Prognostic significance of the initial cerebro-spinal fluid (CSF) involvement of children with acute lymphoblastic leukaemia (ALL) treated without cranial irradiation: results of European Organization for Research and Treatment of Cancer (EORTC) Children Leukemia Group study 58881.


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Abstract
AIM OF THE STUDY: To evaluate the prognostic significance of the initial cerebro-spinal fluid (CSF) involvement of children with ALL enrolled from 1989 to 1996 in the EORTC 58881 trial.

PATIENTS AND METHODS: Patients (2025) were categorised according to initial central nervous system (CNS) status: CNS-1 (CNS negative, n=1866), CNS-2 (<5 leucocytes/mm(3), CSF with blasts, n=50), CNS-3 (CNS positive, n=49), TLP+ (TLP with blasts, n=60). CNS-directed therapy consisted in intravenous (i.v.) methotrexate (5 g/sqm) in 4-10 courses, and intrathecal methotrexate injections (10-20), according to CNS status. Cranial irradiation was omitted in all patients.

RESULTS: In the CNS1, TLP+, CNS2 and CNS3 group the 8-year EFS rate (SE%) was 69.7% (1.1%), 68.8% (6.2%), 71.3% (6.5%) and 68.3% (6.2%), respectively. The 8-year incidence of isolated CNS relapse (SE%) was 3.4% (0.4%), 1.7% (1.7%), 6.1% (3.5%) and 9.4% (4.5%), respectively, whereas the 8-year isolated or combined CNS relapse incidence was 7.6% (0.6%), 3.5% (2.4%), 10.2% (4.4%) and 11.7% (5.0%), respectively. Patients with CSF blasts had a higher rate of initial bad risk features. Multivariate analysis indicated that presence of blasts in the CSF had no prognostic value: (i) for EFS and OS; (ii) for isolated and isolated or combined CNS relapse; WBC count<25 × 10(9)/L and Medac E-coli asparaginase treatment were each related to a lower CNS relapse risk.

CONCLUSIONS: The presence of initial CNS involvement has no prognostic significance in EORTC 58881. Intensification of CNS-directed chemotherapy, without CNS radiation, is an effective treatment of initial meningeal leukaemic involvement.

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