

Treatment of Acute Promyelocytic Leukaemia Using a Combination of All-trans Retinoic Acid and Chemotherapy

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Abstract

Introduction: The combination of all-trans retinoic acid (ATRA) with chemotherapy has improved the outcome of acute promyelocytic leukaemia (APL). Effective induction as well as maintenance therapy for APL can be achieved using this combination of anti-leukaemic agents. **Materials and Methods:** Twenty-four consecutive patients with newly-diagnosed APL were treated with ATRA daily together with either daunorubicin or idarubicin. Therapy with ATRA was continued until complete remission (CR) was achieved; thereafter, patients were treated with 2 cycles of an anthracycline-based consolidation chemotherapy (either daunorubicin or idarubicin). Maintenance therapy was achieved using 5 alternating cycles of low-dose methotrexate (MTX) plus 6-mercaptopurine (6MP) followed by ATRA alone. **Results:** Twenty-three out of 24 patients (96%) completed induction therapy and achieved haematological CR (HCR) as well as molecular remission (MR); however, 1 patient (5%) died from retinoic acid syndrome. Twenty-one out of 23 evaluable patients (91%) completed consolidation chemotherapy, and 2 patients (10%) died, 1 from neutropenic sepsis and the other from relapse following non-compliance to therapy. All 21 surviving patients in the present study received maintenance chemotherapy and are still in HCR and MR at a median follow-up of 23 months. The estimated actuarial 2-year overall survival (OS) and event-free survival (EFS) rates were both $84\% \pm 9\%$. **Conclusion:** The combination of ATRA with an anthracycline is an effective remission-induction therapy for newly-diagnosed APL. Maintenance therapy using alternating cycles of MTX plus 6MP followed by ATRA alone is effective in maintaining CR and MR as well as prolonging the survival of patients with APL.

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