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Letter to the Editor

Methyl CCNU Therapy Linked Leukemia

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Case Report:

A 61 year old white female on 10/1/76 had a left colectomy for a carcinoma of the colon for an infiltrating moderately well differentiated adenocarcinoma and 7 out of 8 lymph nodes contained metastases. The tumor also infiltrated into the periserosal fibroadipose tissue. She did not have liver metastasis. On 5/21/77 an SMA-12 showed alkaline phosphatase of 140 (Normal 25-40 MG/DL) and a liver scan on 5/25/77 showed an enlarged liver with possible replacement in some areas with metastases. A liver biopsy, however, was negative in June 1977. The alkaline phosphatase continued to rise and, in November 1977, was 179 (Normal 25-90 mU/ml). She was started on 5 Fluorouracil and Methyl-CCNU on 11/18/77 (5 F.U. 325 Mgm/M^2 IV on day 1-5 and 375 Mgm/M^2 IV on day 36-40, Methyl CCNU 130 Mgm/M^2 PO on day 1. Repeated every 10 weeks) and received it until 6/25/79. She received a total of 1790 mg of Methyl-CCNU. A liver scan on 7/1/80 showed no evidence of metastases. She presented on 7/23/80 in the Emergency Room with a hemoglobin of 5.3 grams (Normal 12-16), hematocrit 16.2 (Normal 37-47), platelet count of 35,000. On 6/2/80 her hematocrit was 34.4, hemoglobin was 11.8. Bleeding was excluded as a cause for drop in hematocrit. A bone marrow (test) on 7/26/80 showed features consistent with acute myelocytic leukemia.

Bone Marrow Biopsy

Laboratory results: White count 2,900, red count 2 million, hemoglobin 5.7, hematocrit 16.5, MCV 80.5, MCH 28.1, MCHC 34.9, platelet count 34,000. Differential: Segs 77, Bands 5, metas 1, lymphs 12, monos 4, eosinophils 1. No myeloblasts were seen.

The striking morphology of the bone marrow was the presence of large sheets of blast cells. The blasts had an oval nucleus with fine chromatin in which one or two nucleoli were visible. Sideroblasts were not seen.

These morphologic findings and special stains were consistent with the diagnosis of an acute non-lymphocytic leukemia, most likely acute myelocytic leukemia.

Discussion

In the above case report the onset of leukemia was rather abrupt without a preceding period of myelosuppression, unlike that reported by Cohen et al. (1,2). Methyl-CCNU is capable of producing severe and protracted bone marrow dysfunction following long-term therapy (3), which may be a prelude to the development of acute leukemia. The total dose of Methyl-CCNU may be important in the development of leukemia. Our patient received a total of 1790 mgm over a period of eighteen months. While it is certainly possible that 5 Fluorouracil is also leukemogenic, in the absence of reports to implicate 5FU, we consider Methyl-CCNU to be the leukemogenic agent. One cannot, however, discount the possibility of the combination being the etiologic factor in this patient's leukemia.

References

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