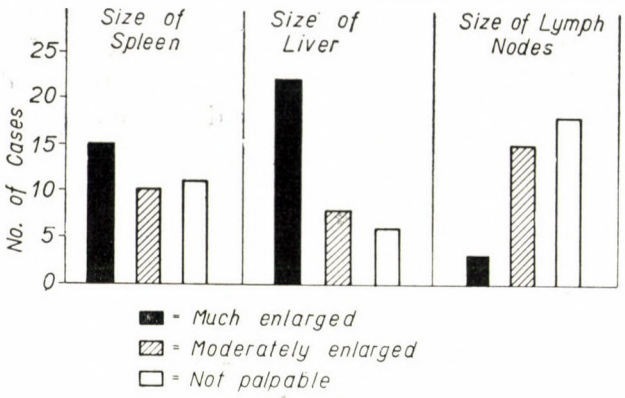

FIG. 2

Mikulitz' syndrome was observed in 3 patients. The spleen was normal in 11 cases, the liver in 6, the lymph nodes in 18 cases.

TABLE 3

Thrombocyte Count	No. of Cases	Haemorrhage	No Haemorrhage
0— 20 000	16	14	2
20— 40 000	3	2	1
40— 70 000	2	1	1
70—100 000	5	1	4
100—170 000	4	—	4
170—250 000	6	—	6
Total No.	36	18	18

Table 3 records the incidence of haemorrhagic manifestations at admission, together with the pertaining thrombocyte counts.

A considerable part of the patients had thrombocytopenia and presented haemorrhagic manifestations at admission. In 10 cases out of 36 was the first thrombocyte count normal: in these patients there were no haemorrhages.

Erythrocyte sedimentation was accelerated in 30 cases: in 10 patients the rate was under 20 mm/hr.

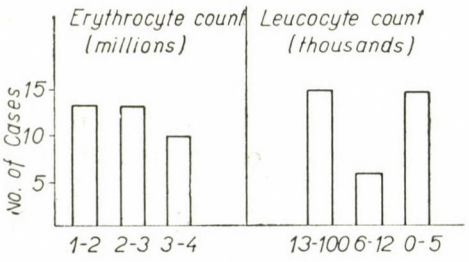

FIG. 3

Fig. 3 shows the blood counts at admission.

Serious anaemia occurred in 26 patients, moderate anaemia in 10 patients, at the first examination. Leucocytosis was found in 15 cases and leucocytopenia in another 15 cases. In 6 patients the WBC was normal.

The first examination of blood smears revealed in 14 cases abnormal blast cells, in 15 cases more than 70

per cent lymphocytes, in 3 cases a shift to the left with myelocytes. In 4 patients the qualitative pattern was normal.

It necessarily follows that in diagnosing leukaemia marrow biopsy is indispensable. The myelogram of our patients allowed the following classification (Table 4).

TABLE 4

Acute Leukosis	24
Acute Myelosis	11
Chronic Myelosis.....	1

It must be remembered, however, that sometimes even the myelogram may be misleading. We have dealt with that problem at length in another communication [9] yet let it be mentioned once again that acute leukaemia may be preceded by bone marrow aplasia. The early diagnosis of leukaemia is also impaired by previous cortisone treatment applied on account of some other reason, as cortisone normalises the bone marrow counts.

In the patients under survey the average time of survival following diagnosis was 3 to 4 months in approximately half of the cases. In the first month of treatment we lost 8 patients: the rest were kept alive for 5 to 8 months while one patient's life was prolonged for 14 months.

Treatment consisted in applying steroid hormones, ACTH, the antimetabolites purinethol and aminopterin, transfusions of blood, antibiotics.

Discussion

In agreement with the literature [11, 15], in our experience the early diagnosis of leukaemia meets sometimes considerable difficulties. The classical clinical picture often develops at the peak of the disease only. Among the 36 cases in our material there was no liver enlargement in 6, and the spleen was not enlarged in 11, and there were no swollen lymph nodes in 18 patients. The leucocyte count and the erythrocyte sedimentation rate were practically normal in 6 cases. Blood smears were normal in 4 patients while in 15 considerable lymphocytosis was the only sign indicative of malignant disease. In the incipient stage, 10 cases showed an approximately normal thrombocyte count.

Bone marrow biopsy is indispensable for the correct diagnosis but in some cases even this may be misleading [9].

Summary

The difficulties of establishing the diagnosis of leukaemia in the initial stage of the disease have been discussed on the basis of 36 cases. At the onset, the size of the spleen, liver and the lymph node may be normal, as also the blood counts, erythrocyte sedimentation rate, leucocyte and thrombocyte counts. Bone marrow biopsy is indispensable for the correct diagnosis though even this may yield misleading findings at the onset.

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Dr. L. Szőnyi
Gyermekklinika
Pécs, Hungary