



**Prognostic factors, treatment and outcome
in adult acute lymphoblastic leukemia**

Population-based studies in Sweden

av

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Akademisk avhandling

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Abstract

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Acute lymphoblastic leukemia (ALL) has poor prognosis in older/elderly adults and in high-risk/relapsed disease. Recommended treatment of ALL was evaluated (study I-IV). Data was obtained from the Swedish Acute Leukemia registries and from patient records.

I. We assessed ALL relapse treatment and outcome in 76 patients aged 15-65 years (y). Complete remission (CR) was achieved in 50/71 patients (70%). Of them, 29 underwent allogeneic hematopoietic stem cell transplantation (hSCT). Five year overall survival (OS) was 15%, but close to 50% in 19 patients <35y after hSCT.

II. We studied outcome of treatment with the Hyper-CVAD protocol in 19 of 24 patients with T-ALL aged 18-72y. CR was reached in 89%, but 5y leukemia-free survival was only 29%, and 20% in 15 patients not transplanted in CR1. Six patients received hSCT in CR2. Finally, 5y OS in all 19 patients was 47%. The only negative prognostic factor found was age $\geq 35y$.

III. We evaluated minimal residual disease (MRD) monitoring in 35 patients with Philadelphia (Ph) negative B-ALL aged 46-79y and treated with the ABCDV protocol. The CR rate was 91%. MRD was measured by flow cytometry in 73% in CR1 (MRD1) and omitted in those >70y or with high-risk ALL. Five patients received hSCT (only one due to MRD). Five year OS in the whole cohort was 47%. Continuous CR but not OS was improved in patients with MRD1 <0.1 %.

IV. We studied 155 patients with ALL (Ph+ in 35%) aged 55-85y and treated with remission induction/palliation (124/31). Both, intensive, and palliative treatment resulted in the CR rates of 70/83/16% and 3y OS of 26/32/3%. OS was negatively influenced by age and platelet count $\leq 35 \times 10^9/L$ (but not Ph+). OS was not enhanced by introduction of an age-adapted protocol.

We concluded that intensive treatment with subsequent allogeneic hSCT is the most reasonable option in younger patients with ALL recurrence (I). Hyper-CVAD has low relapse-preventing efficacy (II). MRD guided intensification is probably feasible in only a minority of older patients (III). Prognosis in elderly ALL is poor, but no longer impaired by Ph+ (IV).

Keywords: Acute Lymphoblastic Leukemia, adult, chemotherapy, prognosis, population-based.

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