Three-Day Standard Dose Cytarabine Could Induce an M4Eo Patient into Complete Remission

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Acute myelomonocytic leukemia with bone marrow eosinophilia (M4Eo) is characterized by abnormalities of chromosome 16 which involve the CBFβ gene on q22 and the MYH11 gene on p13 [1], a good response to intensive chemotherapy with a complete remission (CR) rate of over 90% [2, 3] and subsequent long-term survival [4]. We recently experienced an M4Eo case who attained CR with standard dose cytarabine (100 mg/m²/day) given for 3 days, confirming a good response of M4Eo to chemotherapy. While Le Beau et al. [5] described two M4Eo cases who achieved CR with single agent treatments (cytarabine and daunorubicin, respectively; doses not given), most of the patients were treated by intensive multidrug chemotherapy [2-5]. It would be useful to know the mini-

mal doses with sufficient antileukemic effect, particularly for patients in poor clinical conditions, such as the presence of infection or advanced age. However, clinical trials to determine such a minimal dose requirement are not feasible primarily because of ethical reasons. Our isolated experience may provide a piece of valuable information concerning this matter.

A 63-year-old male was admitted because of general malaise in November, 1995. He had had subtotal gastrectomy for early gastric cancer 4 years before but had not received either chemotherapy or radiation. Pneumonic infiltration of the right lung was noted. His white blood cell (WBC) count was $22.6 \times 10^9/l$ with 44% of blasts and 32% of dysplastic monocytes (fig. 1). Bone marrow (BM)

WBC($\times 10^3/\mu l$) cytarabine
1001 140 mg

Fig. 1. Clinical course of the patient. 'mono' represents monocytes with dysplastic features. Three rectangles represent bone marrow differentials and numbers above them nucleated cell counts (/μl) of the aspirates.

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aspirate showed a hyperplastic marrow with nucleated cell count of $147 \times 10^9/l$. Blasts and dysplastic monocytes comprised 77 and 9%, respectively, of the nucleated cells. BM eosinophils were 7% of the nucleated cells. They contained irregular large basophilic granules and were positive for chloroacetate esterase and periodic acid-Schiff reactions. Inv(16)(p13q22) was observed in 23 mitoses out of 29 examined. M4Eo was diagnosed. However, because of the pneumonia complicated by sepsis and disseminated intravascular coagulation (DIC), chemotherapy was withheld. As the WBC exceeded $90 \times 10^9/l$ on the tenth hospital day, cytarabine 140mg/day (100mg/m²) was given for 3 days by continuous intravenous infusion. Methylprednisolone (mPSL) (1 g/day) was given for 3 days against worsening pulmonary edema and daily intravenous filgrastim (G-CSF) (300 µg/day) was started. A steep decrease of the leukemic cells was obtained and BM

aspirate taken 14 days after cytarabine was severely hypo-plastic but still with 20% of dysplastic monocytes. With recovery of the cytopenia, peripheral monocytes had normal appearance, and the infections and DIC cleared. BM revealed CR without abnormal eosinophils and karyotype was normal in all seven mitoses obtained. He received multidrug standard consolidation courses and remains in CR.

In this case, differentiation-induction by G-CSF was unlikely because he experienced severe hypoplasia of BM. While the cytotoxic effect of mPSL is not negligible, most of the antileukemic effect appeared to be due to the cytarabine. This case clearly demonstrated that at least some M4Eo patients are very sensitive to standard-dose cytarabine and can be induced to remission with mild chemotherapy when intensive regimens are not feasible.

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