Spontaneous Remission of Adult Acute Lymphoblastic Leukemia: A Very Rare Event

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Abstract A middle aged male presented to us with an unusual problem when his acute lymphoblastic leukemia (ALL) disappeared without any chemotherapy. We faced a dilemma whether to go ahead and treat his initial diagnosis or wait. Eventually he did relapse and was treated, albeit with a fatal outcome. Such spontaneous remission in acute leukemia are a very rare event, more common in acute myeloid leukemia and in children. Spontaneous remission in adult ALL is rarely described in literature.

Keywords Acute leukemia · Spontaneous remission

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A 46 year old gentleman presented to us with an unusual problem when his acute lymphoblastic leukemia (ALL) disappeared without any chemotherapy. We faced a dilemma whether to go ahead and treat his initial diagnosis or wait. Eventually he did relapse and was treated, albeit with a fatal outcome.

He came to us with fever, breathlessness and dry cough of 2 weeks duration. On examination, he was pale with no icterus, lymphadenopathy, organomegaly or skin bleeds. On systemic examination, there was an ejection systolic murmur in aortic area radiating to the carotid.

On investigations, he was pancytopenic (hemoglobin 910 gm/L, platelet count $1.1 \times 10^9/L$ and leucocyte count $1.0 \times 10^9/L$ with 20 % blasts). The blood culture grew *Acinetobacter* spp. Echocardiography showed a concentrically hypertrophied left ventricle with an 8×9 mm sized vegetation on a bicuspid, thickened, calcified aortic valve with moderate stenosis and mild regurgitation. Computed tomography scan of chest showed multiple nodules with a ground glass haze. Bone marrow aspirate with flow-cytometry revealed 90 % blasts of B lineage (Fig. 1). Bone marrow aspirate was negative for BCR-ABL transcript and other cytogenetic anomalies. We deferred chemotherapy in view of positive blood culture, infective endocarditis and possible fungal pneumonia. After 2 weeks of broad spectrum antibiotics (cefaperazone + sulbactam, gentamicin and vancomycin) and antifungals (voriconazole and caspofungin) his blood counts normalized and blasts disappeared from peripheral blood. A repeat bone marrow aspirate and biopsy was also normal (Fig. 2). Chemotherapy was deferred and a hemogram was checked every week for signs of relapse.

Eventually, after 9 weeks, peripheral blood smear showed blasts and bone marrow aspirate revealed 80 % blasts of B lineage. He was started on chemotherapy but succumbed to fungal pneumonia during induction.

In 1896, Coley observed the phenomenon of spontaneous remission (SR) of a large lymphosarcoma of the head and neck following streptococcal infection [1]. As compared to solid malignancies like melanoma, SR in hematological malignancies is uncommon [2, 3]. Many cases of SR have been reported in acute myeloid leukemia [4], few for childhood ALL [4] and rarely for adult ALL. SRs in AML are of short duration (mean 7.7 months; range 1–36); however, long-term remissions and even complete cytogenetic remissions have been documented [5]. An association

of SR in acute leukemias with concomitant bacterial, viral or fungal infections has been noted. [6] The cytokine release following infections has been postulated to cause regression via immune modulation mechanisms [6] and was used as a therapeutic measure by Coley [1] as early as 1893.

Extrapolating from the experience with AML where such remissions were short lived and as seen in our patient with ALL, chemotherapy should not perhaps be deferred despite apparent SR.

Conflict of interest None.

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Fig. 1 Bone marrow aspirate at diagnosis showing numerous blasts (Jenner Giemsa, 40×)

Fig. 2 Bone marrow aspirate (a) and biopsy (b) showing normal marrow components with normal maturation, with absence of blasts (a Jenner Giemsa, 40×, b H & E, 40×)